

# **SPECIFICATION SHEET FOR COMBINE HARVESTER**

**COMBINE-HARVESTER-THRESHER TEST CODE IS : 8122 (Part-2) - 2000**

## **B-1 GENERAL**

- a) Name and address of manufacturer
- b) Make
- c) Model
- d) Type
- e) Year of manufacture
- t) Serial number

## **B-2 PRIME MOVER**

### **B-2.1 General**

- a) Make
- b) Model
- c) Type
- d) Serial number
- e) Engine speed (Manufacturer's recommended setting) (rpm)
  - 1) Maximum speed at no load
  - 2) Rated speed
  - 3) Low idle speed
- f) Location
- g) Mounting

### **B-2.2 Cylinder and Cylinder Head**

- a) Number
- b) Disposition
- c) Bore/Stroke (mm)
- d) Capacity as specified by the applicant (cu.cm)
- e) Compression ratio
- f) Type of cylinder head
- g) Type of cylinder liners
- h) Arrangement of valves
- j) Type of combustion chamber
- k) Valve clearance in cold/hot (mm)
  - 1) Inlet valve
  - 2) Exhaust valve

### **B-2.3 Fuel System**

#### **B-2.3.1 *Type of Fuel System***

**B-2.3.2 Fuel Tank**

- a) Capacity (l)
- b) Location
- c) Provision for draining of sediments/water

**B-2.3.3 Fuel Feed Pump**

- a) Type
- b) Make
- c) Model
- d) Provision of sediment bowl

**B-2.3.4 Fuel Filters**

- a) Make
- b) Model
- c) Number
- d) Type of elements
- e) Capacity of final stage filter (l)

**B-2.3.5 Injection Pump**

- a) Make
- b) Model
- c) Type
- d) SI No.
- e) Method of drive

**B-2.3.6 Fuel Injectors**

- a) Make
- b) Model
- c) Type
- d) Manufacturer's production pressure setting, MPa
- e) Injection timing .
- f) Firing order

**B-2.4 Governor**

- a) Make
- b) Model
- c) Type
- d) Governed range of engine speed (rpm)
- e) Rated engine speed (rpm)

**B-2.5 Pre-cleaner**

- a) Make
- b) Type
- c) Number
- d) Location
- e) Height of pre-cleaner top above ground level (mm)

### **B-2.6 Air Cleaner**

- a) Make
- b) Type
- c) Number
- d) Location
- e) Size of dry filter element ID/OD/Length
- f) Range of suction pressure, kPa (mm of Hg)
- g) Oil capacity (l)
- h) Oil change period

### **B-2.7 Exhaust**

- a) Type of silencer
- b) Position of silencer outlet
- c) Range of exhaust gas pressure kPa (mm of Hg)
- d) Provision of spark arresting device

### **B-2.8 Lubricating System**

#### **B-2.8.1 Type B-2.8.2 Filters**

- a) Type
- b) Number
- c) Oil sump capacity (l)
- d) Oil change period

#### **B-2.8.3 Pump**

- a) Type
- b) Method of drive
- c) Pressure release setting kPa (kgf/sq.cm)
- d) Minimum permissible pressure, kPa (kgf/sq.cm)
- e) Method of oil cooling

### **B-2.9 Details of Heat Exchanger**

- a) Type
- b) Make
- c) Model
- d) Number of tubes
- e) Size of tube (mm)
- f) Capacity (l)
  - 1) Oil
  - 2) Water

### **B-2.10 Cooling System**

#### **B-2.10.1**

- a) Type
- b) Details of pump
- c) Details of fan
- d) Means of temperature control

**B-2.10.2 Radiator**

- a) Effective size of radiator (mm):
- b) Number of tubes
- c) Type of radiator grill
- d) Means of grill cleaning
- e) Method of mounting
- f) Type of radiator cap
- g) Radiator cap pressure kPa (kgf/sq.cm)
- h) Bare radiator capacity (l)
- j) Total coolant capacity (l)

**B-2.11 Starting System**

- a) Type
- b) Aid for cold starting
- c) Any other device provided for easy starting

**B-2.12 Electrical System****B-2.12.1 Battery**

- a) Make
- b) Number and type
- c) Capacity and rating
- d) Location

**B-2.12.2 Starter**

- a) Make
- b) Model
- c) Type
- d) Capacity and rating

**B-2.12.3 Alternator**

- a) Make
- b) Model
- c) Type
- d) Output rating e) Location
- e) Method of drive

**B-2.12.4 Voltage Regulator**

- a) Make
- b) Type
- c) Capacity

**B-2.12.5 Detail of Lights**

Description	Number and capacity of bulb	Height above ground to the centre beam (mm)	Size of beam (mm)	Distance from centre of the beam to outside edge of combine (mm)
Head lights				
Front working light				
Centre working light				
Front side light				
Front side indicator light				
Tail light-cull-brake light				
Rear side indicator light for unloading				
Rear work light				
Engine inspection light				
Side inspection light				
Flasher light (Red)				
Dash board light				
Trailer light: a) Parking-cum brake b) Side indicator light -Main switch details -Light switch details				

**B-2.12.6 Horn**

- a) Make
- b) Type
- c) Location

**B-2.12.7 Fuse Box****B-2.12.8 Details of Other Electrical Accessories****B-2.13 Operational Mass of Primemover (kg)****B-3 COMBINE****B-3.1 Wheel Equipments****B-3. 1. 1 Driving Wheels**

- a) Make
- b) Type
- c) Location
- d) Number and size
- e) Track width (mm)
- f) Recommended tyre pressure, kPa

**B-3.1.2 Steering Wheel**

- a) Make
- b) Type
- c) Location
- d) Number and size
- e) Track width (mm)
- f) Recommended tyre pressure, kPa

**B-3.1.3 Wheel Base (mm)****B-3.2 Transmission System****B-3.2.1 Clutch**

- a) Make
- b) Type
- c) Size (mm)
- d) Number of friction discs
- e) Location
- e) Method of operation

**B-3.2.2 Gear Box and Differential**

- a) Make
- b) Type
- c) Location
- d) Number of speed
- e) Method of drive
- f) Method of gear shifting
- g) Oil capacity (l)
- h) Oil changing period

**B-3.2.3 Final Drive**

- a) Type
- b) Reduction ratio
- c) Location
- d) Oil capacity (l)
- e) Oil changing period

**B-3.2.4 Nominal Speed**

Movement	Gear No.	No. of engine revolutions for one revolution of driving wheel	Nominal speed at rated engine speed when fitted with----- size tyre at an inflation pressure of - kPa and rolling radius of - mm (kmph)

Without Variator: Forward 1 2 3 Reverse R			
With Variator Forward 1 2 3 Reverse R			

### **B-3.3 Brakes**

#### **B-3.3.1 Service Brake**

- a) Make
- b) Type
- c) Location
- d) Area of liners (sq.cm)
- e) Thickness of liner(mm)
- f) Method of operation

#### **B-3.3.2 Parking Brake**

- a) Make
- b) Type and location
- c) Method of operation

### **B-3.4 Steering System**

- a) Make and model
- b) Type
- c) Method of operation
- d) Diameter of steering control wheel (mm)
- e) Location

### **8-3.5 Hydraulic System**

#### **B-3.5.1 Pump**

- a) Type
- b) Make
- c) Model
- d) Number
- e) Method of operation
- f) Location

#### **B-3.5.2 Hydraulic Tank**

- a) Type
- b) Location

- c) Size (nun)
- d) Capacity (I)
- e) Oil change period (h)
- f) Number and type of oil filters

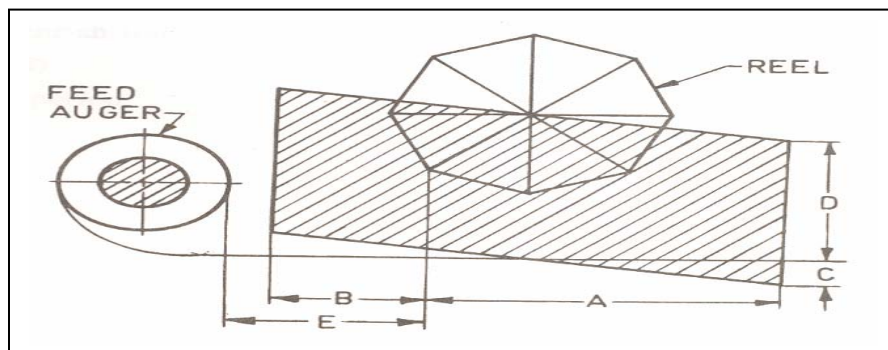
### **B-3.5.3 Number of Hydraulic Cylinders**

### **B-3.6 Reel Assembly**

- a) Type
- b) Number of tyne bars
- c) Size of tyne bars (mm)
- d) Type of tyne bar
- e) Dia of reel(mm)
- f) Width of reel (mm)
- g) Range of speed corresponding to rated engine speed for field work (rpm)
- h) Arrangement for speed variation
- J} Number of tynes on each bar and their spacing
- k) Maximum distance ahead of cutter bar points (mm) (see A in Fig. 2)
- m) Maximum distance behind the cutter bar points (mm) (see B in Fig. 2)
- n) Maximum vertical distance below the cutter bar points (mm) (see C in Fig. 2)
- p) Maximum vertical distance above the cutter bar points from the centre of reel (mm) (see D in Fig. 2)
- q) Distance from cutter bar points to the front of feeding auger (mm) ( see E in Fig. 2)
- r) Arrangement for raising and lowering the reel
- s) Arrangement for forward and backward movement of reel
- t) Arrangement for variation of angle of the tyne
- u) Type of reel drive
- v) Safety device in reel drive

### **B-3.7 Cutter Bar Assembly**

- a) Working width (mm) (see T, in Fig. 3):
- b) Effective cutter bar width (mm) (see T, in Fig. 3)
- c) Number and spacing of knife guards (see R in Fig. 3):
- d) Number and type of knife blades
- e) Details of knife drive
- f) Knife safety arrangement





### FIG. 2 REEL ASSEMBLY

- g) Knife stroke (mm)
- h) Strokes per minute
- J) Knife speed corresponding to rated engine speed for field work (rpm)
- k) Type of ledger plate
- m) Arrangement and range of adjusting cutting heights
- n) Type of dividers
- p) Arrangement for lifting lodged crop

#### B-3.8 Hardness of Knife Blades (IIRC)

- a) Hardened zone
  - 1) Minimum
  - 2) Maximum
- b) Remainder zone
  - 1) Minimum
  - 2) Maximum

#### B-3.9 Chemical Composition of Knife Blade and Knife Guards

Knife Blade    Knife Guards

- a) Carbon (%)
- b) Manganese (%)
- c) Phosphorus (%)
- d) Sulphur (%)
- e) Silicon (%)
- f) Copper (%)
- g) Nickel (%)
- h) Chromium (%)
- J) Tin (%)
- k) Molybdenum (%)

#### B-3.10 Cutting Platform Auger

- a) Type of crop conveyor
- b) Size of auger (mm)
  - 1) Dia
  - 2) Width

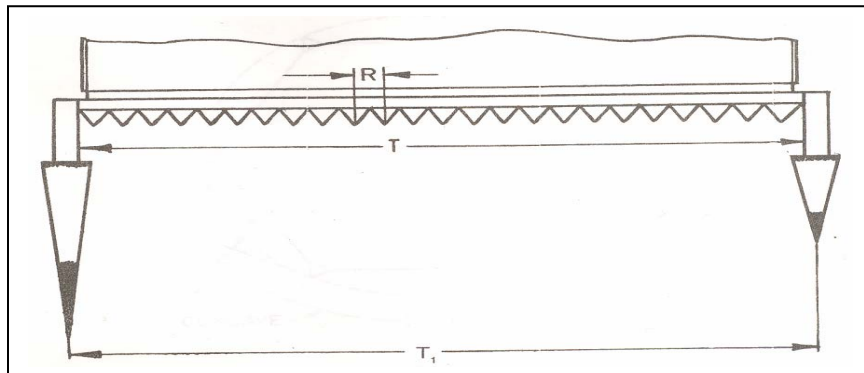


FIG. 3 CUTTIER BAR ASSEMBLY

- c) Speed of the auger corresponding to rated engine speed for field work (rpm):
- d) Details of retractable fingers
  - 1) Number
  - 2) Range of throw out (mm)
  - 3) Axial spacing between the fingers (mm)
  - 4) Peripheral distance between the fingers (mm)
  - 5) Arrangement for adjustment of fingers
- e) Arrangement for adjusting the clearance of crop auger
- f) Auger drive safety arrangement

**B-3.11 Height of Header Assembly in the Transport Position (mm)**

**B-3.12 Arrangement for Locking the Header Assembly in Raised Position**

**B-3.13 Arrangement for Side Way Tilting the Header Assembly**

**B-3.14 Undershot Conveyor**

- a) Type of feeder conveyor
- b) Number and type of chains
- c) Number of combs
- d) Size of combs (mm)
- e) Size of chain (mm)
- f) Roller dia (mm)
- g) Pitch (mm)
- h) Spacing of combs (mm)
- J) Width of conveyor (mm)
- k) Conveyor drive safety arrangement
- m) Arrangement for adjusting clearance between comb and platform
- n) Speed of conveyor corresponding to rated engine speed for field work (rpm)
- p) Number of teeth on comb bar

**B-3.15 Threshing Drum**

Raspbar Type

Pegtooth type

- a) Type
- b) Width (mm)
- c) Outside dia (mm) (see D in Fig. 4)
- d) Range of speed corresponding to rated engine speed for field work (mm)
  - 1) Minimum
  - 2) Maximum
- e) Peripheral speed (m/sec)
  - 1) Minimum
  - 2) Maximum
- f) Number of bars
- g) Number of hub plate(s)
- h) Number of pegs and their spacing on each bar
- j) Height of pegs (mm)
- k) Length of raspbar (mm)
- m) Number of rasps/100 mm

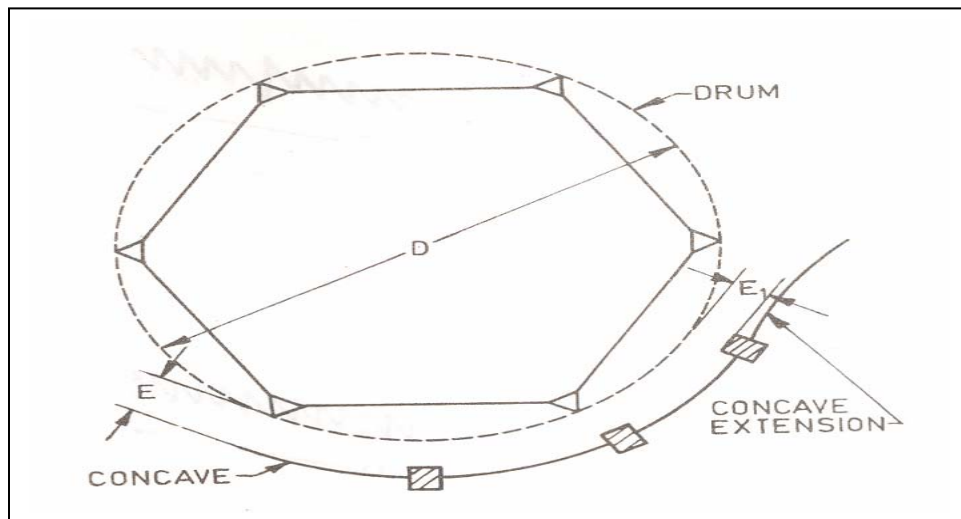
- n) Number of rasps on each bar
- p) Number and type of bearings
- q) Arrangement of bars
- r) Hardness (HRC)
  - 1) Minimum
  - 2) Maximum
- s) Chemical composition
  - 1) Carbon (%)
  - 2) Manganese (%)
  - 3) Silicon (%)
  - 4) Phosphorus (%)
  - 5) Sulphur (%)
  - 6) Molybdenum (%)
  - 7) Chromium (%)
  - 8) Nickel (%)
  - 9) Copper (%)
  - 10) Tin (%)
  - 11) Aluminium (%)
- t) Method of speed variation

### **B-3.16 Concave**

Rasbar Type

Pegtooth type

- a) Width of concave (mm)
- b) Effective width (mm)
- c) Type of concave
- d) Number of bars
- e) Number of pegs per bars
- f) Height/spacing of the pegs (mm)
- g) Peripheral length (mm)
- h) Effective area (sq.m)
- j) Additional area of extension (sq.m)
- k) Details of extension
- m) Range of clearance (mm)
  - 1) Front (see EI in Fig. 4)
  - 2) Rear (see E in Fig. 4)
- n) Method of adjusting the clearance between drum and concave



**FIG. 4 DRUM ASSEMBLY**

### **B-3.17 Rear Beater**

- a) Type
- b) Size(mm)
- c) Arrangement and location
- d) Type of drive

### **B-3.18 Baffle Plate (Deflector)**

- a) Type
- b) Number of flaps
- c) Size of flap (mm)
- d) Location
- e) Method of flap adjustment
- f) Method of fixing flap

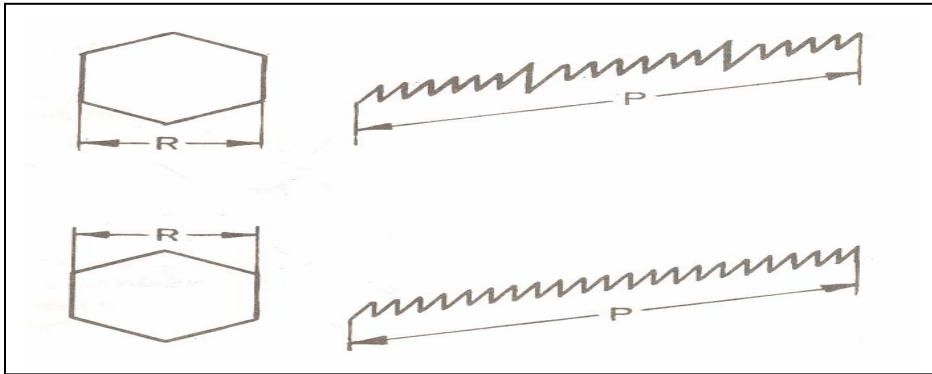
### **B-3.19 Separating Mechanism**

#### **B-3.19.1 Straw Walkers**

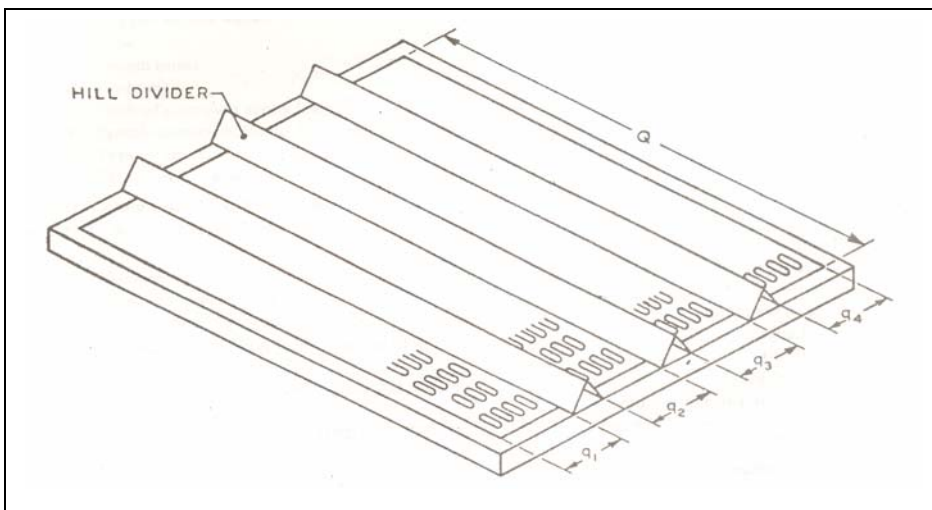
- a) Number
- b) Type
- c) Size of each straw walker (mm)
  - 1) Length (see P in Fig. 5)
  - 2) Width (see R in Fjg. 5)
  - 3) Area (m2 )
- d) Effective separating area of straw walker (m2 )
- e) Lift/throw (mm)
- f) Oscillation per minute corresponding to field speed of engine
- g) Type of extension
- h) Number and type of bearing

### B-3.19.2 Stepped Grain Pan

- a) Type
- b) Size (mm)



**FIG. 5 SEPARATING MECHANISM**



**FIG. 6 CLEANING SIEVE**

- c) Effective area of pan (sq.m)
- d) Details of extension
- e) Location

### B-3. 19.3 Cleaning Sieves ( see Fig. 6)

#### B-3. 19.3.1 Top sieve

- a) Number of sieve
- b) Type
- c) Overall size of sieve
  - 1) Length (mm)
  - 2) Width (mm)
- d) Effective cleaning area (m<sup>2</sup>)

- e) Type of extension
- f) Area of extension (m<sup>2</sup> )
- g) Oscillation per minute corresponding to field speed of engine
- h) Lift/throw (mm)
- j) Arrangement for varying
- k) The opening of the sieve
- m) Height of lips at maximum opening (mm)
- n) Method of varying oscillation
- p) Method of drive
- q) Number and type of bearing

#### **B-3.19.3.2 Bottom sieve**

- a) Number of sieve
- b) Type
- c) Size (mm)
- d) Effective cleaning area (m<sup>2</sup>)
- e) Size of hole (mm)
- f) Spacing of hole
- g) Oscillations per minute corresponding to rated engine speed
- h) Method of varying oscillations
- J) Height of lips at maximum opening (mm)
- k) Arrangement for varying the opening sieve
- m) Density of holes/100 mm<sup>2</sup>

#### **B-3.19.3.3 Blower**

- a) Dia (mm)
- b) Effective width (mm)
- c) Number and type of blade
- d) Size of blade (mm)
  - 1) Length
  - 2) Width
- e) Type of drive
- f) Method of varying the blower speed
- g) Speed corresponding to rated engine speed for field work (rpm)
  - 1) Minimum
  - 2) Maximum
- h) Method of controlling the air blast

#### **B-3.19.3.4 Grain pan**

- a) Type
- b) Size(mm)
- c) Inclination
- d) Location

### **B-3.20 Grain Conveying Mechanism**

#### **B-3.20.1 Bottom Grain Conveyor**

- a) Type

- b) Length of conveyor (mm)
- c) Outer dia of auger (mm)
- d) Pitch of conveyor screw (mm)
- e) Speed corresponding to field speed of engine (rpm)
- f) Number and type of bearings
- g) Method of drive
- h) For safety device

#### **B-3.20.2 Grain Elevator**

- a) Type
- b) Length of elevator (mm)
- c) Outside section (mm)
- d) Number and type of pad
- e) Size of pads (mm)
- f) Spacing of pads (mm)
- g) Speed corresponding to field speed of engine (rpm)
- h) Type and size of chain (mm)
- j) Elevator drive safety arrangement
- k) Method of tensioning the chain

#### **B-3.20.3 Upper Grain Auger**

- a) Type
- b) Length (mm)
- c) Dia (mm)
- d) Pitch of conveyor screw (mm) .
- e) Speed corresponding to field speed of engine (rpm)
- f) Type of drive
- g) Safety arrangement

#### **B-3.21 Tailing Conveying Mechanism**

##### **B-3.21.1 Bottom Tailing Auger**

- a) Type
- b) Dia(mm)
- c) Length of auger(mm)
- d) Pitch of conveyor screw (mm)
- e) Speed corresponding to field speed of engine (rpm)
- f) Type of drive
- g) Number and type of bearing safety device

##### **B-3.21.2 Tailing Elevator**

- a) Type
- b) Length of elevator (mm)
- c) Outer section (mm)
- d) Number and type of pads
- e) Size of pads (mm)

- f) Spacing of pads (mm)
- g) Type and size of chain (mm)
- h) Method of tensioning the chain
- j) Elevator drive safety arrangement

### **B-3.22 Grain Tank**

#### **B-3.22.1 General**

- a) Location
- b) Capacity
  - 1) Volume basis (cu.m)
  - 2) Mass basis (kg)
- c) Method of agitating the grains in tank
- d) Size of grain tank opening (mm)

#### **B-3.22.2 Grain Conveying Auger (Bottom of Grain Tank)**

- a) Type
- b) Dia(mm)
- c) Pitch of screw (mm)
- d) Length of screw (mm)
- e) Speed corresponding to field speed of engine (rpm)
- f) Number and type of bearing
- g) Type of drive

#### **B-3.22.3 Grain Unloading Auger**

- a) Type
- b) Dia of auger (mm)
- c) Pitch of screw (mm)
- d) Length of unloading auger (mm)
- e) Horizontal reach (nun).
- f) Discharge height above ground level (mm)
- g) Clearance height (mm)
- h) Speed corresponding to field speed of engine (rpm)
- j) Type of drive
- k) Safety device

### **B-4 SAFETY DEVICES PROVIDED ON THE MACHINE**

- a)
- b)
- c)
- etc

### **B-5 OPERATING CONTROLS, GAUGES AND INSTRUMENTS**

#### **B-5.1 On the Panel Board**

- a)
- b)
- c)
- etc



### **B-5.2 Controls on RHS of the Operator**

- a)
- b)
- c)
- etc

### **B-5.3 Controls on LHS of the Operator**

- a)
- b)
- c)
- etc

### **B-6 OPERATOR'S THIN SEAT**

- a) Make
- b) Type
- c) Type of suspension
- d) Type of dampening
- e) Longitudinal adjustment (mm)
- f) Adjustment of back rest

### **B-7 HELPER'S SEAT**

- a) Make
- b) Type
- c) Adjustments
- d) Location

### **B-8 CANOPY**

- a) Type
- b) Size (mm)
- c) Height from operator's platform (mm)

### **B-9 OVERALL DIMENSIONS OF COMBINE HARVESTER IN WORKING POSITION (mm)**

- a) Length
- b) Width
- c) Height

### **B-10 MASSES**

Mass of combine harvester with coolant, fuel, lubricants and grain tank full and 75 kg mass on the operator's seat (kg)

- a) Total
- b) Front
- c) Rear

### **B-11 MINIMUM GROUND CLEARANCE (mm)**

**B-12 TOTAL NUMBER OF LUBRICATING POINTS**

- a) Greasing
- b) Oiling

**B-13 COLOUR OF COMBINE**

**B-14 HEADER TRANSPORT TRAILER**

- a) Type
- b) Number and type of wheels
- c) Make
- d) Size (mm)
- e) Track width (mm)
- f) Height of hitch in working position (mm)
- g) Minimum ground clearance (mm)
- h) Transport length of combine with header assembly on trailer (mm)
- j) Overall dimensions (mm)
  - 1) Length
  - 2) Width
  - 3) Height

**B-15 DETAILS OF STANDARD ACCESSORIES AVAILABLE WITH THE COMBINE**

**B-15.1 Standard Accessories**

**B-15.2 Optional Accessories**