



AMTEC
Agricultural Machinery Testing and Evaluation Center
1977

ACR 015:2023 CHECKLIST AND REMINDERS FOR THE AMTEC TEST CONDITIONS AND REQUIREMENTS FOR FOUR-WHEEL TRACTORS

■ 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 and other relevant information of the machine upon application for testing.

- Operator's manual with complete specifications as indicated in Annex B of PNS/BAFS PABES 302:2020
- 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 officially designated representative of the test applicant and the official testing agency shall check the four-wheel tractor so as to ensure that it has been assembled in accordance with the instruction of the manufacturer.

■ Running-in of the Machine

The four-wheel tractor shall have undergone a running-in period before the start of the test. During the running-in period, various adjustments of the machine shall be made according to the recommendation of the test applicant. If this procedure is impractical due to the four-wheel tractor being an imported model, the official testing agency may itself run in the four-wheel tractor provided that the authority of the test applicant or his representative is obtained.

■ Fuel and Lubricants

Fuels and lubricants shall be selected from the range of products commercially available in the country. If the requesting party did not provide fuel and lubricating oil, the expenses shall be charged on their account.

■ Auxiliary Equipment

Accessories such as hydraulic pump or air compressor should remain connected with minimal load during all tests. If an accessory requires disconnection as per normal field practice, it may be disconnected as long as it is done without the use of tools and is within accordance of the Operator's Manual.

■ Machine Setting

The four wheel tractor shall be tested at full throttle during the PTO varying load test, hydraulic lift test, and speed test.

■ Performance Requirements

AMTEC shall conduct various tests and verification on different performance parameters of the machine including the following requirements as per PNS/BAFS PABES 301:2020:

■ Performance Requirements

Criteria	Requirement as per PNS/BAFS PABES 301:2020
Rated Maximum Power, kW	As per manufacturer's specification
Rated Engine Shaft Speed, rpm	As per manufacturer's specification
Maximum PTO Power, kW	As per manufacturer's specification
Percentage PTO Power of the Engine Power, %, minimum	85
Specific Fuel Consumption, g/kW-h, maximum	350
Lift force per drawbar power, kN/kW	



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Maximum drawbar power of 65 kW and below	0.31				
Maximum drawbar power of above 65 kW	20.15 plus 0.155 kN/kW for the succeeding drawbar power				
Main Gear	As per manufacturer's specification				
Range Gear	As per manufacturer's specification				
Shuttle Gear	As per manufacturer's specification				
Slowest Forward Speed, kph	As per manufacturer's specification				
Fastest Forward Speed, kph	As per manufacturer's specification				
Maximum Hydraulic Lift, kN	As per manufacturer's specification				
Radius of Turning Circle, mm (Without Brakes)					
Right Turn	As per manufacturer's specification				
Left Turn	As per manufacturer's specification				
Position and/or Draft Implement Controls	Shall be provided				
Three-Point Linkage					
Category based on PTO power at rated rotational frequency of engine	Category		PTO power at rated rotational frequency of engine ^o , kW		
	1N		Up to 35		
	1		Up to 48		
	2N/2		30-92		
	3N/3		60-185		
	4N/4		110-350		
^o Determined in accordance with ISO 789-1.					
Category based on dimensions of tractor linkage points	Based on Table 4 (Page 15) of PNS/BAFS PABES 301:2020				
Power-Take-Off Shaft	PTO Type	Nominal Diameter, mm	Number and Type of Splines	Nominal PTO rated rotational frequency, rpm	Recommended PTO power at rated engine speed, kW
	1	35	6 straight splines	540	<65
				1000	<110
	2	35	21 involute splines	1000	<130
	3	45	20 involute splines	1000	<300
4	57.5	21 involute splines	1300	<450	
Drawbar Category based on PTO power	Category		PTO power at rated engine speed, kW		
	0		≤ 28		
	1		≤ 48		
	2		≤ 115		
	3		≤ 185		
	4		≤ 200		
5		≤ 500			



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Drawbar Power, kW	As per manufacturer's specification
Lift Force Capacity, kN	As per manufacturer's specification
Wheel Tread Adjustment	Shall be provided
PTO Casing/Cover	Shall be provided
Roll-Over-Protective Structure (ROPS)	Shall be provided
Protective Seat Belt	Shall be provided

■ Safety, Workmanship, and Finish

Criteria	Requirement as per PNS/BAFS PABES 301:2020
General	<input type="checkbox"/> Shall be free from manufacturing defects that may be detrimental to its operation. <input type="checkbox"/> Any uncoated metallic surface shall be free from rust and shall be painted properly. <input type="checkbox"/> All hot surfaces that may come in contact with the operator shall be provided with heat shield or protective cover. <input type="checkbox"/> Shall be free from sharp edges and surfaces that may injure the operator.
Noise level	<input type="checkbox"/> The maximum allowable noise level shall be 90 dB (A). <input type="checkbox"/> There shall be provision for ear protection.
Operator's seat	<input type="checkbox"/> Shall be provided which will adequately support the operator in all working and operating conditions. <input type="checkbox"/> Adequate and comfortable support and protection for the feet shall also be provided. <input type="checkbox"/> Seats and ROPS shall conform to the requirements specified in PAES 139 and 140: 2004.
PTO Casing/Cover	<input type="checkbox"/> When the PTO is in use, a cover or casing that protects the sides of the PTO shaft shall be fitted. <input type="checkbox"/> An additional non-rotating casing shall also be provided when the PTO is not in use. This casing shall enclose the PTO shaft completely and be fixed to the tractor body.
Cooling system	<input type="checkbox"/> The engine of the four-wheel tractor shall be equipped with cooling system suitable for tropical operations.
Vibration mechanism	<input type="checkbox"/> Shall be provided.
Labels, safety symbols, and warnings	<input type="checkbox"/> Shall be provided. <input type="checkbox"/> Warning notices shall be provided in accordance with PAES 101:2000.
Ballast or other weights	<input type="checkbox"/> Shall be provided.

■ Suspension and Termination of Test

If there is no rated maximum power provided, AMTEC shall not proceed with the test. On the other hand, if the machine stops due to breakdown or malfunction during the test run affecting the machine's performance, the test may be suspended. If the machine cannot continue the operation, the test shall be consequently terminated.

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)



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■ **Testing Fee**

1. The testing fee for four-wheel tractors is PHP 22,000 plus overhead expenses such as fuel and lubricating oil.
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. 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 <http://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