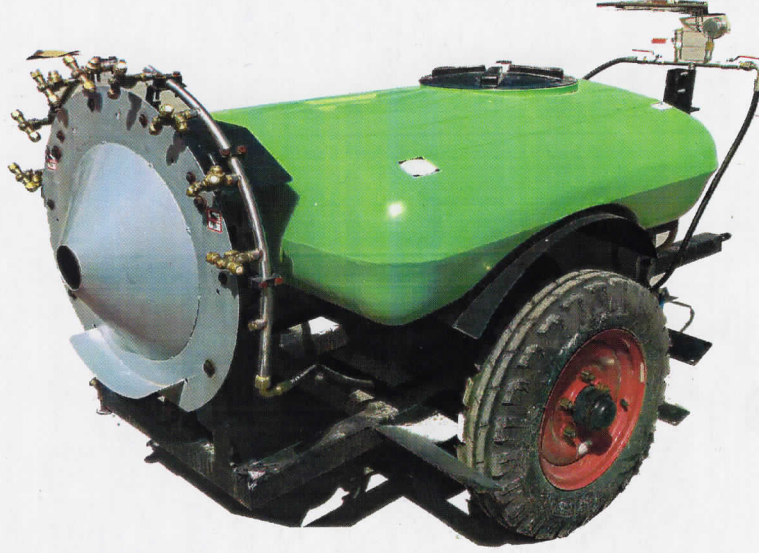


THIS TEST REPORT VALID UP TO : 30th APRIL, 2026



**TRACTOR OPERATED BOOM SPRAYER
GODAVARI GAP AB-600**



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

Northern Region Farm Machinery Training and Testing Institute

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[ISO 9001:2015 CERTIFIED]

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xxii)	Roller pump rotor	Nickel resistant cast iron	N.A.	
xxiii)	Piston pump crank shaft	Carbon steel	Carbon steel	Conforms
xxiv)	Pump inlet port end fitting	Brass	Cast Iron	Does not conform
xxv)	Piston rod guide	Brass, Aluminum alloy, Gunmetal, Nylon	N.A.	---
xxvi)	Connecting rod	Carbon steel	Aluminum alloy	Does not conform
xxvii)	Gudgeon pin	Carbon steel	Carbon steel	Conforms
xxviii)	Big end bearing	Steel coated with tin base white metal	Steel coated with tin base white metal	Conforms
xxix)	Small end bush	Gunmetal	Gun metal	Conforms
xxx)	The material used for different components shall be declared by the manufacturer all the components mentioned in the table-I may not be present in a particular sprayer.		Not declared	Does not conform

3. TEST FOR DISCHARGE RATE OF PUMP [vide Clause 8.3 of IS- 11313: 2007]

1. Date of test : 22.01.2019
2. Atmospheric conditions :
 - a) Temperature : 21 °C
 - b) Relative humidity : 56 %
 - c) Pressure : 98.7 kPa
3. Data recorded

Speed of Pump (rpm)	Pressure (kg/cm ²)	Test No.	Delivery from the discharge line (ml/min)	Avg. over flow (ml/min)	Average discharge from the discharge line (ml/min)	Discharge rate of pump (ml/min)	Hydraulic Power (kW)
353	5	1	18600	NIL	18615	18615	0.26
		2	18640				
		3	18620				
		4	18600				
350	10	1	18420	NIL	18460	18460	0.40
		2	18530				
		3	18470				
		4	18420				

348	15	1	18200	NIL	18182.5	18182.5	0.51
		2	18180				
		3	18250				
		4	18100				
347	20	1	18000	NIL	17937.5	17937.5	0.69
		2	17850				
		3	17900				
		4	18000				

Minimum discharge rate = 17937.5 ml/min at 20 kg/cm²

Maximum discharge rate = 18615 ml/min at 5 kg/cm²

Discharge at rated pressure = 18460.0 ml/min at 10 kg/cm²

4 TEST FOR VOLUMETRIC EFFICIENCY OF PUMP (Vide clause 8.4 of IS-11313 : 2007)

Date of test : 26.04.2019
 Rated pressure, kg/cm² : 10
 Rated rpm of pump : 350
 Theoretical volume, ml : 19299
 Actual volume at rated rpm &
 rated pressure, ml : 18460
 Volumetric efficiency % : 96

5. POWER REQUIREMENT (Vide Clause 6.3 of IS – 11313 : 2007)

The pump power requirement of the sprayer has been marked as 5 hp (3.68 kW) .
 The test for power required for operating the sprayer was conducted as per clause 8.5 of IS: 11313-2007 and data recorded is reported herewith

Test No.	Pressure (kg/cm ²)	Dynamometer reading		Pump speed (rpm)	Required power (kW)	Discharge (liter/min)
		Speed (rpm)	Torque (Nm)			
1	5	252	11.33	353	0.26	18.62
2	10	251	15.0	350	0.40	18.46
3	15	250	19.33	348	0.51	18.18
4	20	248	26.50	347	0.69	17.94

Remark: The power requirement was observed from 0.26 kW to 0.69 kW throughout the range of pressure against the declaration of 3.68 kW.

At rated speed and pressure of pump the power requirement is observed as 0.40 kW.

6. PRESSURE ADJUSTMENT TEST (Vide Clause 8.7.1 of IS: 11313-2007)

- Date of test : 22.01.2019
- Atmospheric conditions
 - Temperature : 21° C

14. CONFORMITY TO INDIAN STANDARDS

i)	IS:11313-2007 (Reaffirmed 2012)-Hydraulic power sprayer-specification	:	Does not conform in toto
ii)	Spray nozzle and spray gun as per IS:3652-1995 (Reaffirmed 2011)	:	Does not conform in toto
iii)	Hose and hose connection as per IS:10134-1994	:	Conforms
iv)	IS: 2643-2005-Pipe threads where pressure-tight joint are not made on the threads-dimensions, tolerance and designation.	:	Conforms
v)	Three point linkage hitch as per IS: 4468 (Part: I/ Part II): 1997 (Reaffirmed 2012)	:	Not applicable
vi)	Dimensions of PIC and PIC yoke as per IS: 4931:1995 (Reaffirmed 2009)	:	Does not conform in toto

15. COMMENTS AND RECOMMENDATIONS

- 15.1 The drain plug is not provided in chemical tank. It **MUST** be provided.
- 15.2 The power input connection dimensions does not meet the requirement of Indian Standard. It **MUST** be improved.
- 15.3 Pump, year of manufacture and serial No is not specified. It should be specified.
- 15.4 The material of pump cylinder, pump inlet port end fitting and connecting rod does not meet the requirement of Indian Standard. It **MUST** be looked into.
- 15.5 Material used for different component is not declared. It should be declared.
- 15.6 The discharge rate for nozzle (- side) at a pressure of 300±30 kPa does not conform to the requirement of IS:3652-1995. It **MUST** be looked into.
- 15.7 The spray angle for hollow cone spray pattern of nozzle at a pressure of 300 kPa does not conform to the requirement of IS:3652-1995. It **MUST** be looked into for further improvement.
- 15.8 Necessary tools are not provided with the sprayer. It **MUST** be provided.
- 15.9 The pressure gauge with full scale reading 100 bar is provided, thus it does not conform to requirement of IS : 11313-2007. It **MUST** be looked into.
- 15.10 Though a pressure regulator provided but that was not working in condition therefore its conformity to IS: 11317-2007 could not be ascertained. It **MUST** be looked into for corrective action.

- 15.11 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard **MUST** be provided.
- 15.12 Provision against overload on P.T.O. drive shaft is not provided, It **MUST** be looked into.
- 15.13 Safety guard on P.T.O. drive shaft is not provided. It **MUST** be looked into.
- 15.14 A suitable labeling plate needs to be provided with, inter alia, following information:-
- Manufacturer's name
 - Make
 - Model
 - Month & year of manufacture
 - Rated speed
 - Rated pressure
 - Discharge rate
 - Recommended tractor horse power
- 15.15 Safety provision/safety wear.
- i) The safety instructions before /during and after spraying operation **MUST** be provided on sprayer.

16. TECHNICAL LITERATURE

No literature was supplied with the sprayer. The following literature **MUST** be provided with the sprayer.

- Operator's manual containing all the information including safety instructions before, during and spraying operation.
- Parts catalogue of sprayer.

TESTING AUTHORITY

R. K. NEMA SENIOR AGRICULTURAL ENGINEER	<i>Re</i>
P. K. PANDEY DIRECTOR	<i>Y3n-mrgh</i>

17. APPLICANT'S COMMENTS

No comments received from applicant