



AMTEC
Agricultural Machinery Testing and Evaluation Center
1977

ACR 050:2024 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR RICE REAPER

■ Application for AMTEC Test

The test applicant shall submit AMTEC-OP-F01 (Agricultural Machinery Test Application Form) together with the following requirements:

- AMTEC-OP-F16 (Waiver for Machine Specifications)
- AMTEC-OP-F18 (Data Privacy Consent Form)

■ Technical Specifications of the Machine

The test applicant shall submit any document/s indicating the specifications of the machine upon application for testing. In case the said document/s are not available, the applicant shall fill out the Machine Specifications Sheet provided by AMTEC upon request.

- Operator's manual
- Brochure
- Machine specifications sheet (shall be filled out upon request and receipt of copy from AMTEC in case the manual or brochure is not available)

■ Preparation and Operation of the Machine

The rice reaper shall be ready for field performance testing. The officially designated representative of the test applicant shall operate, demonstrate, adjust, repair, and decide on matters related to the operation of the machine. The operator shall be skilled in operating a rice reaper.

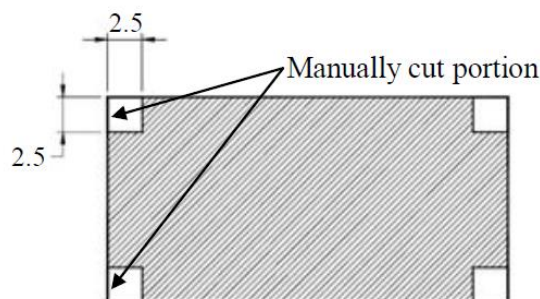
■ Running-in of the Machine

A test run shall be conducted prior the official test as to check its condition and make necessary adjustments to the machine. No other adjustments shall be permitted once the official testing commence.

■ Test Plot

The test applicant shall prepare at least three (3) test plots. Each test plot shall be:

- rectangular field with an area of at least 750 m² and minimum length of 30 m;
- completely dried; and
- prepared by manually cutting the four corners of the field on a 2.5 m x 2.5 m area shown in the Figure below.



■ Other Test Necessities

The following shall also be adequately supplied during the conduct of testing:

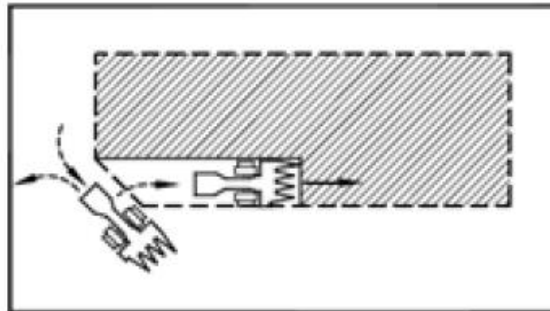
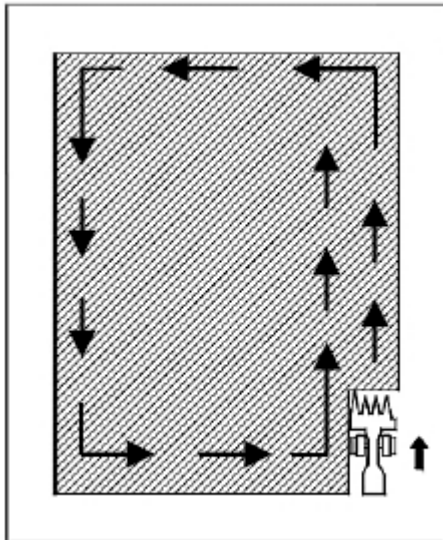
- Fuel tank filled to full capacity; or shall be filled to a certain marked level
- Sufficient extra fuel for refilling after each test trial to its full capacity or marked level
- Sufficient engine oil;
- Tools for machine repair and adjustments; and
- Sacks for rice and cut stalks

■ Recommended Field Operational Pattern

The reaper shall be tested using the circuitous operational pattern shown at the Figure below.



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■ Performance and/or Fabrication Test Requirements

AMTEC shall conduct various tests and verification on different performance parameters of the machine including the following requirements as per PNS/PAES 212:2015. The rice reaper shall be tested according to the manufacturer's recommended settings.

■ Fabrication Requirements

Item	Requirement as per PNS/PAES 212:2015
Star Wheels	<input type="checkbox"/> Shall be made of non-corrosive material that can withstand shock caused by conveyor belt lugs.
Cutting Elements	<input type="checkbox"/> Should be made of either American Iron or Steel Institute (AISI) 1080 (carbon tool steel) to AISI 1085 (carbon steel) or its equivalent. <input type="checkbox"/> Serrated portion should be case hardened at Rockwell C Scale (RC) 46 to RC 52 <input type="checkbox"/> Non-hardened portion shall have hardness within range of RC 25 to RC 27
Bolts and screws	<input type="checkbox"/> Shall conform with the requirement of PNS/PAES 311:2001 Engineering Materials -Bolts and Nuts for Agricultural Machines -Specifications and Applications and PNS/PAES 313:2001 Engineering Materials – Screws for Agricultural Machines – Specifications and Applications.
Others	<input type="checkbox"/> Steel bars and metal sheet shall be used for the manufacture of the different components of the reaper. <input type="checkbox"/> Mechanism for cutter bar height adjustment shall be provided. <input type="checkbox"/> The manufacturer shall include a set of shear pins made of aluminum material to prevent the cutting mechanism from being damaged, <input type="checkbox"/> Mechanism for easy disengagement of power transmission shall be provided. <input type="checkbox"/> Mechanism for reverse speed should be provided for easy maneuverability. <input type="checkbox"/> Emergency release lever shall be easily accessible to the operator. <input type="checkbox"/> Belt cover or guard and provisions for belt tightening and adjustments shall be provided. <input type="checkbox"/> All bearings shall be sealed type. There shall be provision for lubrication of non-sealed type bearings and journal bearing.



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■ Power Requirements	
Item	Requirement as per PNS/PAES 212:2015
Cutting mechanism	Power, minimum (of 1.2 m width of cut)
Cutter bar	<input type="checkbox"/> 3.5 hp (2.6 kW) engine power
Rotary Cutting Knife	<input type="checkbox"/> 5.0 hp (3.7 kW) engine power
■ Workmanship and Finish	
Item	Requirement as per PNS/PAES 212:2015
Reaper	<input type="checkbox"/> Shall be free from manufacturing defects that may be detrimental to its operation (e.g. cracked cutting knives). <input type="checkbox"/> Shall be free from sharp edges and surfaces to prevent injury to the operator. (Except for cutting blades)
Uncoated metallic surface	<input type="checkbox"/> Any uncoated metallic surfaces shall be free from rust and shall be painted properly.
Cutting section	<input type="checkbox"/> Shall be coated with anti-corrosive varnish.
■ Safety Requirements	
Item	Requirement as per PNS/PAES 212:2015
Safety/Precautionary markings	<input type="checkbox"/> Shall be stated in English and Filipino that can be understood by the operator. <input type="checkbox"/> Shall be printed in red color with a white background. <input type="checkbox"/> Shall have a durable bond with the base surface material. Shall be water and heat resistant under normal cleaning procedures, it shall not fade, discolor, crack, peel and shall remain legible.
■ Maintenance and Operation	
Item	Requirement as per PNS/PAES 212:2015
Standard tools	<input type="checkbox"/> Each reaper unit shall be provided with a set of manufacturer's standard tools required for maintenance.
Operator's manual	<input type="checkbox"/> Conforms with PNS/PAES 102:2000 Agricultural Machinery – Operator's Manual – Content and Presentation shall be provided.
Training	<input type="checkbox"/> A training on the proper operation of the reaper shall be provided by the supplier to the owner/operator.
■ Performance Requirements	
Item	Requirement as per PNS/PAES 212:2015
Field Efficiency, %, minimum	65
Header loss, %, maximum	0.5
Conveying loss, %, maximum	1.0
Total machine loss, %, maximum	1.5
Noise level, dB(A), maximum	92 <i>(Allowable noise level for six (6) hours of continuous exposure based on Occupational Safety Health Standards, Department of Labor and Employment, Philippines. 2013)</i>



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■ Suspension and Termination of Test

If the test material and test plot do not conform with the recommended quantity and characteristics, AMTEC shall not proceed with the test. Should the test applicant request the conduct of the test despite the non-conformity to the test requirements identified by AMTEC, the applicant shall sign the AMTEC Waiver for Nonconformity to Test Requirements.

- AMTEC-OP-F24 (Waiver for Nonconformity to Test Requirements)

If the machine stops due to major component breakdown or malfunction during the test run which is not repairable and affecting the machine's performance, the test may be suspended. If the machine cannot continue the operation, the test shall be consequently terminated.

■ Other Assistance During Test

1. For field and laboratory tests outside the AMTEC premises, the applicant shall shoulder the transportation expenses (i.e. fuel, toll fees, vehicle rental, plane fare, sea fare, etc.) of the AMTEC Staff assigned for the testing activity.
2. The applicant may assist the AMTEC Staff in looking and/or making arrangements for hotel accommodation near the test site.
3. The applicant shall provide drinking water to the AMTEC Staff during the testing activity.
4. The applicant shall provide any form of shed or sunshade (e.g., tent, umbrella, etc.) for the test equipment, samples (if applicable) and AMTEC Staff during the testing activity in the field.
5. The applicant is requested to assist the AMTEC Staff in finding any means to access a safe and convenient restroom near the test site during the testing activity.

■ Testing Fee

1. The testing fee for walk-behind type or ride-on type mechanical rice reaper is Php. 11,500.
2. To proceed through AMTEC test, the test applicant shall settle at least 50 % of the testing fee which is non-refundable but transferrable.
3. In cases of additional testing during the field, the test applicant shall immediately pass the required documents and settle at least 50% of the testing fee within 5 working days after the testing proper.
 Additional testing, number of machines: _____
4. Payment/s shall be directed to the following:
 Through UPLB Cashier's Office (8AM to 12PM): AMTEC Trust Fund Code No. 8271632-40A2040101000
 Through Landbank (8:30AM to 3PM): UPLB Trust Fund Account No. 1892100507 or UPLB FI Account No. 1892-1003-29

■ Other Reminders

1. All manufacturers, fabricators, assemblers, and importers (MFAI) shall secure a Certificate of Conformity (CC) from the Bureau of Agricultural and Fisheries Engineering (BAFE) which guarantees that their agricultural and fisheries machinery conforms with PNS/BAFS PABES or other relevant standards identified by BAFE. More information about the application for CC can be found at <https://bafe.da.gov.ph/index.php/certificate-of-conformity-of-manufacturers-fabricators-assemblers-distributors-dealers-importers-and-exporters/>.
2. All MFAI shall employ an Agricultural and Biosystems Engineer (ABE), as mandated by RA 10915 (ABE LAW), who shall facilitate all activities and concerns pertinent to AMTEC testing and BAFE requirements. Do you currently have an ABE in your roster of employees? Yes No