

Machine Presentation VARITRON 470



1 2012

# **Contents**

- Different types of the VARITRON family ٠
- Reason for self-propelled harvester ۲
- Machine concept
- Machine overview •
- E.20 Haulm Topper ٠
- E.30 Intake ٠
  - oppel wheel —
  - Share lifting for spraying track

- E.40 Main webs •
  - Main webs overview
  - Intake web
  - Intake web drive
  - Intake web options
  - Main web \_\_\_\_
  - 1st and 2nd main web
  - Main web drive
  - Drive of 1st main web
  - 1st main web cleaning shaft
  - Extracting unit —
  - Height / speed adjustment
  - 2nd main web
  - Rotary agitator in 2st main web



# Contents

- E.50 Separating devices
  - Separators (RS / MS)
  - Roller Separator (RS)
  - Roller separator (RS) function
  - Rollers
  - MultiSep
  - MultiSep Adjustment
  - Roller types for MultiSep
  - Automatic levelling RS/ 2nd MultiSep
  - Transfer web
  - Fine haulm elevator
  - N-separator
- E. 60 Bunker / Elevator
  - Ring elevator
  - OptiBag

- E. 60 Bunker / Elevator
  - Moving floor bunker
  - Bunker unloading
  - Bunker
- E.70 Wheels / chassis
  - Chassis overview
  - Rear axle
  - Auto pilot
- E.80 Operational functions
  - Clean Control
  - Video control
  - Automatic greasing system
- L.90 Lights / miscellaneous



3 2012

# **Different types within the VARITRON family**



VARITRON 200 2 rows, 0 t Bunker = transport unloader



VARITRON 220 2 rows, 2 t buffer bunker



VARITRON 270 2 rows, 7 t bunker



VARITRON 470 4 rows, 7 t bunker



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# **Reason for self-propelled harvester**

- Chassis
  - Significantly improved manoeuvrability in comparison to trailed harvesters
  - Wheels adapted to different row width ensure a reduced damage of the crop
  - Optimised load distribution
  - Better driving on wet ground
- Performance / Function
  - Specific adapted power splitting of driving and separator units
  - Fuel saving engine management system with highest performance
  - All drives hydraulically adjustable to ensure optimum adoption of the machine to varying harvest conditions
- Operability
  - Good front and rear view
  - Ergonomically optimised control elements



# Machine concept

- Wide, full width channel for the main web (2,800 mm) for high performance
- Best, unobstructed view onto the intake and the main web
- high variability (possibility to combine MultiSep, RS and fine haulm elevator in different ways)
- large separators, at complete width of the machine, for high performance
- 1,200 mm wide ring elevator
- Minimum fuel consumption due to reduced engine speed (1250 rpm) and exhaust emission standard stage IIIb
- Wide steering angle leads to a very small turning circle

#### **Machine overview**



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# E.20 Haulm Topper





- Front haulm topper with cross conveyor
  - Increased output
  - Extracting roller setting for an improved gentle crop transfer
  - Choice of bed or row topping

- Automatic depth control via 2 skids
  - Depth guidance via skids
  - No wheels in the front between the rows anymore
- Without haulm topper (E.20.020)





# E.30 Intake

- Trailed disc coulter intake with 8 hydraulically driven disc coulters, for an optimum intake of the ridges
- 2 outer haulm feed-in rollers and 3 centre retaining rubbers
- Insensitive in stony soils (4 spring suspended disc coulters give way to stones, without lifting the frame)
- Row width 75 cm
- Electronic depth control via 2 skids



#### E. 30 Share blade





- 2 piece share
  - Optimal for heavy soil conditions
  - Share angle adjustment for optimized material flow and sieving

- 3 piece share
  - Optimal for medium and light soil conditions
  - Share angle adjustment for optimized material flow and sieving



#### E.30 Share lifting for spraying tracks

Lifting of shares for the harvest in spraying tracks (E.30.140)

- Hydraulic share lifting
- Automatic share lowering into digging position at spraying track end



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#### E. 40 Main webs overview





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#### E.40 Intake web



- Additional drop with thick layer of soil
  - Increases the sieving performance
  - Secures the crop protection
  - Improves the haulm separation
- Hydraulically driven and independent speed adjustment
- Pitch dependent PU underdrive





### E. 40 Intake web drive



 Support roller to drive pitch independent intake web through friction drive (E.40.120)



• Pitch **dependent** PU drive combined with a support roller, instead of friction drive, for heavy soil conditions (E.40.125)



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# E. 40 Intake web - options

- Clod breaker in intake web (E.40.130)
- Eccentric agitator in intake web (E.40.150)
- Eccentric agitator in intake web with electrical speed adjustment (E.40.170)
- Cleaning unit in the intake web (E.40.190)





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# E.40 Main web



- Gentle crop transfer (main web bars covered with high-cam belt)
- Several main web pitches available from 28 to 58 mm
- Hydraulic main web drive for optimal speedadjustment to harvesting conditions
- 2 x 2 main webs in the main web channel ٠





#### E. 40 main web bar



Joiner connection

•

- Wear bushes ensure long service life
- Fast and frequent main web changes for different pitches possible



# E. 40 1st and 2nd main web



- 1st intake web hydraulically driven and pitch dependent forced drive
- Speed adjustment of the oscillator in the 1st web adjustable via the control terminal
- Pitch 28, 32, 35, 40, 45 or 50 mm
- 2nd web, hydraulically driven, pitch independent friction drive
- Extracting unit behind 1st and 2nd main web, manually adjustable, incl. automatic reverse of rotation
- Pitch 28, 32, 35, 40 or 45 mm





# E.40 Drive of main webs

- Drive concept 1: Drive under the rod without support roller
  - Forced drive for intake web
  - Friction contacted drive for 1st and 2nd webs; Drive discs Polyurethane
- Drive concept 2: Drive under the rods with support roller
  - Friction contacted drive
  - Drive discs polyurethane
  - Forced drive; optimal for heaviest application conditions
  - For the intake web





#### E.40 Drive of 1st web



Positive drive 1st main web (E.40.250)

for extremly heavy conditions

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# E. 40 Cleaning shaft 1st main web



Cleaning roller with rubber plates in 1st web (E.40.320)

Additional cleaning of the web on wet and adhering soils



# E. 40 Extracting unit

- Unit consisting of a combination of a spiral segment roller and contra-rotating double extracting roller
- Hydraulically driven with speed adjustment
- Automatic reversion in case of blockage
- Double extracting roller and active scrapers work also in extreme conditions



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#### E. 40 Height adjustment / Speed adjustment



Hydraulic height adjustment extracting roller / extracting unit (E.40.780)

 Automatic adjustment of web speed depending on the driving speed (E.40.910)





# E.40 2nd main web



- 2nd web every bar vulcanised (E.40.620)
  - Additional crop protection by soft surface
  - Recommended for Roller Separator

bars of the web (cross-section)



Friction drive combined with support roller for extreme conditions (E.40.630)



# E.40 Rotor agitator in 2nd main web



- Rotor agitator in 2nd main web, hydraulically driven with speed adjustment from operator terminal (E.40.675)
  - for an increased sieving performance

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#### E. 50 Separators overview



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# E. 50 Separators (RS / MS)

- For improved trash separation of haulm, clods, stones and mud
  - Version RS-Roller Separator
  - Version MultiSep
- Choice of double separator
  - Double MultiSep with segment rollers including 2nd extracting unit
  - Roller Separator and MultiSep with 2nd extracting roller against 2nd main web (Vario RS and MultiSep available)





#### **E.50 RS Roller Separator**



- Vario-Roller separator (E.50.030)
  - 80 mm Roller diameter Series
  - For universal use: hydraulic distance adjustment via control terminal
  - Adoption
    (without change of the roller diameter) to:
    - changing crop sizes
    - various soil conditions
- 1 set RS plain rollers delivered as an extra (E.50.080)



# **E.50 RS Roller Separator**



- Powerful separator for extremely heavy, sticky soils
- Quick adaptation to different harvest conditions - Vario RS (without changing of rollers)
- Rubber-coated pairs of rollers arranged longitudinally, (1 spiral roller + 1 plain roller)
- Contra rotating spiral- and plain roller, fixed distance
- Extracting roller against the 2nd main web for haulm separation
- Variable gap distance possible with different smooth roller diameters
  - The smaller the harvested crop, the thicker the rubber plain roller
  - The wetter and more cloddy the soil, the thinner the rubber plain roller



# **E.50 Rollers**



- (1) Steel spiral rollers; dry soil with stones and hard clods
- (2) Rubber spiral roller (standard); for universal use
- (3) Rubber plain roller diameters:
  - 70 mm for extremely wet soils, rich in clods
  - 75 mm for wet soils, rich in clods
  - 80 mm for universal use (standard)
  - 85 mm for small crop on wet soils
  - 90 mm for small crop
  - 94 mm for extremly small crop
- (4) Stainless steel smooth roller 90 mm; for dry soils



# E. 50 MultiSep





- 4 counter-rotating pairs of rollers pull trash downwards
- Equipped with spiral-segments
- Clod roller: rubber-coated (aggressive) or steel (degressive)
- Low maintenance direct drives
- Adjustable via operator terminal
  - levelling and speed
  - clod roller height and distance
  - rotation direction



# E. 50 MultiSep - Adjustment





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# **E.50 MultiSep roller varieties**



- **Clod rollers** ٠
  - Steel
  - Rubber-coated
- 4-lip spiral segment rollers .
  - MultiSep standards
  - for normal harvest conditions
  - 8 mm high lips
- 3-lip spiral segment rollers .
  - For wet harvest conditions
  - To increase separation
  - 8 mm high lips
- 3-lip spiral segment rollers
  - for extreme wet harvest conditions
  - to increase separation
  - 16 mm high lips
- 6-lip spiral rollers
  - For small potatoes in combination with steel clod rollers
  - 12 mm high lips





**MultiSep** 

Grimme Innovation

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# E.50 Automatic levelling of RS / 2nd MultiSep





Automatic levelling for MultiSep or Roller Separator (E.20.150)

2nd MultiSep unit following 1st MultiSep or Roller Separator, includes automatic levelling, and separate hydraulic height and distance adjustment of the plain rollers (E.50.180)



## E.50 Transfer web

- Rubber covered transfer webs for the transfer from the separator onto the fine haulm elevator
  - For more crop protection





#### **E.50 Fine haulm elevator**



- Hydraulically driven speed adjustable
- Hydraulic levelling adjustment
- Automatic transfer web length adaption
- Robust separator for easy to medium harvest conditions with little haulm
- Pitch: 28, 32, 40, 45 or 50 mm
- Fine-haulm transfer elevator web pitch:
  35 mm vulcanised
- Scraper roller in fine haulm elevator hydraulically reversible
- 1 long and 1 short transfer web from fine haulm elevator into the ring elevator
- Without fine haulm elevator (E.50.220)



# E.50 N - Separator (hedgehog web)



- Hydraulically driven N-separator (E.50.410)
  - 1,100 mm wide
  - Pitch: 28, 32, 40, 45 or 50 mm
  - For additional trash separation
  - Levelling and speed adjustment via control terminal.



# E. 60 Ring elevator



- Hydraulically driven
- high delivery capacity with minimal damage through:
  - deep pocket form, 30 % larger than the conventional elevator
  - precisely guided diversion
  - active side parts
- 1200 mm wide
- Automatic increase of speed
- Warning system in case of overfill

Eccentric agitator in Ring elevator (E.60.020)

 To losen the crop from the elevator web, for extremely sticky soils



# E.60 OptiBag



- PU high capacity, perforated, elevator (OptiBag) (E.60.005)
  - Increased output and additional sieving
  - High volume, web-like transfer pockets
  - High-yield and long lasting elastic polyurethane (PU)
  - sieving of remaining soil
  - Air-cushioned top edge





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# E.60 Moving floor bunker

- Capacity approx. 7 t
- Filling automatic for optimized bunker filling
- Selectable type of bunker unloading web (metal or canvas)
- Bunker with "one-piece" unloading elevator (1)
  - After the process of unloading the moving floor reverses in a gentle and crop protecting way
  - Optimum utilization of bunker capacity





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# E.60 Bunker - unloading

- Bunker head lowering in 3 steps (Optimum adaptation to varying heights of trailers)
- Filling of trailers with very low drop steps (elevator can be lowered deep into the trailer)
- Maximum transfer height 4,20 m
- Well visible bunker unloading action (unloading whilst digging for increased output)







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# E.60 Bunker





- Lubricating installation for bunker chain (E.60.820)
  - For easy pulling of the bunker chain

- Automatic bunker filling
  - For optimal filling of the bunker
  - Over two ultra-sonic sensors





#### E.70 Chassis - overview



Front axle with wheels 2 x 300/95 R52, lateral offset +/- 300 mm



Hydrostatic wheel drive of the front wheels and rear rubber tracks with automatic traction control



Rear axle with rubber tracks 2 x 780 mm, 14° steering angle



Hydraulic lateral levelling



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## E.70 Rear axle

- Automatic axle self-centre steering (standard)
  - faster shunting on the headland
  - Less damage to the neighbouring rows (e.g. when opening a field)
- Automatic levelling (standard)
  - For a gentle maximisation of capacity on webs and separators
  - Required on slopes
- Rubber track stone protection (E.70.540)





# E.70 Auto pilot



Auto pilot (E.70.130)

- Front axle steering controls the position of the intake to the ridge
- More exact driving less damage
- Reduction of strain on the driver
- Allows the permanent optimum adjustment of separators and other important machine functions



# **E.80 Operational functions**





- Great visible intake unit
- Well visible operator elements
- Cabin with heating system and air-suspended seat.
- Operator elements
  - Chassis and motor control via CCI-200 operator terminal
  - Digging setting via CCI-200 operator terminal
- Monitoring
  - 1 colour monitor with rear view camera incl.
    Visual Protect (shifting between the view of several cameras)
  - Load conditions of the machine are transmitted via CAN-Bus to select a specific camera view in the machine. This enables the driver to react earlier.
  - 10 working lights mounted on the cabin (standard)



# **E.80 Clean-Control**





- Saving of 15 different machine settings (possible to save 30 parameters)
- Downloadable anytime during digging operation
  - Fast reaction to varying soil conditions
- Use of the DataBus-system
- Quick setting of the machine according to harvest conditions
- Time saving
- Less potato damage



47 2012



## E.80 Video control

- Video packet 1 (E.80.200)
  - 3 extra cameras to control the digging unit
- Video packet 2 (includes video package 1) (E.80.210)
  - 2nd colour monitor, 5 extra cameras to control the digging units and 2 extra cameras to control the unloading section





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# E. 80 Automatic greasing system



Automatic greasing system (E.80.810)

- Simplified maintenance
- Constant automatic greasing increases
  durability



# L.90 Lights / miscellaneous



Mercedes-Benz diesel engine

- OM460 (360 kW / 490 HP) using SCR exhaust technology (AdBlue)
- Reduced fuel consumption by revolution regulation to 1600 rpm
- Fully electronic motor operation
- 900 I diesel tank



# L.90 Lights / Miscellaneous



4 cab-mounted working Xenon lights (E.90.110)

 Biological hydraulic oil (Total Bio Hydran SE 46) (E.90.310)

