

प्रारम्भिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT  
THIS TEST REPORT VALID UP TO

संख्या/No. CSIR/CMERI/FMTTC/2023/016  
माह/Month: August, 2023  
31<sup>st</sup> AUGUST, 2030



**INDICON HYDRAULIC TRACTOR TRAILER**  
(Capacity – 5T)



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
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## 4. SPECIFICATION

## 4.1 General

|                                              |                                    |
|----------------------------------------------|------------------------------------|
| Name of manufacturer                         | : M/S INDICON AGRO INDUSTRIES LLP. |
| Name of applicant                            | : Mr. Rishi Sureka                 |
| Name of Machine                              | : Hydraulic Tractor Trailer        |
| Type                                         | : Hydraulic, Tipping               |
| Make                                         | : Indicon Agro Industries Llp.     |
| Model                                        | : IND-105-TP-NTP                   |
| Serial No.                                   | : D2023C1287                       |
| Year of manufacture                          | : 2023                             |
| Recommended tractor power(hp)                | : 59 & above                       |
| Unload mass (ton)                            | : 1.374                            |
| Load recommended (ton)                       | : 3.6                              |
| Gross mass (ton)                             | : 5                                |
| Height of hitch from ground level, (mm)      | : 600                              |
| Inner size of platform, (L × W × H), (mm)    | : 2960×1720×610                    |
| Inner volume of platform, (mm <sup>3</sup> ) | : 3.10×10 <sup>9</sup>             |

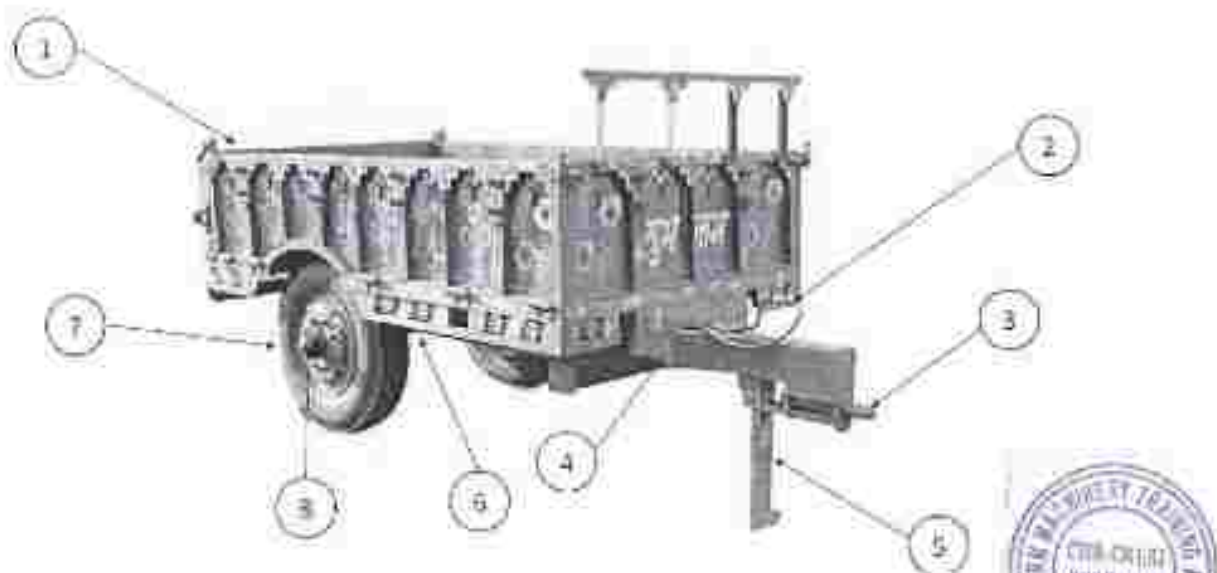


Fig. 1 Schematic view of hydraulic tractor trailer

- |                       |                          |
|-----------------------|--------------------------|
| 1. Side door          | 5. Parking stand         |
| 2. Hydraulic oil pipe | 6. Wheel axle            |
| 3. Hitch              | 7. Transportation wheels |
| 4. Trailer chassis    | 8. Hub assembly          |

## 4.2 Prime mover used

Tractor : Sonalika  
 Model : DI-745 III POWER PLUS  
 Sr. No/Engine No. : 3102IL14B1026973F5  
 Month & Year : 2020  
 Max. PTO Power, kW : 40.20 hp as per test report No. T-1143/1669/2018, T-1381/1908/2020 AE, March, 2020 issued by CFMT&TI, Budni

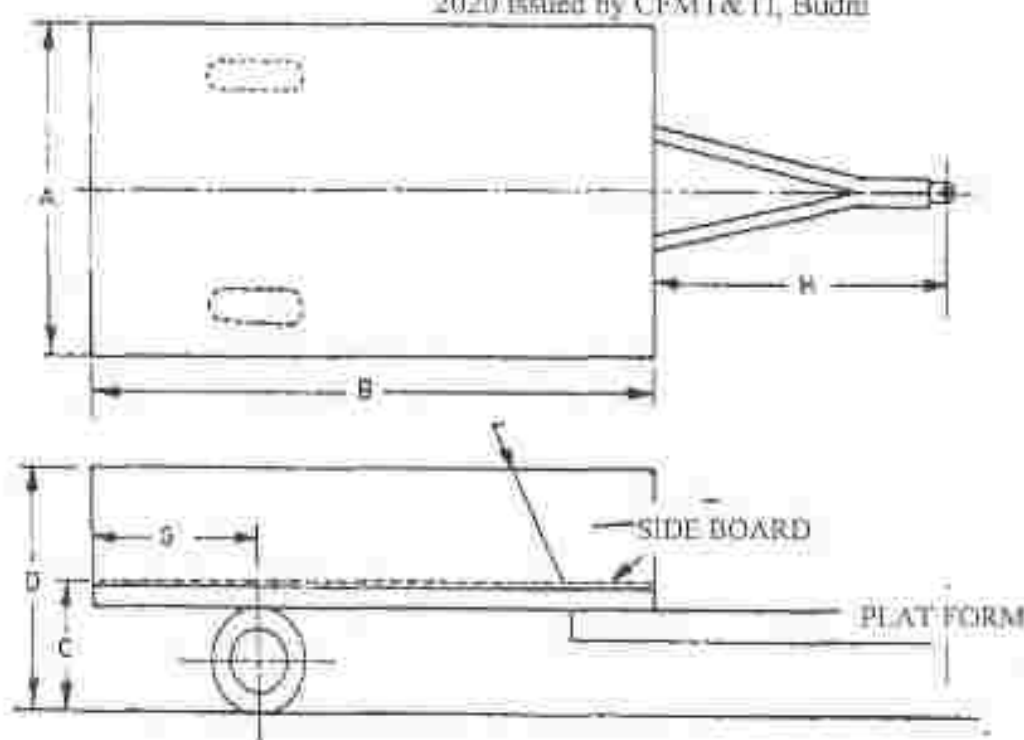


Fig. 2 Tractor Semi-Trailer as per IS: 8213:2000

| Sl. No. | Notation         | Requirement                                           | Observed | Conformity |
|---------|------------------|-------------------------------------------------------|----------|------------|
| 1       | A                | Not exceed 2.5 m                                      | 1.92 m   | Conforms   |
| 2       | B                | Not exceed 5 meter for trailer up to 5 tones capacity | 3.5 m    | Conforms   |
| 3       | C                | Not more than 1.5 m                                   | 0.971 m  | Conforms   |
| 4       | D                | Not more than 2.2 m                                   | 1.935 m  | Conforms   |
| 5       | E                | NA                                                    | --       | --         |
| 6       | F                | NA                                                    | --       | --         |
| 7       | G                | --                                                    | 1.090 m  | Conforms   |
| 8       | H                | --                                                    | 1.00 m   | Conforms   |
| 9       | Ground Clearance | Not be less than 300 mm                               | 435mm    | Conforms   |

**4.9 Toe Mechanism:**

|                                                                             |                                                              |
|-----------------------------------------------------------------------------|--------------------------------------------------------------|
| Type                                                                        | : Ring type hitch                                            |
| Detail                                                                      | : One MS rod of dia. $\phi 50\text{mm}$<br>is made as a ring |
| Dia. of hook (OD/ID) (mm)                                                   | : 108.52/41.28                                               |
| Total length of hook (mm)                                                   | : 130                                                        |
| Height of hook from ground level (mm)                                       | : 510                                                        |
| Height from main chassis to bottom of bucket in tipping position (mm)       | : 2245                                                       |
| Horizontal distance from Centre of trailer axle to Centre of toe hitch (mm) | : 2870                                                       |
| Horizontal distance from Centre of axle to rear end of trailer (mm)         | : 1075                                                       |

**4.9.1 Suspension Detail:**

It is mounted on axle with 02 (number) U clamps at each side. Leaf auxiliary spring and 15 main spring are not provided.

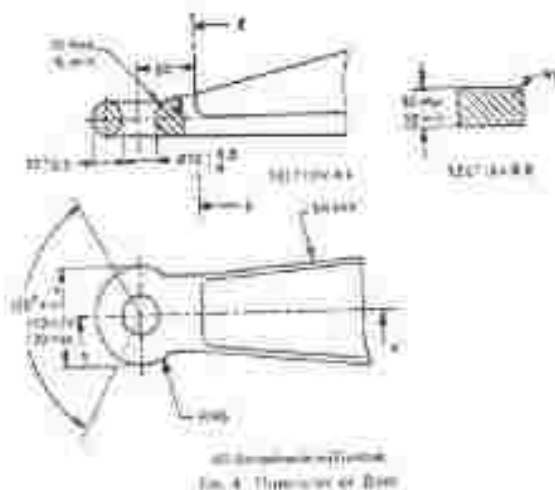


Fig. 4 (a) Dimensions of ring as per IS 11270: 1980 (Reaffirmed 1999)

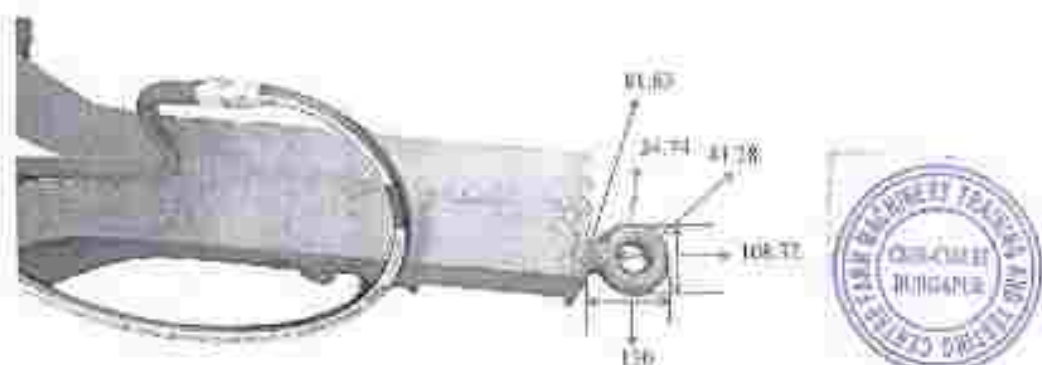


Fig. 4 (b) Dimensions of ring as observed (Dimensions in mm)

|         |                                                                                               |              |          |
|---------|-----------------------------------------------------------------------------------------------|--------------|----------|
| A-4.3   | The hub shall be fully packed with multipurpose grease between the bearing                    | Satisfactory | Conforms |
| A-5     | <b>DESIGNATION</b>                                                                            |              |          |
| A-5.1   | An axle assembly shall be designed by its class and wheel track                               |              |          |
| A-5.1.1 | An axle assembly of class A having wheel track of 1500 mm shall be designated as: axle A-1500 | A1500        | Conforms |
| A-5.1.2 | An axle assembly of class A having wheel track of 1700 mm shall be designated as: axle A-1700 | NA           | —        |
| A-6     | <b>WORKMANSHIP AND FINISH</b>                                                                 |              |          |
| A-6.1   | The casting shall be free from blowholes, pits, burn and other visual defects                 | Satisfactory | Conforms |
| A-6.2   | The sharp edge shall be removed                                                               | Satisfactory | Conforms |
| A-6.3   | A protecting coating shall be provide                                                         | Satisfactory | Conforms |

**6. HAULAGE PERFORMANCE TEST**

|                                                            |                            |
|------------------------------------------------------------|----------------------------|
| Type of trailer                                            | : Single axle, Two wheel   |
| Date of test                                               | : 04.08.2023 to 07.08.2023 |
| Type of track                                              | : Tar macadam, level       |
| Mass of trailer (tons)                                     | : 0.980                    |
| Gross mass of trailer (tons)                               | : 5.0                      |
| Height of hitch above ground level (mm)                    | : 510                      |
| Gear used during test                                      | : H-4                      |
| Average travel speed (km/h)                                | : 21.09 to 21.63           |
| Average fuel consumption:                                  | :                          |
| (in L/h)                                                   | : 3.26 to 3.93             |
| [ml./km/ton]                                               | : 36.36 to 30.91           |
| Average distance travel per liter of fuel consumption (km) | : 5.50 to 6.47             |
| <b>General observations:</b>                               |                            |
| Maneuverability of tractor-trailer combination             | : Satisfactory             |



7. LOAD MAINTANANCE TEST  
(Trailer bucket in fully raised position)

|                                                               |                                                 |
|---------------------------------------------------------------|-------------------------------------------------|
| Date of test                                                  | : 01.08.2023                                    |
| Operating conditions                                          | : Trailer parked on level ground                |
| Hydraulic oil temperature before start of test (°C)           | : 35                                            |
| Initial height from ground level (mm)                         | : 2907                                          |
| Elapsed time (min.)                                           | Cumulative drop in height of unloading box (mm) |
| 5                                                             | 4                                               |
| 10                                                            | 2                                               |
| 15                                                            | 3                                               |
| 20                                                            | 2                                               |
| 25                                                            | 3                                               |
| 30                                                            | 2                                               |
| Leakage of hydraulic fluid from any parts of hydraulic system | None                                            |
| Working of hydraulic system                                   | Satisfactory                                    |

## 8. TRAILER PLATFORM LIFTING TEST

|                                                               |                                     |
|---------------------------------------------------------------|-------------------------------------|
| Date of test                                                  | : 02.08.2023 to 04.08.2023          |
| Operating conditions                                          | : Trailer parked on level ground    |
| Ambient temperature (°C)                                      | : 29.8 to 32.1                      |
| Relative humidity (%)                                         | : 79                                |
| Hydraulic oil temperature before start of test (°C)           | : 31                                |
| No. of cycles                                                 | Temperature of hydraulic fluid (°C) |
| 100                                                           | 47.7                                |
| 200                                                           | 48.1                                |
| 300                                                           | 48.6                                |
| 400                                                           | 49                                  |
| 500                                                           | 49.5                                |
| 600                                                           | 49.9                                |
| 700                                                           | 50.4                                |
| 800                                                           | 50.8                                |
| 900                                                           | 51.3                                |
| 1000                                                          | 51.7                                |
| Leakage of hydraulic fluid from any parts of hydraulic system | None                                |
| Working of hydraulic system                                   | Satisfactory                        |



## TESTING AUTHORITY

|                                   |                                                                       |                                  |
|-----------------------------------|-----------------------------------------------------------------------|----------------------------------|
| Report Prepared by                | Sr. Technical Officer,<br>CSIR-CMERI Farm<br>Machinery Testing Centre | <i>[Signature]</i><br>10/08/2023 |
| Report Verified by                | Scientist,<br>CSIR-CMERI Farm<br>Machinery Testing Centre             | <i>[Signature]</i><br>10/08/2023 |
| Report Approved by                | In-Charge,<br>CSIR-CMERI Farm<br>Machinery Testing Centre             | <i>[Signature]</i><br>10/08/2023 |
| Report Approved for<br>release by | Head, Business Innovation and<br>Skill Group,<br>CSIR-CMERI, Durgapur | <i>[Signature]</i><br>14/8/2023  |

## 12. APPLICANT'S COMMENTS

| Para No. | Our Reference | Applicants Comment                                              |
|----------|---------------|-----------------------------------------------------------------|
| 12       | 11.1 to 11.8  | Necessary action will be taken towards your valuable suggestion |

