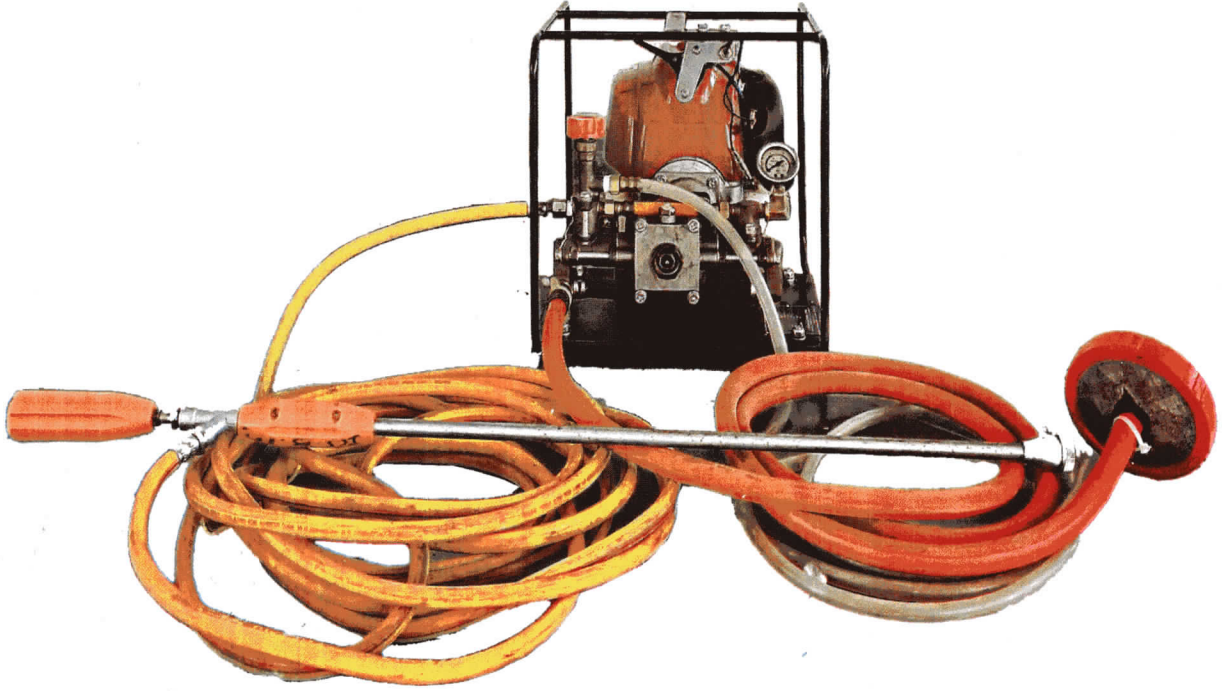


ब्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: PS-433/2504/2020
माह/Month: September, 2020

THIS TEST REPORT VALID UP TO : 30th September, 2027



ICS-PS-444 ENGINE OPERATED PORTABLE SPRAYER



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

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

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

[ISO 9001:2015 CERTIFIED]

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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	N.A	--
xxvii)	Gudgeon pin	Carbon steel	N.A	--
xxviii)	Big end bearing	Steel coated with tin base white metal	Not applicable	--
xxix)	Small end bush	Gunmetal	Not applicable	--
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.		Declared by applicant	Conforms

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

1. Date of test : 04.02.2020
2. Atmospheric conditions :
 - a) Temperature : 22.3° C
 - b) Relative humidity : 32.0 %
 - c) Pressure : 99.1 kPa

3. Data recorded

Speed of engine (rpm)	Working pressure (kg/cm ²)	Test No.	Delivery from the discharge line (ml/min)	Overflow (ml/min)	Average delivery from the discharge line (ml/min)	Discharge rate of pump (ml/min)	Hydraulic Power (kW)
7700	4	1	7360	NIL	7330.0	7330.0	0.05
		2	7250				
		3	7370				
		4	7340				
7400	5	1	7100	NIL	7005.0	7005.0	0.06
		2	6940				
		3	7000				
		4	6980				
7333	6	1	6900	NIL	6847.5	6847.5	0.07
		2	6800				
		3	6820				
		4	6870				
7270	7	1	6780	NIL	6727.5	6727.5	0.08
		2	6760				
		3	6680				
		4	6690				



Minimum discharge rate	=	6727.5 ml/min at 7 kg/cm ²
Maximum discharge rate	=	7330.0 ml/min at 4 kg/cm ²
Discharge at rated pressure	=	7005.0.5 ml/min at 5 kg/cm ²

4. TEST FOR VOLUMETRIC EFFICIENCY OF PUMP [vide clause 8.4 of IS: 11313-2007]

Date	:	20.08.2020
Rated pressure, kg/cm ²	:	05
Engine speed corresponding to rated pressure (rpm)	:	7369
Theoretical cubic capacity of pump, ml	:	6826.32
Actual volume at rated pressure, ml	:	6505.0
Volumetric efficiency, %	:	95.29

5. POWER REQUIREMENT

During the pump operation from minimum to maximum pressure range, the max. hydraulic power was observed as 0.08 kW against the declared net power output of engine as 0.72 kW.

6. ENGINE PERFORMANCE TEST

The Pursuance of Ministry's Order No. 7-23/2011-M&T (I&P) dated 20.04.2011 the engine performance test has not been conducted and the specifications/performance as specified by the applicant/ declared in the manual have been endorsed.

S.No.	Parameter		Declaration
i	Engine Type	:	Single Cylinder, 4 stroke ,Air cooled, spark ignition, petrol engine
ii	Bore,(mm)	:	35
iii	Stroke (mm)	:	26
iv	Displacement,(cc)	:	25
v	Net power out put	:	0.72 kW@ 7000 rpm
vi	Max Torque	:	1.0 Nm @ 5000 rpm
vii	Compression ratio	:	8.2:1

7. PRESSURE ADJUSTMENT TEST (Vide clause 8.7.1 of IS: 11313-2007)

1. Date of test : 04.02.2020
2. Atmospheric conditions :
 - a. Temperature : 22.3 °C
 - b. Relative humidity : 32.0 %
 - c. Pressure : 99.1 kPa
3. Data recorded



17. COMMENTS AND RECOMMENDATIONS

- 17.1 The engaged threaded length of outlet port does not meet the requirement of relevant Indian Standard. It **MUST** be looked into.
- 17.2 The strainer in nozzle is not provided. It may be considered for providing.
- 17.3 The necessary tools are not provided. It **MUST** be provided.
- 17.4 The suction strainer aperture size does not meet the requirement of relevant code/standard. It **MUST** be looked into.
- 17.5 The discharge rate for fine cone spray pattern of gun at a pressure of 600 kPa±60 does not conform to the requirement of IS:3652-1995. It **MUST** be looked into.
- 17.6 The Spray angle for fine cone spray pattern of spray gun at a pressure of 600 kPa ± 60 does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into.
- 17.7 The Batch or Code number is not Marked on Spray gun. It **MUST** be looked into.
- 17.8 The percentage variation of discharge of endurance test of gun at fine cone spray pattern and jet spray pattern from first to last collection was not within limit specified by the relevant code/standard's. It **MUST** be looked into
- 17.9 The discharge rate for cone spray pattern of nozzle at a pressure of 300±30 kPa does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into.
- 17.10 The Spray angle for fine cone spray pattern of Spray Nozzle at a pressure of 300 kPa ± 30 does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into.
- 17.11 Through a pressure regulator provided but that was not in working condition therefore its conformity to IS: 11313-2007 could not be ascertained. It **MUST** be looked into for corrective action.
- 17.12 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.
- 17.13 At rate pressure of 5 kg / cm² the pump discharge was observed as 7005.0 ml/min against the minimum requirement of 8000 ml/min. Thus **MUST** be examined.



17.14 Safety provision/safety wear

- i) Safety instructions regarding handling poisonous agro-chemical before, during and after spraying operation should be provided on sprayer.


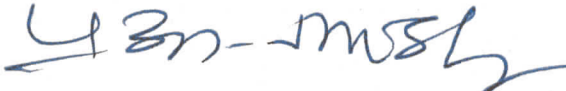
18. TECHNICAL LITERATURE

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

- i) Operator & service manual part list of sprayer

However operator & service manual of sprayer should be updated as per IS : 8132-1999.

TESTING AUTHORITY

MAAN SINGH SENIOR TECHNICAL ASSISTANT	
P. K. PANDEY DIRECTOR	

19. APPLICANT'S COMMENTS

Para No	Our reference	Applicants comment's
19.1	17.1 to 17.14	We inform to take care the corrective actions, and in future supply, above points will be considered before dispatch of material.

