



THIS TEST REPORT IS VALID UPTO 31/01/2027



CHAMP POWER WEEDER PTG300



सत्यमेव जयते

भारत सरकार
GOVT OF INDIA

कृषि एवं किसान कल्याण मन्त्रालय

MINISTRY OF AGRICULTURE & FARMERS WELFARE

कृषि, सहकारिता एवं किसान कल्याण विभाग

DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

विश्वनाथचारिआलि, जिला-विश्वनाथ(असम)

BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176

[AN ISO 9001:2015 CERTIFIED INSTITUTION]

Machine 48/412	CHAMP POWER WEEDER Model: PTG300	COMMERCIAL (ICT)
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1. SCOPE OF TEST

The scope of test was limited to check and assess the following:

- 1.1 Specification and other data furnished by the applicant.
- 1.2 Engine performance test
- 1.3 Vibration Measurement
- 1.4 Noise level measurement
- 1.5 Hardness & chemical composition
- 1.6 Field Performance test
- 1.7 Wear analysis of rotor blades
- 1.8 Ease of operation and adjustments
- 1.9 Defects, breakdowns and repairs



2. METHOD OF SELECTION

The test sample was selected by the testing authority through random selection. The following test sample were presented by the applicant during the random selection at Applicant site.

Sr. No.	Serial No. of test sample	Remarks
1	32110003	Out of 10 sample Sr. No. 10 sample has been randomly selected
2	32110004	
3	32110005	
4	32110006	
5	32110007	
6	32110008	
7	32110009	
8	32110010	
9	32110011	
10	32110012	

3. TEST CODE/TEST PROCEDURE

There is no Indian standard/test code available for testing of power weeder as such. The guidelines, however, have been taken from the following:

- | | |
|-------------------------------------|---|
| IS 9935 : 2002
(Reaffirmed 2012) | : Power Tiller - Test code |
| IS 9980 : 1999
(Reaffirmed 2004) | : Guidelines for field performance and haulage tests of power tillers |
| IS: 7347-1974
(Reaffirmed 2006) | : Specification for Performance of Small Size Spark Ignition Engines. |
| IS 1976 : 1976
(Reaffirmed 2009) | : Specification for Rotary paddy weeder, manually operated |
| IS 6690 : 1981
(Reaffirmed 2012) | : Specification for Blades for Rotavator for Power Tillers |

4. SPECIFICATIONS

4.1 General:

- | | |
|----------------------------------|---|
| Make | : CHAMP |
| Model | : PTG300 |
| Name and address of manufacturer | : M/s Champ Energy Ventures Pvt. Ltd,
Plot No - 7, Gat No. - 399/1/2/3/B Village
Bhare, Tehsil Mulshi, Distt. Pune Pin 412115 |

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Name and address of applicant : M/s Champ Energy Ventures Pvt. Ltd,
Plot No – 7, Gat No. – 399/1/2/3/B Village
Bhare, Tehsil Mulshi, Distt. Pune Pin 412115

Name of machine : Power Weeder
Type of machine : Self-propelled, Walk behind
Working size of machine, (mm) : 450
Year of manufacture : 2021
Serial no. of machine : 3210012

4.2 Details of prime mover:

Make (apa) : CHAMP
Model : CH87/01
Type : Single cylinder, four stroke, air cooled, Inclined, Spark ignition engine.
Year of manufacture (apa) : 2021
Engine serial No. : 12108008
Recommended high idle speed, rpm : 3800 ± 100
Recommended low idle speed, rpm : 1800 ± 150
Recommended rated speed, rpm : 3600 ± 50
Rated power observed, kW : 1.14
Country of origin : INDIA

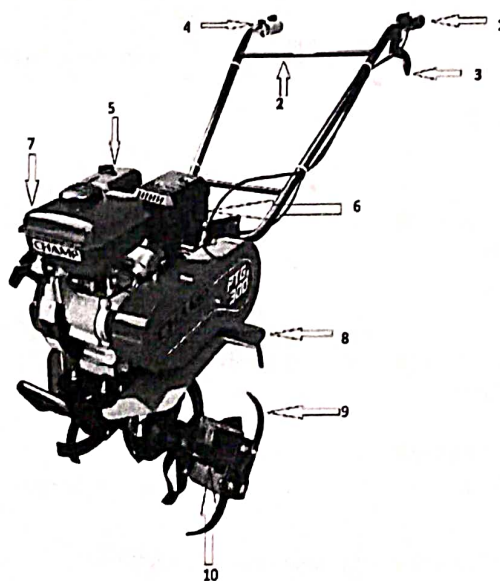


Fig.1 Champ Power Weeder

KEYS:

- | | |
|-----------------|------------------------|
| 1. Handle grip | 6. Silencer |
| 2. Handle bar | 7. Fuel tank |
| 3. Clutch lever | 8. Rotary Shield Cover |
| 4. Throttle nob | 9. Rotary blade |
| 5. Air cleaner | 10. Rotor |

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9. NOISE LEVEL MEASUREMENT

9.1 At Operator's ear level

Date of test : 29.11.2021
 Type of sound level meter : Class-I, Make: Casella, Model: CEL-633C
 Test condition : At rated engine speed in working condition

Atmospheric conditions

Temperature, °C : 25.8
 Pressure, kPa : 100.5
 Relative humidity, % : 56.5
 Background noise level, dB(A) : 42.4
 Wind velocity, m/s : 0.5 to 1.6
 Observed noise level dB (A) : 85.0



10.0 HARDNESS AND CHEMICAL COMPOSITION

10.1 Hardness of rotor blades :

The surface hardness of blade was recorded as under :

	As per IS 6690:1981 (Reaffirmed 2012)	As observed (HRC)	Remarks
At edge portion	56 ±3 HRC	81.6	Does not conform
At shank portion	37 to 45 HRC	88.9	Does not conform

10.2 Chemical composition of rotor blades :

Constituents	As per IS 6690:1981 (Reaffirmed 2012)		Composition as observed (% by weight)	Remarks
	Carbon Steel (%)	Silico Manganese Steel (%)		
Carbon (C)	0.70 -0.85	0.50-0.60	0.653	Does not conform
Silicon (Si)	0.10 -0.40	1.50-2.00	0.228	Conforms
Manganese (Mn)	0.50 -1.0	0.50-1.00	0.896	Conforms
Sulphur (S)	0.05(max)	0.05(max)	0.005	Conforms
Phosphorous (P)	0.05(max)	0.05(max)	0.022	Conforms

11. FIELD PERFORMANCE TEST

The field tests were conducted for 25.15 hours of field operation for testing the said Power Weeder. The field tests were conducted at rated engine rpm of 3600. The detailed test results are represented in the Annexure and summarized in the ensuing table:

Sl .No.	Parameters	Observations
1	Type of soil	: Medium
2	Soil moisture (%)	: 12.0 to 17.0
3	Bulk density of soil (g/cc)	: 1.45 to 1.49
4	Forward Speed of operation (kmph)	: 1.69 to 1.90
5	Depth of cut (cm)	: 4.6 to 5.33
6	Width of cut (m)	: 0.45
7	Area covered (ha/h)	: 0.0609 to 0.0663
8	Time required for one ha (h)	: 15.08 to 16.42
9	Field efficiency (%)	: 72.98 to 81.0
10	Weeding efficiency (%)	: 80.94 to 83.63
11	Fuel consumption	
	l/h	: 0.533 to 0.565
	l/ha	: 8.44 to 9.05

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14.3 Transmission gears:

All the Gears of the transmission system were found in normal condition.

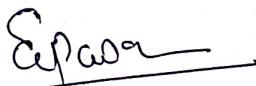
14.4 Rotary drive unit:

The rotary drive unit was dismantled and all the components were found in normal condition.

15. COMMENTS & RECOMMENDATIONS

- 15.1** Specific fuel consumption of engine as observed during test 585.77 g/kWh against 450 g/kWh of that declared by the applicant/manufacture. This does not fulfill the requirement of IS 7347-1974 and should be looked into for corrective action.
- 15.2** Rated power of the engine has been observed as 1.14 kW as against declaration of 1.30 kW. This may be looked into for corrective action.
- 15.3** The rated speed was not found stable at full load during engine rating test. On request of the applicant, carburetor was changed during engine testing. This may be looked into for corrective action.
- 15.4** The amplitude of mechanical vibration marked as (*) is on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affect the useful life of the component in view of above this deserves to be given top priority for corrective action
- 15.5** The hardness and chemical composition of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.
- 15.6** Power (hp) has been mentioned as 1.8 on labeling plate of the machine. However, during engine rating tests the power (hp) was observed 1.55. This may be looked into for corrective action.
- 15.7** Safety wears such as goggles, mask, hand gloves etc. may be provided
- 15.8 Technical literature:**
Operator's manual, service manual and parts catalogue of the machine was supplied with the test sample. It must be provided in Hindi & other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the sake of user & technical personnel

TESTING AUTHORITY



(S.G.PAWAR)
AGRICULTURAL ENGINEER



(J.P. MANDAL)
SENIOR AGRICULTURAL ENGINEER



(K.K. NAGLE)
DIRECTOR