

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: TH-32/2365/2019  
माह/Month : October, 2019

**THIS TEST REPORT VALID UP TO : 31<sup>st</sup> October, 2026**



**SONALIKA SLWT-36 X 42 WHEAT THRESHER  
(TRACTOR OPERATED)**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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**5.2 Provision for Adjustments :**

| Sl. No | Parameters                 | Observations |
|--------|----------------------------|--------------|
| (a)    | Feed rate                  | Not provided |
| (b)    | Concave clearance          | Not provided |
| (c)    | Speed of blower            | Not provided |
| (d)    | Speed of thresher cylinder | Not provided |
| (e)    | Sieve assembly slope       | Provided     |
| (f)    | Air displacement           | Provided     |

**6. TEST AT NO-LOAD****6.1 Power Consumption :**

| Sl. No | Parameters                   | Observations |
|--------|------------------------------|--------------|
| 1      | 2                            | 3            |
| (a)    | Source of power              | Tractor      |
| (b)    | Type of drive                | PTO          |
| (c)    | Total time of run, (h)       | 1.0          |
| (d)    | Avg. power requirement, (kW) | 2.15         |

**6.2 Observations :**

- No undue knocking/rattling sound was observed.
- No slippage of belts was noticed.
- No marked oscillation was noticed during the operation.
- All the shafts runs smoothly.
- No remarkable increase in the temperature of bearing was noticed.
- The shaking mechanism was reciprocating smoothly.
- No unusual vibration of the thresher was noticed.
- No unusual wear or slackness in any component.

After running-in, the following adjustments were made & maintained throughout the test :-

| Sl. No | Parameters                               | Adjustments |
|--------|--|-------------|
| 1      | No -load threshing cylinder speed, (rpm) | 601 to 603  |
| 2      | No -load speed of tractor engine , (rpm) | NR          |
| 3      | No -load speed of blower                 | 601 to 603  |
| 4      | No -load speed of shaker unit ,(rpm)     | 326 to 327  |

**7. PERFORMANCE TEST**

Test for Wheat Threshing was carried out for 26.25 hours.

Detailed crop parameters are shown in Annexure-I and results of field tests are shown in Annexure-II and summarized in the ensuing table.

**CROP PARAMETERS**

| Sl. No. | Parameters       | Range   |
|---------|------------------|---------|
| 1       | Name of the crop | Wheat   |
| 2       | Variety of crop  | HD-2968 |



|   |                                     |                    |
|---|-------------------------------------|--------------------|
| 3 | Avg. grain-crop ratio               | 0.497:1 to 0.566:1 |
| 4 | Avg. Moisture content of grain, (%) | 8.5 to 8.6         |
| 5 | Avg. Moisture content of straw (%)  | 10.4 to 10.5       |

## MACHINE PARAMETERS

| Sl. No | Parameters  | Range                    |
|--------|---|--------------------------|
| 1      | Avg. Prime mover speed, (rpm)<br>-No load<br>-On load   | NR                       |
| 2      | Avg. Drum/Cylinder speed, (rpm)<br>-No load<br>-On load | 601 to 603<br>547 to 549 |
| 3      | Avg. Blower speed, (rpm)<br>-No load<br>-On load        | 601 to 603<br>547 to 549 |
| 4      | Avg. Shaker speed, (rpm)<br>-No load<br>-On load        | 326 to 327<br>298 to 299 |

## SUMMARY OF FIELD PERFORMANCE TEST

| Sl. No. | Parameter                                      | At Max. input capacity | At input* capacity as agreed upon by the manufacturer | At 50% input capacity as agreed upon by the manufacturer | At cylinder speed 15% higher than specified | At cylinder speed 15% lower than specified |
|---------|--|------------------------|---|--|---|--|
| 1       | Avg. Feed rate, (kg/h)                         | 1705.2                 | 1423.3  | 954.4  | 1768.5                                      | 1183.4                                     |
| 2       | Avg. Output from main outlet, (kg/h)           | 1117.8                 | 738.0   | 540.0  | 877.8                                       | 606.0                                      |
| 3       | Avg. corrected output from main outlet, (kg/h) | 675.0                  | 560.9   | 376.3  | 694.9                                       | 467.7                                      |
| 4       | Avg. Grain-crop ratio                          | 0.656:1                | 0.518 : 1   | 0.566 : 1  | 0.497 : 1                                   | 0.510 : 1                                  |
| 5       | Avg. Percentage of losses, (%)                 |                        |   |  |   |  |
|         | -Broken  | 6.13                   | 3.42  | 0.90   | 5.24  | 0.00                                       |
|         | -Blown   | 0.03                   | 0.02  | 0.03   | 0.03  | 0.01                                       |
|         | -Un threshed                                   | 0.08                   | 0.15  | 0.11   | 0.07  | 0.15                                       |
|         | -Spilled                                       | 0.00                   | 0.00  | 0.00   | 0.00  | 0.00                                       |
| 6       | Avg. Total machine losses                      | 6.24                   | 3.59  | 1.04   | 5.34  | 0.16                                       |



|   |                             |       |       |       |       |       |
|---|-----------------------------|-------|-------|-------|-------|-------|
| 7 | Avg. Efficiency, (%)        |       |       |       |       |       |
|   | -Threshing                  | 99.92 | 99.85 | 99.89 | 99.93 | 99.85 |
|   | -Cleaning                   | 93.80 | 96.32 | 99.03 | 99.85 | 99.55 |
| 8 | Av. Fuel consumption, (l/h) | 6.20  | 5.40  | 4.20  | 6.50  | 4.00  |

\* It was not possible to conduct the test at rated input capacity, as the manufacturer failed to declare the rated input capacity, however in the agreement of manufacturer's representative, the test was conducted at this setting.

### 7.1 -Test at Max. input capacity

#### 7.1.1 Rate of work

- The input rate was recorded as 1705.2 kg/h.
- The grain output at main outlet was recorded as 1117.8 kg h.
- The corrected grain output at main outlet was recorded as 675.0 kg/h.

#### 7.1.2 Quality of work

- The percentage of broken grain was recorded as 6.13
- The percentage of blown grain was recorded as 0.03
- The percentage of un threshed grain was recorded as 0.08
- The percentage of spilled grain was recorded as 0.00
- The percentage of threshing efficiency was recorded as 99.92
- The percentage of cleaning efficiency was recorded as 93.80

#### 7.1.3 Fuel consumption

- Avg. fuel consumption was observed as 6.20 l/h.

### 7.2 - Test at input capacity as agreed upon by the manufacturer

#### 7.2.1 Rate of work

- The input rate was recorded as 1423.3 kg/h.
- The grain output at main outlet was recorded as 738.0 kg/h.
- The corrected grain output at main outlet was recorded as 560.9 kg/h.

#### 7.2.2 Quality of work

- The percentage of broken grain was recorded as 3.42
- The percentage of blown grain was recorded as 0.02
- The percentage of un threshed grain was recorded as 0.15
- The percentage of spilled grain was recorded as 0.00
- The percentage of threshing efficiency was recorded as 99.85
- The percentage of cleaning efficiency was recorded as 96.32

#### 7.2.3 Fuel Consumption

- Avg fuel consumption was observed as 5.40 l/h

### 7.3 - Test at 50% input capacity as agreed upon by the manufacturer

#### 7.3.1 Rate of work

- The input rate was recorded as 954.4 kg/h.
- The grain output at main outlet was recorded as 540.0 kg/h.
- The corrected grain output at main outlet was recorded as 376.3 kg/h.

#### 7.3.2 Quality of work

- The percentage of broken grain was recorded as 0.90
- The percentage of blown grain was recorded as 0.03
- The percentage of un threshed grain was recorded as 0.11



- The percentage of spilled grain was recorded as 0.00
- The percentage of threshing efficiency was recorded as 99.89
- The percentage of cleaning efficiency was recorded as 99.03
- 7.3.3 Fuel consumption:**
  - Avg. fuel consumption was observed as 4.20 l/h
- 7.4 - Test at 15% higher speed than recommended cylinder speed**
- 7.4.1 Rate of work**
  - The input rate was recorded as 1768.5 kg/h.
  - The grain output at main outlet was recorded as 877.8 kg/h.
  - The corrected grain output at main outlet was recorded as 694.9 kg/h.
- 7.4.2 Quality of work**
  - The percentage of broken grain was recorded as 5.24
  - The percentage of blown grain was recorded as 0.03
  - The percentage of un threshed grain was recorded as 0.07
  - The percentage of spilled grain was recorded as 0.00
  - The percentage of threshing efficiency was recorded as 99.93
  - The percentage of cleaning efficiency was recorded as 99.85
- 7.4.3 Fuel consumption:**
  - Avg. fuel consumption was observed as 6.50 l/h
- 7.5 - Test at 15% lower speed than recommended cylinder speed**
- 7.5.1 Rate of work**
  - The input rate was recorded as 1183.4 kg/h.
  - The grain output at main outlet was recorded as 606.0 kg/h.
  - The corrected grain output at main outlet was recorded as 467.7 kg/h.
- 7.5.2 Quality of work**
  - The percentage of broken grain was recorded as 0.00
  - The percentage of blown grain was recorded as 0.01
  - The percentage of un threshed grain was recorded as 0.15
  - The percentage of spilled grain was recorded as 0.00
  - The percentage of threshing efficiency was recorded as 99.85
  - The percentage of cleaning efficiency was recorded as 99.55
- 7.5.3 Fuel consumption:**
  - Avg. fuel consumption was observed as 4.00 l/h
- 7.6 Long run Test:**
  - Long run test for wheat crop threshing was conducted for 22.42 hrs. During the test no noticeable defect observed in thresher.

| Sl. No. | Nature of work             | Labour required |
|---------|----------------------------|-----------------|
| 1       | Crop handling              | 02              |
| 2       | Continuous feeding of crop | 01              |
| 3       | Grain and straw handling   | 02              |
|         | Total                      | 05              |



**12. COMMENTS & RECOMMENDATIONS**

- 12.1 The specification of feeding chute does not conform to requirement of IS: 9020- 2002. This **MUST** be looked into taken care for safety concern of operator.
- 12.2 Labeling plate is provided on the machine. But the year of manufacture and recommended crops are not specified on labeling plate. These **MUST** be specified.
- 12.3 The specification of power input connection does not conform to the requirement of IS: 4931-1995. This **MUST** be looked into.
- 12.4 The dimensions of power input connection yoke bore does not meet the requirement of IS- 4931-1995. This **MUST** be taken care in future production level.
- 12.5 There is no provision for changing screen pitch, sieve speed, eccentricity of shaking mechanism sieve clearance etc. on thresher. It should be provided.
- 12.6 Guards on propeller shaft **MUST** be provided to enhance the safety of the operator.
- 12.7 Provision for adjustment of feed rate and changing the speed of threshing cylinder and blower is not provided. It **MUST** be provided.
- 12.8 Marking of inlet, outlet and direction of rotation of threshing unit is not marked on thresher . It **MUST** be marked.
- 12.9 The recommended grade of lubricant and lubricating schedule is not specified. It **MUST** be specified for the guidance of user & for enhancing the life of machine.
- 12.10 The rated input capacity is not specified by the applicant , It **MUST** be Specified
- 12.11 There is not provision for adjustment of concave clearance on the thresher. It **MUST** be provided.
- 12.12 The Thickness of sieve is not provided as per requirement of Indian standard. It should be looked into.
- 12.13 No tools supplied with the thresher. The tool should be supplied for service and adjustment.
- 12.14 Complete removal of guard is required for servicing of some assembly. It should be looked in to.
- 12.15 **Adequacy of literature**  
Service and Operation cum Spare parts catalogue of thresher in English and Hindi language was provided in a single booklet form for reference during the test.  
The operation manual should be updated as per IS:8132-1999.

**TESTING AUTHORITY**

|  |                   |
|--|-------------------|
| R. K. NEMA<br>SENIOR AGRICULTURAL ENGINEER | <i>Ran</i>        |
| P. K. PANDEY<br>DIRECTOR                   | <i>U Bn- mosh</i> |



Draft test report compiled by: Maan Singh, STA



**13. APPLICANT'S COMMENTS**

| Para No | Our reference | Applicant's comments  |
|---------|---------------|---|
| 13.1    | 12.1          | The specifications of feeding chute will be provided as per IS:9020-2002                  |
| 13.2    | 12.2          | The labeling plate will be provided as per requirement.                                   |
| 13.3    | 12.3          | The all dimensions of PIC (Power input connection) will be provided as per IS: 4931-1995. |
| 13.4    | 12.6          | Guards on propeller shaft will be provided.   |
| 13.5    | 12.7          | Speed of threshing cylinder can be changed by changing the driver/driven/pulies.          |
| 13.6    | 12.8          | Marking of inlet, outlet and direction of rotation will be provided.                      |
| 13.7    | 12.9          | The recommended grade of lubricant and lubricating schedule will be provided.             |
| 13.8    | 12.12         | The thickness of sieve will be corrected.   |
| 13.9    | 12.15         | The correct literature as per IS: 8132-1999 will be provided.                             |

