

[ONLINE TESTING]



**INTERNATIONAL TRACTORS LIMITED  
SONALIKA INTERNATIONAL DI - 35 RX CM PLUS TRACTOR**



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.) 466 445

**CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE**

(An ISO 9001: 2015 Certified Institute)

TRACTOR NAGAR, BUDNI (M.P.) 466 445

Website: [fmttibudni.gov.in](http://fmttibudni.gov.in)

E-mail: [fmti-mp@nic.in](mailto:fmti-mp@nic.in)

Telephone: 07564-299003

**BACKGROUND**

- i) The International Tractors Limited, **Sonalika International DI – 35 RX CM Plus** tractor had undergone “Initial Commercial Test” at this Institute vide Test Report No. T- 991/1515/2015 (released in November, 2015).
- ii) Administrative Extension of base model i.e. **Sonalika International DI – 35 RX CM Plus** tractor was conducted vide Test Report No. T- 1399/1926/2020, (March, 2020).
- iii) First Batch Test of base model i.e. **Sonalika International DI – 35 RX CM Plus** tractor was conducted vide Test Report No. T-1623/2154/2022 (released in February, 2022).
- iv) On 24.03.2022, when the tractor viz. **Sonalika International DI – 35 RX CM Plus** tractor submitted for first batch test, was still in the Institute’s campus only, the applicant came to apply for issuing Technical Extension, declaring the “Power Steering (Hydrostatic Steering)” as an optional feature. The applicant was allowed for necessary modification on the same tractor lying in the campus of Institute. **There is, therefore, no need to conduct those tests as are required for conformity of sample as being the same as tested earlier.** However, for complete information on performance of this tractor, Test Report No. T-1623/2154/2022 is a necessary adjunct to this report.
- v) After examination of the documents, only following tests were required to be conducted as laid down in IS: 12207-2019.
1. Specification checking of optional feature i.e. Hydrostatic Steering
  2. Turning ability test and
  3. Steering effort test

**1. SPECIFICATION CHECKING OF HYDROSTATIC STEERING  
(OPTIONAL FEATURE)**

Make of distributor	:	Danfoss
Type	:	Assisted Steering Equipment (Hydrostatic, Power steering)
Location	:	Above clutch housing
Method of operation	:	Manually, through steering control wheel
Diameter of steering control wheel, (mm)	:	380
Make & type of pump	:	Rexroth & Gear (Tandem)
Location & drive	:	On RHS of engine and driven through timing gear
Make of hydraulic cylinder	:	Not available
Number, Type of hydraulic cylinder	:	01, Double acting
Location of hydraulic cylinder	:	Behind front axle, On LHS
Lubrication capacity, (l)	:	1.25
Oil change period	:	First change after 250 hours of operation and subsequently after every 1000 hours of operation.

**2. TURNING ABILITY TEST**

Characteristics	Minimum turning diameter,(m)		Minimum clearance diameter,(m)	
	LHS	RHS	LHS	RHS
Brakes released	7.49	7.43	7.78	7.72
Brake applied	6.74	6.72	7.00	6.99

## 3. STEERING EFFORT TEST

Test Surface: Concrete

Steering Effort and Time to achieve 12 m turning radius at 10 km/h:

Tractor state	Requirement as per AIS:042 – 2004		As observed	
	Steering effort, (kg)	Time, (Second)	Steering effort, (kg)	Time, (Second)
With engine running:				
- Left Turn	Not specified	Not specified	1.8	4.30
- Right Turn	Not specified	Not specified	1.1	1.00
Simulated tractor energy source failure:				
- Left Turn	Shall not exceed 60 kg.	Shall not exceed 8 Second	12.2	1.70
- Right Turn			8.1	1.60

Remark: Observed steering effort has been found within the specified limit as per AIS: 042.



## 4. ADJUSTMENTS, DEFECTS, BREAKDOWNS AND REPAIRS

S. No.	Adjustment/Defect/Breakdown and Repairs	Category of Breakdown	Tractor run hours
-- None--			

## 5. RESULTS

On the basis of test conducted the performance of hydrostatic steering meets the requirement of Rule 98B of CMV Rules, 1989.

TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report is compiled by: Mrs. Poonam Khurasia, Senior Technical Assistant.

## 6. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant comments
6.1	--	There is no comments/remarks from our side.



**Fig 1: STANDARD FITMENT: MECHANICAL STEERING**



**Fig 2: OPTIONAL FITMENT: HYDROSTATIC POWER STEERING**

**ANNEXURE- II****TRACTOR RUN HOURS DURING TEST**

<b>A.</b>	<b>LABORATORY AND TRACK TESTS:</b>	<b>HOURS</b>
1.	Turning ability and steering effort	0.75
<b>B.</b>	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	0.30
	<b>TOTAL:</b>	<b>1.05</b>