

व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT [FIRST BATCH]

संख्या/ No.: PS-519/2904/2022

माह/Month: August, 2022

THIS TEST REPORT VALID UP TO : 31st August, 2027



**GAHIR, G-580
TRACTOR OPERATED SPRAYER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, Hisar (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

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xiv)	Spray boom	Mild steel, Galvanized, iron Braided rubber	Not applicable	--
xv)	Hose	Synthetic rubber, P.V.C	PVC	Conforms
xvi)	Tank	Galvanized iron, Brass, Fiber glass reinforced plastics.	Plastic	Conforms
xvii)	Pipe for agitator	Galvanized iron, Brass, PVC	PVC	Conforms
xviii)	Piston (bucket) screw	Brass, stainless steel	Not applicable	--
xix)	Crank case	Aluminum alloy	Aluminum alloy	Conforms
xx)	Roller pump body	Nickel resistant cast iron	Not applicable	---
xxi)	Roller pump and plate	Nickel resistant cast iron	Not applicable	---
xxii)	Roller pump rotor	Nickel resistant cast iron	Not applicable	---
xxiii)	Piston pump crank shaft	Carbon steel	Carbon steel	Conforms
xxiv)	Pump inlet port end fitting	Brass	Brass	Conforms
xxv)	Piston rod guide	Brass, Aluminum alloy, Gunmetal, Nylon	Not applicable	---
xxvi)	Connecting rod	Carbon steel	Carbon Steel	Conforms
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	Gunmetal	Conforms
xxx)	The material used for different components shall be declared by the manufacturer all the components mentioned in the table-1 may not be present in a particular sprayer.		Not declared by the manufacturer	--

4. RUNNING-IN

The sprayer run-in for 1.0 hour as recommended by the applicant before starting of test.

5. TEST FOR DISCHARGE RATE OF PUMP

[vide Clause 8.3 of IS: 11313–2007]

1. Date of test : 27.07.2022
2. Atmospheric conditions
 - a) Temperature : 27.0 °C
 - b) Relative humidity : 74.1 %
 - c) Pressure : 97.8 kPa

3. Data recorded

Avg. Speed of Pump (rpm)	Working pressure (kg/cm ²)	Test No.	Delivery from the discharge line (ml/min)	Overflow (ml/min)	Avg. Overflow (ml/min)	Average discharge from the discharge line (ml/min)	Discharge rate of pump (ml/min)	Hydraulic power (kW)
893	10.0	1	10000	30700	30697.5	10012.5	40710.0	0.7
		2	9950	30700				
		3	10100	30640				
		4	10000	30750				
886	17.0	1	13300	28800	28725.0	13370.0	42095.0	1.2
		2	13400	28600				
		3	13380	28800				
		4	13400	28700				
884	24.0	1	15700	26400	26475.0	15710.0	42185.0	1.6
		2	15640	26600				
		3	15800	26400				
		4	15700	26500				
882	30.0	1	17800	24500	24475.0	17812.5	42287.5	2.1
		2	17650	24300				
		3	17800	24650				
		4	18000	24450				
879	35.0	1	23450	22350	22362.0	23375.0	45737.5	2.6
		2	23250	22500				
		3	23500	22400				
		4	23300	22200				

Minimum discharge rate = 40710.0 ml/min at 10 kg/cm²

Maximum discharge rate = 45737.5 ml/min at 35 kg/cm²

Discharge at Rated pressure = 45737.5 ml/min at 35 kg/cm²

6. TEST FOR VOLUMETRIC EFFICIENCY OF PUMP

[Vide clause 8.4 of IS: 11313 -2007]

Date of test	:	22.07.2022
Rated pressure, kg/cm ²	:	35
Rated rpm of pump	:	900
Theoretical volume, ml	:	52.99
Actual volume at rated rpm & rated pressure, ml	:	50.82
Volumetric efficiency, %	:	95.90 %

- 17.4 Safety guard on P.T.O. drive shaft and belt pulley is not provided. It **MUST** be looked into.
- 17.5 The strainer in nozzle is not provided. It may be provided.
- 17.6 There is no provision against overload on P.T.O drive shaft. It **MUST** be looked into.
- 17.7 Necessary tools are not provided. It **MUST** be provided.
- 17.8 The tank indicating levels & level graduations are not provided. It **MUST** be provided.
- 17.9 The strainer at filling hole is not provided. It **MUST** be provided.
- 17.10 The batch or code number and designation of nozzle is not marked. It **MUST** be looked into.
- 17.11 The batch or code number and designation of gun is not marked. It **MUST** be looked into.
- 17.12 The suitable drain plug at the bottom of the tank for cleaning is not provided. It **MUST** be looked be into.
- 17.13 The safety wear is not provided. It **MUST** be provided.
- 17.14 **Safety provision/safety wear**
Safety instructions regarding handling poisonous agro chemical before, during and after spraying operations should be provided on sprayer

18. TECHNICAL LITERATURE

The following literatures are provided with sprayer for guidance to the user.

- i) Operator manual
- ii) Service manual
- iii) Parts catalogue

However, the manuals of sprayer should be updated as per IS:8132-1999



19. COMPARISON WITH SPECIFICATION OF PREVIOUS SAMPLE (Test report No. PS- 167/1776/2015, August, 2015) of NRFMT&TI, Hisar and PRESENT SAMPLE

Sr. No.	Parameters		Previous Sample (As per test report No. PS-167/1776/2015, August, 2015)	Present Sample
1	2		3	4
19.1	Specifications			
19.1.1	General			
	Type	:	Tractor operated power sprayer	Tractor operated sprayer mounted type.
	Make (apa)	:	Gahir	Gahir
	Model (apa)	:	G-580	G-580
	Brand	:	Not Specified	Gahir
	Serial No.	:	Not Specified	GASP-E-2K22-2450
	Output capacity, l/min	:	60	60
	Name of manufacturer (apa)	:	M/s. Gahir Agro Industries Ltd. Sangrur, Sunam Road, Near Bus Stop, Kular Khurd, Distt. Sangrur-148001 (Punjab)	Gahir Agro Industries Limited Sangrur Sunam Road, Near Bus Stop, Distt. Sangrur-148001 (Punjab)
	Year of manufacture	:	1996	May, 2022
	Recommended tractor power, kW (apa)	:	Not Specified	22

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Sr. No.	Parameters	Previous Sample (As per test report No. PS-167/1776/2015, August, 2015)	Present Sample
1	2	3	4
19.2.2	Present Sample		
	Type of machine	:	Tractor operated power sprayer
	Make	:	Gahir
	Model	:	G-580
	Brand	:	Gahir
	Sr. No.	:	GASP-E-2K22-2450
	Name of manufacturer	:	Mfg. by: Gahir Agro Industries Ltd.
	Month & Year of manufacturer	:	May, 2022
	Capacity	:	500 Ltr.

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 29.08.2022

The test report is compiled by Abhishek Chourey, MTS (Technical)