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POWERTRAC 4455 DS PLUS EURO TRACTOR



सत्यमेव जयते

भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय

(कृषि, सहकारिता एवं किसान कल्याण विभाग)

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE

(DEPARTMENT OF AGRICULTURE, CO-OPERATION AND FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

ट्रैक्टर नगर, बुदनी (म.प्र.) ४६६ ४४५

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

(An ISO : 9001 - 2008 Certified Institute)

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T-979/1503/2015

**ESCORTS LIMITED, POWERTRAC 4455 DS PLUS EURO
TRACTOR –
Commercial (Initial)**

Manufacturer : M/s. Escorts Limited,
Plot No 2 & 3, Sector-13,
Faridabad – 121 007 (Haryana)

Test requested by : M/s. Escorts R & D Centre,
15/5, Mathura Road,
Faridabad – 121 003 (Haryana)

Place of running-in : At applicant's works.

Duration of said running-in, (h):

- Engine : 20

- Transmission : 30

Method of Selection : The tractor was submitted directly by the
applicant for test. Hence, method of selection
is not known.

1. SPECIFICATIONS

- 1.1 Tractor:**
- Make : Escorts Limited
- Model : POWERTRAC 4455 DS PLUS EURO
- Brand name : POWERTRAC
- Type : Four wheeled, rear-wheel driven, General
purpose Agricultural Tractor.
- Year of manufacture : 2014
- Chassis number : T05- 3246316
- Country of origin : India
- Variants, if any * : None
- 1.2 Engine:**
- Make : Escorts Limited
- Model : AE4.312A-3A
- Type : Four stroke, Naturally aspirated, water cooled,
direct injection, diesel engine.
- Serial number : E - 3272523
- Year of manufacture : 2014
- 1.2.1 Engine speed(Manufacturer's recommended production setting), (rpm):**
- Maximum speed at no load : 2300 to 2400
- Low idle speed : 600 to 700
- Speed at maximum torque : 1200 to 1300
- Rated speed, (rpm):**
- For PTO use : 2200
- For drawbar use : 2200
- 1.3 Cylinder & Cylinder Head:**
- Number : Four
- Disposition : Vertical, Inline
- Bore/stroke, (mm) : 95/110
- Capacity as specified by the applicant, (cc) : 3120



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17. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

16.1 Evaluative (mandatory) / Non-evaluation (Non-mandatory) parameter applicable for qualifying Minimum Performance criteria as per Clause-4 (Table-1) of IS: 12207-2014 for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:

| S. No. | Characteristic | Category (Evaluative / Non Evaluative) | Requirements as per IS: 12207-2014 | Values declared by the applicant/ requirement | As observed | Whether meets the require- ments (Yes/No.) |
|--------|---|---|--|---|----------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17.1.1 | PTO Performance : | | | | | |
| a) | - Max. power under 2 h test, (kW) (Natural ambient condition) | Evaluative | Declared value to be achieved with a tolerance of: -5 / +10% for PTO power >26 kW. -7.5/+10% for PTO power ≤ 26 kW or-5 / +10% for Engine power >26 kW. -7.5/+10% for Engine power ≤ 26 kW | 33.3 | 34.2 | Yes |
| b) | Power at rated engine speed, (kW) | Non Evaluative | -do- | 33.3 | 34.2 | Yes |
| c) | Specific fuel consumption corresponding to maximum power, (g/kWh) | Non Evaluative | ± 5% | 256 | 247 | Yes |
| d) | Maximum equivalent crankshaft torque, (Nm) | Non Evaluative | ± 8% | 181.3 (D) | 184.95 | Yes |
| e) | Back-up torque, percent | Non Evaluative | 10 percent, min. | 10 percent, min (R) 20 percent, min (D) | 24.60 | Yes |
| f) | Maximum operating temperature (°C) | | | | | |
| 1) | Engine oil | Non Evaluative | The declared value should not exceed the max. value specified by the oil company and the observed value under high ambient condition should not exceed the declaration. | 130(D) | 101 | Yes |



CTIONS

Applicable for
07-2014 for
summarized as

| | |
|--|---|
| Whether meets the require- ments (Yes/No.) | 7 |
|--|---|

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|-----|
| Yes |
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| Yes |
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|-----|
| Yes |
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| Yes |
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|-----|
| Yes |
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|-----|
| Yes |
|-----|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------------------------------|---|----------------|---|----------------------|-------|-----|
| | 2) Coolant (water) | Evaluative | The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration. | 110 (D) | 87 | Yes |
| | g) Engine oil consumption, (g/kWh) | Evaluative | Not exceeding 1% of SFC at max. power under High ambient conditions | 2.47 (R) 2.56 (D) | 0.25 | Yes |
| | h) Smoke level | Evaluative | Maximum light absorption coefficient of 3.25 per meter or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR) | 3.25 per meter (R) | 0.09 | Yes |
| 17.1.2 Drawbar performance : | | | | | | |
| | a) Max. drawbar pull with ballast corresponding to 15 percent wheel slip, (kN) | Non Evaluative | Minimum 65% of static mass with ballast | 18.1 (R) 17.6 (D) | 25.60 | Yes |
| | b) Max. drawbar pull with Un ballasted corresponding to 15 percent wheel slip, (kN) | Evaluative | Minimum 65% of static mass of tractor without ballast/ with standard ballast | 14.60 (R) 14.1(D) | 20.69 | Yes |
| | c) Maximum drawbar power without ballast, (kW) | Evaluative | Minimum 80 % of PTO power as referred in Si No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg Minimum 75 % of PTO power as referred in Si No. i) a) of PTO performance in case of light weight tractors having 1500 kg total static mass of tractor Minimum 75 % of the engine power as referred in Si No. i) a) of engine performance in case of tractors which do not have a PTO shaft. | 27.4 (R) 26.7(D) | 32.1 | Yes |
| | d) Maximum transmission oil temperature (°C) | Non Evaluative | The declared value should not exceed the maximum value specified by oil company | 130(D) | 84 | Yes |



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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|----------------|--|--------------------|------------|-----|
| 17.1.3 | Power lift and hydraulic pump performance: | | | | | |
| a) | Maximum lifting capacity throughout the range of lift, (kN): | | | | | |
| 1) | At hitch points | Non Evaluative | [Tolerance of minus 10%] | 14.7 (D) | 13.90 | Yes |
| 2) | With the standard frame | Evaluative | The lift capacity should at least be 24 kg/PTO kW. and it should be 21.5 kg/engine kW where the tractor is not provided with a PTO shaft | 8.0 (R) 9.8 (D) | 10.71 | Yes |
| b) | Maximum drop in the height of the point of application of the force after each 5 minutes interval for a total duration of 30 minute, (mm) | Non Evaluative | The observed value should not exceed 50 mm | 50 (D) | 08 | Yes |
| 17.1.4 | Brake performance at 25 kmph: | | | | | |
| a) | Maximum stopping distance at a force, equal to or less than 600 N on brake pedal with Un ballast*, (m): | | | | | |
| 1) | Cold brake | Evaluative | 10 | 10 | 7.93 | Yes |
| 2) | Hot brake | Evaluative | 10 | 10 | 8.46 | Yes |
| b) | Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s ² (N) | Evaluative | 600 | 600 | 361 to 365 | Yes |
| c) | Whether parking brake is effective at a force of 600 N at foot pedal(s) or 400 N at hand lever | Evaluative | Yes / No | Yes | Yes | Yes |
| *Manufacturer not recommended the road ballast | | | | | | |
| 17.1.5 | Noise measurement : | | | | | |
| a) | Maximum ambient noise emitted by the tractor dB(A) | Evaluative | As per CMVR | 88 | 86 | Yes |
| b) | Maximum noise at operator's ear level dB(A) | Evaluative | As per CMVR | 98 | 93 | Yes |



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|--------|---|---------------------------|---|---|--|--|-----|
| 17.1.6 | Amplitude of mechanical vibrations at : | | | | | | |
| | 1) | Right foot rest | Non Evaluative | 100 microns (max.) | 100 micron (max) | 90 | Yes |
| | | left foot rest | | | | 30 | Yes |
| | 2) | Seat (with driver seated) | | | | 90 | Yes |
| 3) | Steering control wheel | 130* | | | | No | |
| 17.1.7 | Haulage requirements : | | | | | | |
| a) | Gross mass of the trailers, (tones): | | | | | | |
| | 1) | Two wheel | Non Evaluative | -- | 5.0 (D) | 5.0 | Yes |
| | 2) | Four wheel | | -- | 6.0(D) | 6.0 | Yes |
| b) | Distance travelled / litre of fuel consumption, (km/l): | | | | | | |
| | 1) | Two wheel | Non Evaluative | -- | 4.0 to 6.5 | 5.11 to 5.23 | Yes |
| | 2) | Four wheel | | -- | 4.0 to 6.5 | 5.51 to 5.59 | Yes |
| c) | Fuel consumption (ml/km/tonne): | | | | | | |
| | 1) | Two wheel | Non Evaluative | -- | 25 to 35 | 38.20 to 39.16 | No |
| | 2) | Four wheel | | -- | 25 to 35 | 29.82 to 30.22 | Yes |
| 17.1.8 | Wetland cultivation : | | | | | | |
| | Sealing for the following assemblies: | | Evaluative | The identified assemblies should essentially meet the requirement of IS: 11082. No water ingress in the identified assembly given in column-2. If tractor does not meet the requirements of wetland cultivation, it may be recommended for dry land operation only. | There should be no ingress of water and/or mud | No ingress of water was observed during water proof test | Yes |
| | 1) | Clutch assembly | -do- | | | | |
| | 2) | Brake housings | -do- | | | | |
| | 3) | Front axle hubs | -do- | | | | |
| | 4) | Engine Oil | -do- | | | | |
| | 5) | Transmissi on Oil | -do- | | | | |
| 17.1.9 | Safety features : | | | | | | |
| a) | Guards against moving and hot parts | Evaluative | Belt drives, pulley, silencer, hydraulic pipes (As per IS 12239 (part 2)) | ... | Meets the requirements | Yes | |
| b) | Lighting arrangement | Evaluative | As per CMVR * | ... | Meets the requirements | Yes | |
| c) | Seating requirements (Tractors having more than 1150 mm rear track width) | Non Evaluative | Should meet the requirements of IS: 12343 (As amended from time to time) | ... | Does not Meet the requirements | No | |



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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------|--|----------------|---|-------|--------------------------------|-----|
| d) | Technical requirements for PTO shaft | Non Evaluative | Should meet the requirements of IS: 4931 (As amended from time to time) | -- | Meets the requirements | Yes |
| e) | Dimensions of three point linkage | Non Evaluative | Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time) | -- | Does not Meet the requirements | No |
| f) | Specifications of linkage drawbar | Non Evaluative | Should meet the requirements of IS 12953 and IS 12362 (Part 3) (As amended from time to time) | -- | Does not Meet the requirements | No |
| | Swinging drawbar | | | | Not Provided | |
| 17.1.10 | Labelling of tractors (Provision of labelling plate): | | | | | |
| | 1) Make | Evaluative | Should conform to the requirements of CMVR along-with declared value of PTO HP | -- | Escorts Limited | Yes |
| | 2) Model | Evaluative | | -- | POWERTRAC 4455 DS PLUS EURO | Yes |
| | 3) Year of manufacture | Evaluative | | -- | 2014 | Yes |
| | 4) Chassis number | Evaluative | | -- | T05-3246316 | Yes |
| | 5) Engine number | Evaluative | | -- | E-3272523 | Yes |
| | 6) Declaration of PTO power, (kW) | Evaluative | | -- | 33.3 | Yes |
| 17.1.11 | Discard limit for: | | | | | |
| (a) | Cylinder bore diameter, (mm) | Evaluative | To be declared by the manufacturer | 95.30 | 95.01 to 95.03 | Yes |
| (b) | Clearance between piston & cylinder liner at skirt, (mm) | Non Evaluative | -do- | 0.50 | 0.130 to 0.135 | Yes |
| (c) | Ring end gap (mm): | | | | | |
| | - Top comp. ring. | Evaluative | -do- | 2.0 | 0.43 to 0.55 | Yes |
| | - 2 nd comp. ring. | | -do- | 2.0 | 1.05 to 1.10 | Yes |
| | - Oil ring. | | -do- | 2.0 | 0.48 to 0.63 | Yes |
| (d) | Ring groove clearance (mm): | | | | | |
| | - Top comp. ring. | Evaluative | -do- | 0.50 | tapered face | -- |
| | - 2 nd comp. ring. | | -do- | 0.40 | 0.062 to 0.069 | Yes |
| | - Oil ring. | | -do- | 0.30 | 0.046 to 0.069 | Yes |

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| |
|----------------|
| 1 (e) |
| (g) |
| (h) |
| (i) |
| 17.1.12 |
| (a) |
| (b) |
| (c) |
| 17.1.12 |
| Sl. No. |
| 1. |
| 2. |
| 3. |
| 4. |

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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------|---|--|---|-----------------------------------|--|-----|
| (e) | Clearance of main bearings (mm): | | | | | |
| | - Diametrical clearance | Evaluative | -do- | 0.40 | 0.087 to 0.099 | Yes |
| | - Crankshaft end float | Evaluative | -do- | 0.75 | 0.20 | Yes |
| (g) | Clearance of big end bearings, (mm): | | | | | |
| | - Diametrical | Evaluative | To be declared by the manufacturer | 0.40 | 0.059 to 0.075 | Yes |
| | - Axial | Evaluative | -do- | 0.75 | 0.30 | Yes |
| (h) | Clearance between king pin and bush, (mm) | Non Evaluative | -do- | 0.40 | 0.172 to 0.248 | Yes |
| (i) | Clearance between center pin and bush, (mm) | Non Evaluative | -do- | 0.40 | 0.174 to 0.245 | Yes |
| 17.1.12 | Literature | | | | | |
| (a) | Operator manual | Evaluative | Provided/Not Provided | As per relevant IS Code (IS 8132) | Provided | Yes |
| (b) | Parts Catalogue | Evaluative | Provided/Not Provided | As per relevant IS Code (IS 8132) | Provided | Yes |
| (c) | Workshop/ Service manual | Evaluative | Provided/Not Provided | As per relevant IS Code (IS 8132) | Provided | Yes |
| 17.1.12 | CATEGORY OF BREAKDOWNS / DEFECTS : | | | | | |
| Sl. No. | Category of breakdowns | Category (Evaluative / Non Evaluative) | Requirements as per IS: 12207-2014 | As observed | Whether meets the requirements (Yes/No.) | |
| 1. | Critical | Evaluative | No critical breakdown | None | Yes | |
| 2. | Major | Evaluative | Not more than two and neither of them should be repetitive in nature | None | Yes | |
| 3. | Minor | Evaluative | Not more than five and frequency of each should not be more than two. | None | Yes | |
| 4. | Total breakdowns | Evaluative | In no case, the total number of breakdowns should exceed five, that is, (2 major + 3 minor) or 5 minor breakdowns | None | Yes | |



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| 17.2 Optional requirements as per Clause-4 (Table-2) of IS:12207-2014: | | | | |
|---|--|---|------------------------|---------|
| S. No. | Characteristic | Requirements as per IS: 12207-2014 | AS observed | Remarks |
| 1 | 2 | 3 | 4 | 5 |
| 1 | Air cleaner oil pull over, max. oil pull over (%) | 0.25% (max.) | Oil bath type (0.14 %) | Yes |
| 2. | Seating requirements | Should meet the requirements of IS: 12343-1998 | Does not conform | No |
| 3. | Fitment of ROPS | With a provision for fitment of ROPS. If ROPS fitted it should meet the requirement of IS: 11821-1992 | Not provided | -- |
| 4. | Technical requirements for PTO shaft & its Master shield | Should meet the requirements of IS: 4931 -1995 | conforms | Yes |
| 5. | Dimensions of three point linkage | Should meet the requirements of IS: 4468 (Part-I)-1997 | Does not conform | No |
| 6. | Specifications of linkage drawbar. | Should meet the requirements of IS: 12953-1990 | Does not conform | No |
| 7. | Specifications of swinging drawbar | Should meet the requirements of IS:12362 Part 3-1994. | Not provided | -- |
| 8. | Accessories | Trailer hitch, front tow hook, linkage drawbar may be provided. | Provided | Yes |

17.3

Conformity with following Indian Standard:

- i) Guidelines for declaration of power and specific fuel consumption and labeling of agricultural tractors (First revision) [IS: 10273-1987 (Reaffirmed in March, 2009)] : **Conforms**
- ii) Agricultural tractors – Rear mounted power take-off - Types 1, 2 and 3(third revision)[IS: 4931-1995 (Reaffirmed in March, 2009)] : **Conforms**
- iii) Agricultural wheeled tractors - Rear mounted three-point linkage: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS 4468 (Part-I):1997 (Reaffirmed in March, 2007)/ISO 730-1:1994] : **Does not conform**
- iv) Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed in March, 2007)]. : **Does not conform**
- v) Agricultural tractors – Operator's seat technical requirement [IS 12343 –1998 (First revision) (Reaffirmed in March, 2009)]. : **Does not conform**
- vi) Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements (first revision) : [IS 12239 (PT-1)-1996 (Reaffirmed in March, 2009)/ISO 4254-1:1989]. : **Does not conform**
- vii) Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (first revision) IS 12239 (PT-2)-1999 (Reaffirmed in March, 2009)]. : **Does not conform**



Remarks

viii) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment – Symbols for operator controls and other displays [IS: 6283 (Part-1 & Part-2) –2006 & 2007(Reaffirmed in March, 2009)/ ISO 3767-2:1991]. : Conforms

ix) Guide lines for location and operation of operator controls on agricultural tractors and machinery (first revision) (IS: 8133 – 1983) (Reaffirmed in March, 2009)]. : **Does not conform**

x) Agricultural Tractor & Machinery Lighting device for travel on public roads (IS: 14683-1999) (Reaffirmed in March, 2009)] : Conforms

17.4 Salient Observations:

17.4.1 Laboratory tests:

17.4.1.1 PTO Performance:

i) The backup torque is 24.60

ii) The specific fuel consumption corresponding to maximum power was measured as 247 g/kWh against the declaration of 256 g/kWh, which is within the tolerance limit of IS: 12207-2014.

17.4.1.2 Drawbar performance test:

During 10 hour drawbar test, the creeping of RHS rear tyre over the rims was observed as 50 mm, which was considered on higher side. This may be looked into for necessary corrective action.

17.4.1.3 Hydraulic performance test:

i) The maximum tilt angle of mast from vertical over the full range of lift was observed as 6.0 degrees against the minimum requirement of 10 degree as per IS: 12224-1987. This should be looked into for necessary corrective action.

17.4.1.3 Mechanical Vibration:

The amplitude of mechanical vibration on various assemblies marked as (*) in Chapter-9 of this test report is on higher side, especially at the steering wheel. This calls for dampening down of vibrations to improve the operational comfort and service life of components.

17.4.1.4 Three point linkage:

The lateral distance from lower hitch point to center line of tractor does not meet the requirements of IS-4468-(Part I)-1997. This should be looked into for necessary corrective action.

17.4.1.5 Haulage performance:

(i) The specific fuel consumption with two wheel trailer was observed as 38.20 to 39.16 ml/km/tonne against the declaration 25 to 35 ml/km/tonne This does not meet the requirement of IS: 12207-2014 and therefore, should be looked into for necessary corrective action.

17.4.2 Field performance test:

17.4.2.1 Wet land cultivation (Puddling operation):

No ingress of mud/or water was noticed during puddling operation of the tractor. Hence, It meets the requirements of IS: 11082-1984 (Technical requirements of agricultural tractors for wetland operation). The tractor is suitable for wetland operation (Puddling).



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17.5 Maintenance / Service Problems:

No noticeable maintenance or service problem was observed during the test.

17.6 Recommendation with regard to safety on tractor:

The following requirements, inter alia, may be considered for incorporation on the tractor:

- i) Provision for spark arresting device in exhaust system.
- ii) The working clearance around external circuit lever may be provided as per IS: 12239 (Part-2) – 1999.
- iii) Fuel shut-off knob does not remain in "STOP" position.

17.7 Adequacy of Literature supplied with machine:**17.7.1** The following literature was supplied with the tractor for reference during the testing.

- i) Operator's Manual in respect of POWERTRAC 4455 DS PLUS EURO tractor.
- ii) Tractor parts catalogue in respect of POWERTRAC 4455 DS PLUS EURO tractor.
- iii) Tractor Repair Manual (Draft copy) in respect of POWERTRAC 4455 DS PLUS EURO tractor.

17.7.2 It is recommended that relevant literature may be updated by incorporating the following information:

- i) Information on the components / assemblies such as hydraulic oil cooler etc.

17.7.3 The literatures should also be brought out in national as well as other regional languages for the guidance of users and service personnel.**18. CITIZEN CHARTER**

| Time frame for Testing & Evaluation as per Citizen Charter | Duration of Test | Whether the Test Report is released within the time frame given in Citizen Charter | Remarks |
|--|--------------------------------|--|--|
| 11 Months | September , 2014 to July, 2015 | No | Non availability of field for the wet land cultivation |

TESTING AUTHORITY:

H.L. YADAV
SENIOR AGRICULTURAL ENGINEER

C.R. LOHI
DIRECTOR

Test Report compiled by **Shri Nitesh Kumar Verma**, Senior Technical Assistant.



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18. APPLICANT'S COMMENTS

| Sl. No. | Para No. | Our Reference | Applicant's comments |
|---------|----------|---|--|
| 1. | 18.1 | 17.3 (iii), (iv), (v), (vii), (ix), 17.4.1.4 & 17.6 | These are being studied & corrective action would be taken care in near future. |
| 2. | 18.2 | 17.4.1.2, 17.4.1.3, 17.4.1.3, 17.4, 1.5, & 17.7.1 | Your valuable comments & suggestions for improvements are well taken. Under our policy of continuous product improvement these aspects are further being looked into & will try to eliminate these deviations soon wherever necessary. |

ANNEXURE-I**BRIEF SPECIFICATION OF IMPLEMENTS USED DURING FIELD TEST**

| S. No | Item | Disc Plough | Rotavator |
|-------|----------------------------------|-----------------|------------------|
| 1. | Make | Field King | Maschio Itali |
| 2. | Type | Mounted | Mounted |
| 3. | No. of Disc/blades | Three | 42, in 8 flanges |
| 4. | Type of Disc/blades | General purpose | Hatchet |
| 5. | Size of bottoms/blades, (mm) | 605 | 245 x 75 x 6 |
| 6. | Spacing of bottoms/flanges, (mm) | 520 | 245 |
| 7. | Lower hitch point span, (mm) | 855 | 735 |
| 8. | Mast height, (mm) | 440 | 470 & 610 |
| 9. | Overall dimensions, (mm): | | |
| | - Length | 2030 | 1020 |
| | - Width | 1750 | 1985 |
| | - Height | 1070 | 1045 |
| 10. | Gross mass, (kg) | 365 | 440 |

ANNEXURE – II**BRIEF SPECIFICATION OF FULL CAGE WHEEL**

| S. No. | Items | Specification |
|--------|--------------------------------|---|
| 1 | Type | Full cage wheel |
| 2 | Outer dia. (mm) | 1210 |
| 3 | Width (mm) | 870 |
| 4 | No. & Type of Lugs | 24, straight lugs made of MS angle section welded to angle iron frame |
| 5 | Size of angle section, (mm) | 40 x 40 x 5 |
| 6 | Length of lug, (mm) | 435 |
| 7 | Spacing of lug, (mm) | 260 |
| 8 | Weight of each cage wheel (kg) | 140 |



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ESCORTS LIMITED, POWERTRAC 4455 DS PLUS EURO
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| A. | LABORATORY AND TRACK TESTS: | HOURS |
|-----------|--|--------------|
| 1. | Running-in | -- |
| 2. | PTO performance test | 12.6 |
| 3. | Power lift and hydraulic pump performance test | 1.9 |
| 4. | Drawbar performance test | 17.4 |
| 5. | Turning ability | 0.2 |
| 6. | Location of centre of gravity | 0.4 |
| 7. | Operator's field of vision | 0.2 |
| 8. | Brake test | 1.2 |
| 9. | Noise measurement | 1.5 |
| 10. | Air cleaner oil pull over test | 3.5 |
| 11. | Mechanical vibration test | 1.0 |
| 12. | Nominal speed test | 0.6 |
| B. | FIELD TEST: | |
| 1. | Disc ploughing | 11.1 |
| 2. | Rotavation | 10.0 |
| 3. | Wet land including water proof test | 15.4 |
| C. | HAULAGE TEST: | 5.5 |
| D. | Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test | 7.4 |
| | TOTAL: | 89.9 |