

TRAINING ON ANTAM STANDARD CODE For TESTING OF KNAPSACK MISTERS CUM DUSTERS

PART - 5 : CODES & SPECIFICATIONS

16 - 28 October 2016, Nanjing China

**2nd Training of Trainers on ANTAM Codes
Organized by ANTAM and CAMTC**

B – CODES & SPECIFICATIONS

BY

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CODES

1. Specifications

- The information given by the manufacturer/applicant in the specification sheet as per Annex B-1 shall be verified by the testing authority and any deviation may be reported.
- Details of the components and assemblies which do not conform to the standards shall also be reported.
- The material of construction should be verified

ANNEX B-1

1.0	GENERAL	PLEASE INDICATE
1.1	Name & address of manufacturer (If more than one give details of manufactures. Separate sheets may be used)	
1.2	Name and address of the applicant for test	
1.3	Make/Type/Model	
1.4	Serial number	
1.5	Year of manufacture	
2.0	ENGINE	
2.1	Make/Type/Model/Country	
2.2	Serial number	
2.3	<p>Engine (manufacturer's recommended settings)</p> <p><i>No test necessary if a certified test report is provided by the manufacturer (according to either one of the following standard: IS 7374-1974, JB/T 5135.1 or ISO 8178.4-2007)</i></p> <p><i>If no engine test certification provided the equipment might be rejected</i></p> <ul style="list-style-type: none"> - Rated power, kW - Maximum torque, Nm - Rated speed at no load, rpm - Speed at max. torque, rpm - Specific fuels consumption, g/ kWhr - Specific oil consumption, g/ kWhr (where relevant) 	

2.4	Type of fuel used (octane number)	
2.5	Capacity of fuel tank (litre)	
2.6	Presence of strainer at engine tank inlet, yes/no	
2.7	Type of fuel filter	
2.8	Starting system: - Type - Aids for cold starting, if any - Any other device provided for easy starting	
2.9	Noise level at maximum speed, dB(A)	
3.0	FRAME	
	Material of Construction	
	Size (Width x height x length)	
4.0	TANK	
	Shape (Trapezoidal/Cylindrical/ Any other)	
	Size (In case of Trapezoidal : Width x height x depth, In case of cylindrical: Diameter x length), mm	
	Capacity, litre	
	Material of construction	
	Size of Liquid filling hole, mm	
	Strainer or filter Mesh (< 2 mm)	
	Marking on the tank, if any	
5.0	BACK REST	
	Size (Width x height x thickness)	
	Material	

6.0	STRAP	
	Material of strap	
	Material of strap buckle	
	Width and thickness of strap	
	Minimum and maximum strap length can be used	
7.0	MISTING DUCT	
	Type of misting duct	
	Misting duct internal diameter	
	Misting duct discharge at recommended pressure, ml/min	
	Misting range (m)	
8.0	BLOWER	
	Fan type : Fully enclosed / partially enclosed	
	Fan blade type : Forward bent / radial / backward bent	
9.0	DUSTING:	
	Dusting width, m	
	Dusting discharge rate (horizontal), kg/min	
10.0	TOTAL MASS (without liquid/dust), kg	
11.0	DETAILS OF AGITATING DEVICE provided (if any)	
12.0	LIST OF STANDARD ACCESSORIES/PARTS provided with equipment (provide as annex)	
13.0	PUBLICATIONS	
	Operator's manual	
	• Service Manual	
	• Parts catalogue	
	• Safety Precautions	

2. Materials

*Refers to Annex B-2 of
ANTAM test code*

	Component	Material	Please Indicate
	Tank	Fibre glass reinforced plastics Plastics HDPE	
	Lid or cap	Fibre glass reinforced plastics Plastics HDPE	
	Frame	Mild steel Engineering plastics	
	Impeller	Mild steel Galvanized plain steel Aluminium alloy Fibre glass reinforced plastics Plastics	
	Casing	Mild steel Galvanized plain steel Aluminium alloy Fibre glass reinforced plastics Plastics	
	Air bent outlet	Galvanized plain steel Plastics	
	Air hose	Rubber, fabric braided Rubber, synthetic Plastics	
	Strap	Leather, vegetable tanned Woven web cotton Yarn, synthetic	
	Strap buckle	Mild steel Galvanized plain steel Aluminium Engineering Plastic	
	Cushion	Foam rubber Foam plastics	
	Gasket	Rubber, synthetic PVC Leather Fibre	

2. Materials

*Refers to Annex B-2 of
ANTAM test code*

	Air pressure regulating device	Brass Plastics	
	Air pressure pipe	Plastics	
	Liquid or dust regulating device	Brass Plastics	
	Hose clip	Mild steel Galvanized plain steel	
	Air duct (misting or dusting)	Stainless steel Plastic	
	Valve assembly	Brass Stainless steel Plastics	
	Pipe for agitator	Galvanized iron Brass Polyvinyl chloride (PVC)	

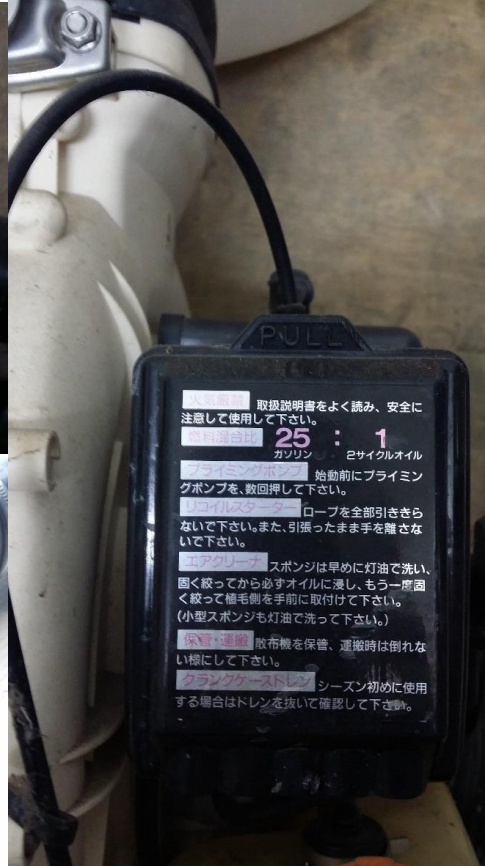
3. Operator and Service Manual

	Yes	No
Operator manual		
Service manual		
Main technical details of the engine		
Engine rated speed		
Tank capacity		
Misting and dusting rate adjustment		
Misting and dusting range		
Starting and stopping instructions		
Safety during operation		
Common defaults and repairs		
Safe chemical handling		
Cleaning		
Maintenance		
Storage		
Forbidden chemical/liquids		
Manufacturer/supplier contact details		
List of regular and optional parts		
Method to convert mister into duster		
Remarks :		

6. Marking and Packing

Marking	Comment	Present
Manufacturer's name or registered trade-mark		
Tank capacity		
Production code and serial number		
Engine certification label		
Type of fuel used		
Maximum blower speed (RPM)		
Safety labels		
Control device labels <i>(In the control device or nearby location, there shall have clear labels, its contents should reflect the basic characteristics of the control device).</i>		
Any other ANTAM approved Asia Pacific member countries national certification label <i>(The use of the certification label is governed by the approval of the ANTAM secretariat).</i>		
Packing <i>(Each unit shall be first packed in a polyethylene bag and then in a wooden case or carton package of sufficient strength to avoid damage in transit.</i> <i>Spare Parts - Spare parts separately packed for each mister-cum duster according to the number required shall be provided).</i>		

6. Marking and Packing



6. Marking and Packing

Packaging solutions



Inner packing:
moistureproof



5 layers EBC Pit paper
strengthen packing



Shockproof foam



packing belt to
strengthen it



WORKMANSHIP AND FINISHING

All the components of the unit shall be free from burrs, pits and other visual defects which may be detrimental for their use.

The exposed metallic parts shall have a protective coating to prevent surface deterioration. The paint quality shall comply with the following standard JB/T 5673.

Instrumentation: See Section 5, Paint layer thickness meter

Method: Randomly select 5 spots and measure, compute the average of the 5 spots

WORKMANSHIP AND FINISHING

Criteria	Yes	No
The paint coating surface shall be flat, smooth, uniform, without pinhole, pitting, there shall not have any painting defects.		
The total thickness of the paint coating shall not be less than 40 μ m		
Remarks :		



CAMTC

仪器设备标识牌

编号: 3021600-3021800
名称: 手持式涂层测厚仪
规格型号: LE-370J
使用部门: 检验三室
管理员: 刘群

农业部农业机械试验鉴定总站实验室
国家拖拉机质量监督检验中心(北京)
农业部农业机械质量监督检验测试中心

SPECIFICATIONS FOR PERFORMANCE

Criteria	Performance level	Method	Compliance (Yes/No)
Straps	2 straps shall be provided	Check	
	Not less than 800 mm length, 38 mm width	Measure	
	Strap cushion of min 40 mm width and 20 mm thick	Measure	
	Back rest with cushion of 200 x 200 x 20 mm	Measure	
	Cushions made of cotton, canvas, resin, or plastic coated parts	Check	
	1 adjustable single strap provided to carry the mister cum duster	Check	
	1 double shoulder strap shall be designed so that pressure is evenly distributed on both shoulders of the operator. The design of the double shoulder strap shall prevent slipping in any direction.	Check	
	All double shoulder straps shall be equipped with a quick-release mechanism positioned either at the connection between the mister cum duster and strap or between the strap and operator. Either the strap or the use of the quick-release mechanism shall ensure that the mister cum duster can be released quickly from the operator in the event of emergency. If a quick-release mechanism is provided, it shall be possible to open it under load and release the machine using only one hand.	Check	
	Each shoulder strap shall have a load bearing part of at least 200 ± 10 mm of a minimum comfort width of 50 mm. The load shall be distributed over the whole width	Measure	
	If the load bearing area area is formed by a pad, this shall not slip from its position unintentionally.	Check	

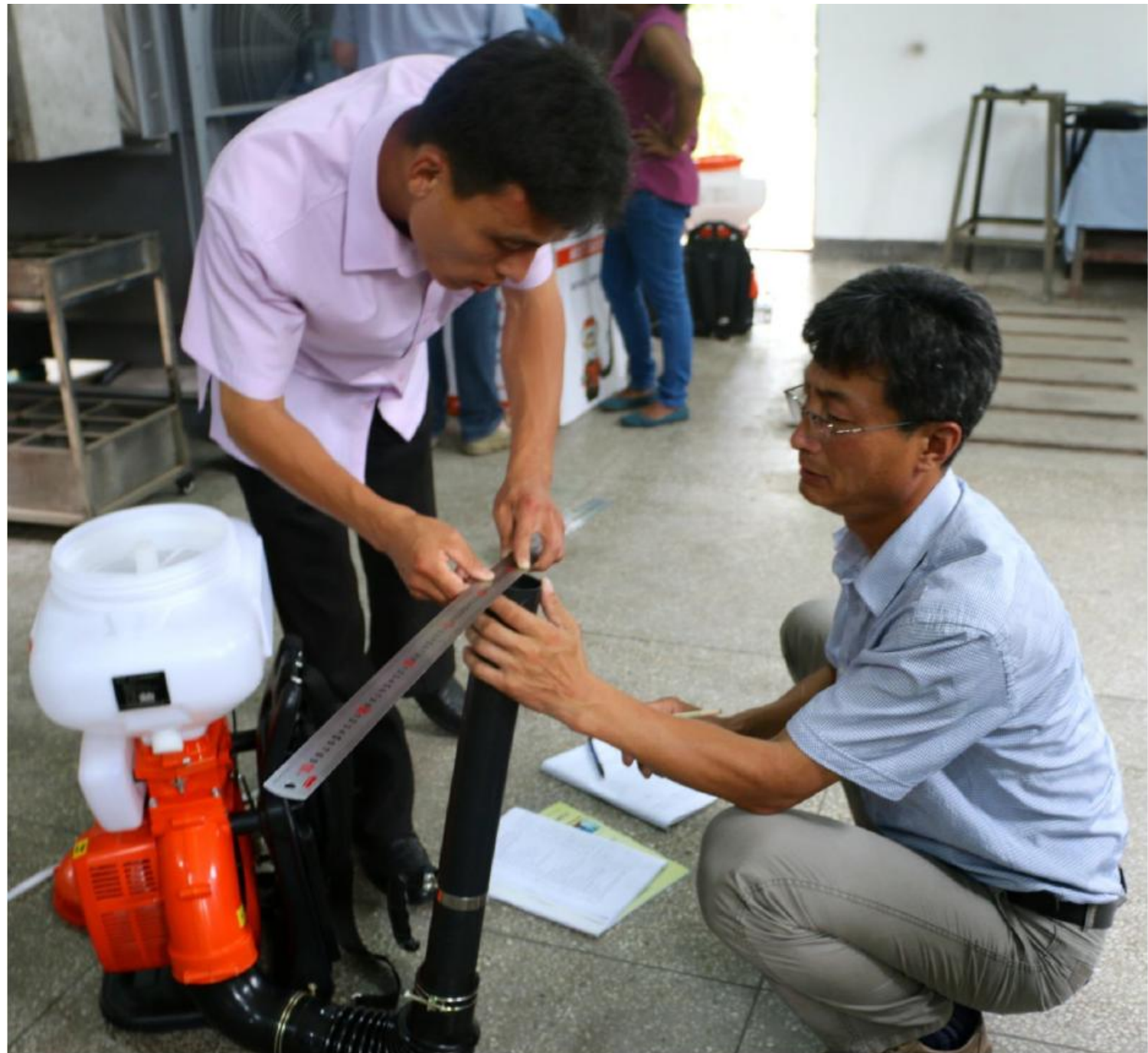
SPECIFICATIONS

1.9.2 Tank

- A tank for holding the liquid shall be provided with the provision of easy conversion into a dust tank.
- A filling hole of 90 mm minimum diameter if circular or in minor axis if oval, shall be provided on the top of the tank.
- The hole shall be covered with a cap or lid so that no leakage of the liquid or dusting powder takes place during the mounting of the mister cum duster-cum-duster and during its operation.
- The tank capacity shall be not less than 0.01 m³ (10 l).
- The tank capacity shall be declared by the manufacturer.
- The total tank capacity shall not differ by more than 5 percent of the declared value.
- When tank is filled at nominal capacity, an extravolume of 5% of the tank capacity is needed to limit the impact of foam or overspill.
- When the liquid or dusting powder is filled in tank up to its total capacity, the tank shall not show any sign of leakage and shall not buckle







1.9.2.1 A strainer

- shall be fitted at the filling hole using a mesh size in the range of 0.5 to 2mm;
- the strainer should be deep enough to allow free flow of chemicals without spilling (liquid).

1.9.2.2 When the liquid or dusting powder is filled in tank up to its total capacity, the tank, connected hoses and air pressure hose shall not show any sign of leakage and shall not buckle.

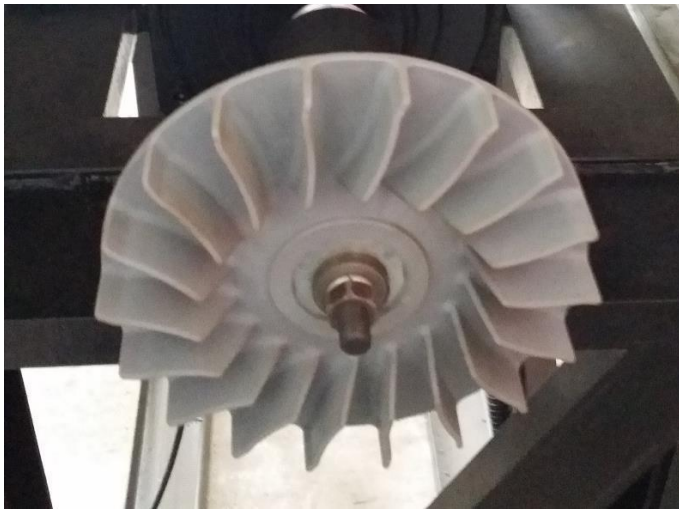


1.9.3 Impeller

- The impeller of the fan shall be dynamically balanced at its rated speed.
- The impeller shall not touch casing at any point.

1.9.4 Blower Housing

- The internal and external blower housing surface shall be smooth, without dents or depressions, cracks and defects.
- Testing is by observation and manual hand feeling method.



1.9.5 Air Bent Outlet

An air bent outlet may be provided. If provided, shall be connected with fan casing outlet, air hose and air pressure regulating device.

1.9.6 FlowRegulator

A device to regulate the flow of the liquid or dusting powder shall be provided.

1.9.7 Air Hose

An air hose of minimum 45 mm inside diameter and not less than 500 mm in length shall be provided.





1.9.8 Straps

- Two straps of not less than 800 mm length after its maximum adjustment and 38 mm width shall be provided in order to help carriage of the unit.
- Provision for adjustment of each strap shall be made. A cushion of minimum 40 mm width and 20 mm thickness with each strap at least on the portion that rests on the operator's shoulder and a backrest shall be provided at the option of the purchaser.
- The backrest may be fitted with a cushion of minimum size of 200x200x20 mm.
- The cushions, when provided, shall be covered with suitable materials, such as cotton, canvas, resin, and PVC or plastic coated fabrics.

1.9.8.1 A strap

- shall be provided to carry the mister cum duster.
- It shall be adjustable to the size of the operator so that one person shall be able to pickup, to carry and to put down the mister cum duster.



1.9.8.2 A double shoulder

- strap shall be designed so that pressure is evenly distributed on both shoulders of the operator.
- The design of the double shoulder strap shall prevent slipping in any direction.

1.9.8.3 All double shoulder straps

- shall be equipped with a quick-release mechanism positioned either at the connection between the mister cum duster and strap or between the strap and operator.
- Either the of the strap or the use of the quick-release mechanism shall ensure that the mister cum duster can be released quickly from the operator in the event of emergency.
- If a quick-release mechanism is provided, it shall be possible to open it under load and release the machine using only one hand.
- Compliance shall be checked by inspection and function test.

1.9.8.4 Each shoulder strap

- shall have a load-bearing part of a length of at least 200 mm \pm 10 mm and of a minimum comfort width 50 mm.
- The load shall be distributed over the whole width. *Compliance -checked by measurement.*

1.9.8.5 If the load-bearing

- area is formed by a pad, this shall not slip from its position unintentionally. *Compliance shall be checked by inspection and function test.*



1.9.9 Gasoline engine

- The gasoline engine used should comply with JB/T 5135.1, IS:7347-1974 or ISO 8178-4:2007. (Without governor)
- The gasoline engine should follow the starting procedures as listed in the operation manual under normal temperature conditions.
- Recoil rope starting used for starting gasoline engine should be able to start the engine at least once in three attempts within 30s.
- All engine control components shall be normal without restriction, easy to control with the maximum rated engine achieved at the highest setting.
- It shall also allow the engine shut off at the lowest level setting.
- A separate manual button/switch for stopping the engine shall be provided for hand lever operated idle speed set at the lowest level position.
- The fuel and chemical discharge controls shall be in easy access of the operator.
- The exhaust outlet of the engine shall be so positioned that the smoke does not directly affect the operator or crop, At the option of the purchaser, a guard shall be provided on or near the exhaust pipe for the protection of the operator.





1.9.10 Spare Parts –

- Spare parts separately packed for each mister-cum-duster according to the number required by the purchaser shall be provided.
- Even if no demand for spare parts has been made, a set of gaskets, one funnel with a strainer having aperture size of 300 to 425 micron, a measuring cylinder for lubricating oil and a set of necessary tools shall be provided.

1.9.11 Safety requirements

- Dangerous parts of the gasoline engine: recoil rope starter, exhaust (silencer), inlet of blower shall be fitted with protective cover.
- The rotating parts such as the entrance of fan, starting wheel, etc. shall be equipped with protective cover with proper strength.
- The muffler and other high-temperature components shall be equipped with protective device to avoid empyrosis.
- If dimensions shall be are not available because of structure, warning signs shall be set up, and note it in the manual.