

SNI 8185:2019
Standar National of Indonesia

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Paddy combine harvester
&
Multi-commodity combine harvester

standard clasification of combine harvester Indonesia

A power of engine ≥ 7 kW

B power engine ≥ 11.5 kW

C power engine ≥ 31 kW

The statistics of combine distribute for farmer

| No | Combine | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|----|--|-------|--------|-------|-------|------|------|------|
| 1 | Paddy combine harvester | 3.185 | 9.6060 | 4.276 | 1.142 | 841 | 632 | 351 |
| 2 | Corn combine harvester | 25 | 177 | 126 | 535 | 325 | 70 | 4 |
| 3 | Multi comodity (Corn, paddy,soybean) combine harvester | - | - | - | 262 | 66 | 169 | 206 |

Dimensions and technical specifications of Paddy combine harvester (1)

| Parameters | Units | A Class | B Class | C Class |
|--|---------------|-------------------------------------|--------------------------------------|------------------------------------|
| Machine length | mm | 2400 – 3700 | 3500 - 4750 | 4600 – 5400 |
| Machine width | mm | 1200 – 1900 | 1700 – 2100 | 2100 – 3100 |
| Machine height | mm | 1000 – 2200 | 1800 - 3000 | 2200 – 2800 |
| Machine operating weight | kg | 350 - 1400 | 1045 – 2150 | 2300 - 3500 |
| Engine | | | | |
| a. Motor type | - | diesel , 4 strokes | diesel , 4 strokes | diesel , 4 strokes |
| b. Continuous power/motor speed | kW/rpm | minimum 7,0/ 2200 – 3000 | minimum 11,5/ 2200 – 3000 | minimum 31/ 2000 – 2800 |
| c. Cooling system | - | air or water | air or water | air or water |
| d. Ignition system | - | crank/electric starter | crank/electric starter | crank/electric starter |

Dimensions and technical specifications of Paddy combine harvester (2)

| Parameters | Units | A Class | B Class | C Class |
|--|-------|---|---|---|
| Transmission | | | | |
| a. Power delivery system | - | automatic hydraulics, belts and pulleys, chains and sprockets | automatic hydraulics, belts and pulleys, chains and sprockets | automatic hydraulics, belts and pulleys, chains and sprockets |
| b. Forward and reverse gears (with or without H-L combination application) | - | 1 – 3 forward; 1 backward | 1 – 4 forward; 1 – 4 backward | 1 – 4 forward; 1 – 4 backward |
| Main clutch | - | pulley and belt | pulley and belt | pulley and belt |
| Turning clutch | - | automatic/manual clutch, with/without steering clutch, with/without claw gear | automatic/manual clutch, with/without steering clutch, with/without claw gear | automatic/manual clutch, with/without steering clutch, with/without claw gear |

Dimensions and technical specifications of Paddy combine harvester (3)

| Parameters | Units | A Class | B Class | C Class |
|---|-------|---|--------------------------|--------------------------|
| Cutting parts | | | | |
| a. Cutting knife : | | | | |
| 1) Length | mm | 50 – 85 | 75 – 85 | 75 – 85 |
| 2) Width | mm | 50 – 77 | 70 – 77 | 70 – 77 |
| 3) Thick | mm | 2 – 6 | 2 – 6 | 2 – 6 |
| b. Cutting height range from the ground | mm | 70–900 | 70–900 | 70–1200 |
| Screw auger | | | | |
| a. Diameter cylinder | mm | 160 – 290 | 160 – 500 | 280 – 550 |
| b. Auger thread height | mm | 40 – 70 | 40 – 80 | 60 – 125 |
| Conveyor type carrier parts | - | auger thread/steel chain | auger thread/steel chain | auger thread/steel chain |
| Drive wheel type | - | Tire wheel/steel wheel or iron/rubber chain (crawler) | iron/rubber crawler | iron/rubber crawler |

Construction material requirements of Paddy combine harvester

| Parts/Components | Material type | A & B Class | C Class |
|-------------------------------------|---------------------------------------|---|--|
| Panicle puller/comb section | | | |
| a. Reel guide system | - | manual/hydraulic system | hydraulic system |
| b. Cutting height adjustment system | - | hydraulic system | hydraulic system |
| c. Towing/combing rotation (rpm) | - | 20-45 | 20-45 |
| Rice cutting knife | | | |
| a. Cutting knife | Special steel | | |
| b. Knife blade | Special steel | Thick 2 – 4 mm | Thick 2 – 4 mm |
| c. Static gear | Cast steel/special steel | Thick 2 – 50 mm | Thick 2 – 50 mm |
| Drive wheel parts | | | |
| a. wheel type | - | re wheel / iron wheel chain wheel (crawler) | chain wheel (crawler) |
| b. materials | rubber or steel plate or cast iron | thick rubber 13 – 30 mm thick cast iron 6 – 8 mm | thick rubber 28 – 35 mm thick cast iron 6 – 10 mm |

Performance requirements of Paddy combine harvester

| Technical parameters | Units | A Class | B Class | C Class |
|---|---------|-------------|-------------|-------------|
| Motor shaft rotation when harvesting | rpm | 1.500-2.400 | 1.500-30400 | 2.000-3.000 |
| Harvesting road speed | km/hour | 0,7 – 4,0 | 0,7 – 4,0 | 3,0–6,0 |
| Minimum effective field capacity | ha/hour | 0,1 | 0,15 | 0,40 |
| Minimum harvesting field efficiency | % | 45 | 45 | 50 |
| Maximum fuel consumption | L/hour | 3,5 | 7,5 | 10 |
| Cutting width | mm | 750 -1.300 | 1.301-1.800 | 1.801-2.200 |
| Percentage of maximum grain damage rate | % | 2 | 2 | 2 |
| Maximum harvest loss percentage | % | 3,5 | 3,5 | 3,5 |

Service requirements of Paddy combine harvester

| Technical parameters | Units | Service requirements by power rating (kW) A & B Class |
|---|-------|--|
| Work safety | - | The parts that are dangerous to the operator must be protected |
| Work comfortability : a. Maximum noise | dB | 98 |
| Notes : The manufacturer includes earmuffs in the product for products with a noise level above 90. | | |

Classification of multi-commodity harvesting machines (rice, corn and soybeans)

| Classification of multi-commodity harvesting machines (rice, corn and soybeans) | Power engine (kW) |
|---|-------------------|
| Class | A : 30 – 60 |
| | B : 60,1 – 80 |

Dimensions and technical specifications of Multi-commodity combine harvester (1)

| Parameters | Units | Specification requirements for multi-commodity harvesting machines (rice, corn and soybeans) | |
|--|-------|--|------------------|
| | | 30 kW – 60 kW | 60,1 kW – 80 kW |
| Length | mm | 4.000 – 5.300 | 5.000 – 5.300 |
| Width | mm | 2.000 – 3.000 | 2.000 – 3.000 |
| Height (with canopy) | mm | 2.000 – 3.000 | 2.500 – 3.100 |
| Machine operating weight | kg | 2000 – 3.300 | 3.200 – 3.500 |
| Cutting width - reciprocating serrated blade type | mm | 1.400 – 2.000 | 1.400 – 2.000 |
| Engine | – | Diesel engine | Diesel Engine |
| a. Engine type | – | 4 – 6 | 4 – 6 |
| b. Number of cylinders | rpm | 2.400 – 2.600 | 2.400 – 2.600 |
| c. maximum motor speed | – | Radiator | Radiator |
| d. Cooling system | – | Electric starter | Electric starter |
| e. Ignition system | | | |

Dimensions and technical specifications of Multi-commodity combine harvester (2)

| Parameters | Units | Specification requirements for multi-commodity harvesting machines (rice, corn and soybeans) | |
|--|------------------------|--|---|
| | | 30 kW – 60 kW | 60,1 kW – 80 kW |
| Transmission a. Power transmission system b. Gear forward and reverse | – | Hidrolik, belt and sprocket chain 1–3 forward, 1–3 reverse | Hidrolik, belt and sprocket chain 1–3 forward, 1–3 reverse |
| Cutting part a. Reciprocating serrated type - knife length (p) - knife width (l) b. Cutting height range from the ground | mm mm mm | 80 – 90 70 – 80 40 – 950 | 80 – 90 70 – 80 40 – 950 |
| Screw auger - Length of cylinder - Width of cylinder - Height of auger thread | mm mm mm | 1300 – 2000 250 – 320 75 – 110 | 1850 – 2000 300 – 350 80 – 100 |

Dimensions and technical specifications of Multi-commodity combine harvester (3)

| Parameters | Units | Specification requirements for multi-commodity harvesting machines (rice, corn and soybeans) | |
|--|----------------|--|---------------------------------------|
| | | 30 kW – 60 kW | 60,1 kW – 80 kW |
| Chain conveyor - Type of conveyor | – | Steel chain | Steel chain |
| Thresher part Length of cylinder - diameter of cylinder with gear - diameter of cylinder without gear | mm mm mm | 900 – 1700 500 – 650 450 – 500 | 1650 – 2000 500 – 650 450 – 500 |
| Wheel part: Wheel type | | Rubber crawler | Rubber crawler |

Construction material requirements of multi-commodity harvesting machines (rice, corn and soybeans)

| Parts/components | Material type | Units | Construction material requirements | |
|---|--|----------------|---|---|
| | | | 30 kW – 60 kW | 60,1 kW – 80 kW |
| Cutting knife -reciprocating blade | - material thickness - Hardened carbon steel | mm HRC | 2 – 3 45 – 60 | 2 – 3 45 – 60 |
| Delivery part thread shape (screw auger) - cylinder (screw auger) - Auger thread | - Plate steel, thick - Plate steel, thick | mm mm | ≥ 1,5 2 – 3 | ≥ 2 2 – 3 |
| Thresher part - Thresher gear - cylinder shaft | - Solid steel, diameter - Solid steel, diameter | mm mm | 12 – 14 50 – 62 | 12 – 16 50 – 52 |
| Wheel part: - material thickness | Rubber material, thick | mm | ≥ 20 | ≥ 20 |
| - Frame - Cover | - Plate steel, thick - Plate steel, thick | mm mm | 3 – 5 1,5 – 1,8 | 3 – 5 1 – 2 |
| Dimension of Bottom filter hole - Paddy - Corn - Soybeans | - wire, lenght x width - wire, lenght x width - wire, lenght x width | mm mm mm | ≥ (12 x 12) ≥ (12 x 12) ≥ (8 x 8) | ≥ (12 x 12) ≥ (12 x 12) ≥ (8 x 8) |

Performance requirements of multi-commodity harvesting machines (rice, corn and soybeans) Class 30 kW – 60 kW

| Technical parameters | Units | Paddy commodity | Corn commodity | Soybeans commodity |
|-------------------------------------|---------|-----------------|----------------|--------------------|
| Harvesting speed | Km/hour | 3 - 6 | 1,5 - 4 | 3 - 4 |
| Minimum effective field capacity | Ha/hour | 0,25 | 0,10 | 0,20 |
| Minimum harvesting field efficiency | % | 40 | 45 | 50 |
| Maximum fuel consumption | l/hour | 7,5 | 7,5 | 7,5 |
| Actual cutting width | mm | 1300 – 2000 | 1400 – 1800 | 1400 – 2000 |
| Minimum level of cleanliness | % | 90 | 95 | 90 |
| Percentage of maximum damage rate | % | 2 | 3 | 2 |
| Minimum threshing efficiency | % | 95 | 95 | 95 |
| Maximum total loss percentage | % | 3 | 7 | 3 |

Performance requirements of multi-commodity harvesting machines (rice, corn and soybeans) Class 60,1 kW – 80 kW

| Technical parameters | Units | Paddy commodity | Corn commodity | Soybeans commodity |
|-------------------------------------|---------|-----------------|----------------|--------------------|
| Maximum harvesting speed | Km/hour | 3 – 6 | 1,5 – 4 | 3 – 4 |
| Minimum effective field capacity | Ha/hour | 0,45 | 0,16 | 0,45 |
| Minimum harvesting field efficiency | % | 44 | 32 | 50 |
| Maximum fuel consumption | l/hour | 10 | 10 | 10 |
| Actual cutting width | mm | 1600 – 2000 | 1600 – 2000 | 1600 – 2000 |
| Minimum level of cleanliness | % | 90 | 95 | 90 |
| Percentage of maximum damage rate | % | 2 | 3 | 2 |
| Minimum threshing efficiency | % | 90 | 95 | 95 |
| Maximum total loss percentage | % | 3 | 7 | 3 |

Service test requirements of multi-commodity harvesting machines (rice, corn and soybeans)

| Technical parameters | Units | Paddy commodity | Corn commodity | Soybeans commodity |
|---|-------|--|----------------|--------------------|
| - Work safety | - | The parts that are dangerous to the operator must be protected | | |
| - Work comfortability: - Maximum noise*) | dB | 90 | 90 | 90 |
| Note: *) equipped with ear protection | | | | |