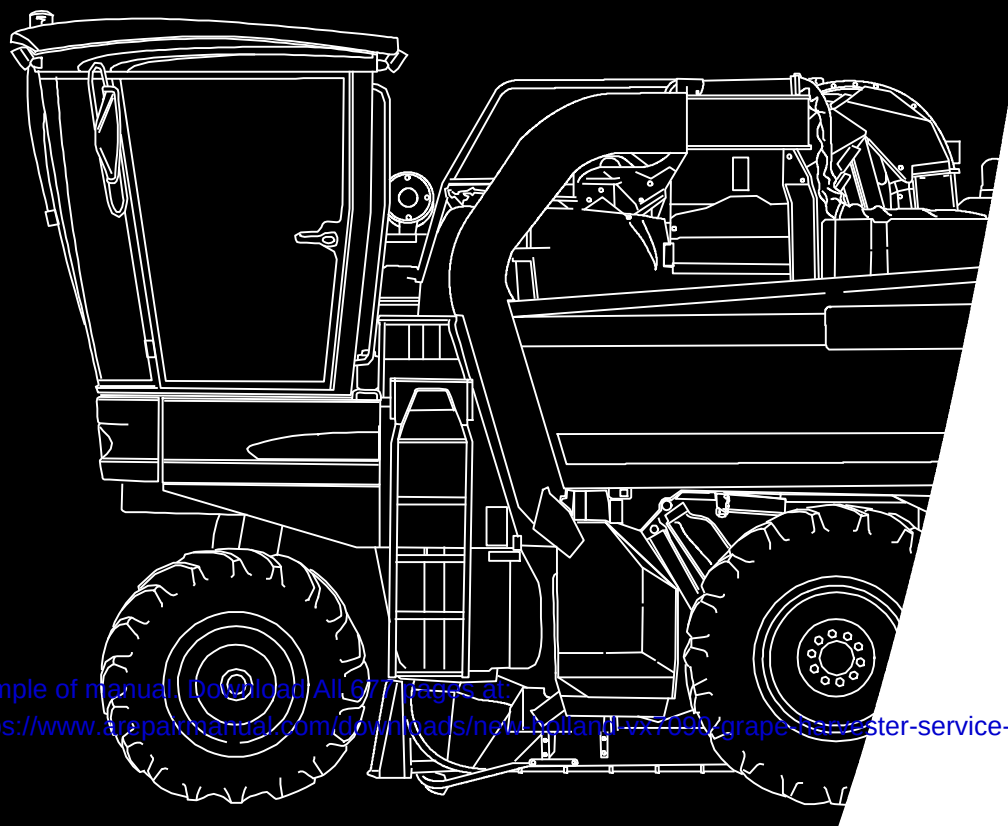
SERVICE MAN UAL

VX7090
Grape Harvester

Print No. 84404824B

REPAIR MANUAL

NEW HOLLAND
VX7090



NEW HOLLAND

Previous name	New name
Up to series 006	Starting from series 007
VX 680	**VX 7090**
One cab with roll-over-protection structure ”ROPS” will be installed starting from series 014	

REPAIR MANUAL

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NOTE: *this manual contains the description of VX models starting from the first series.*

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SPECIFICATIONS

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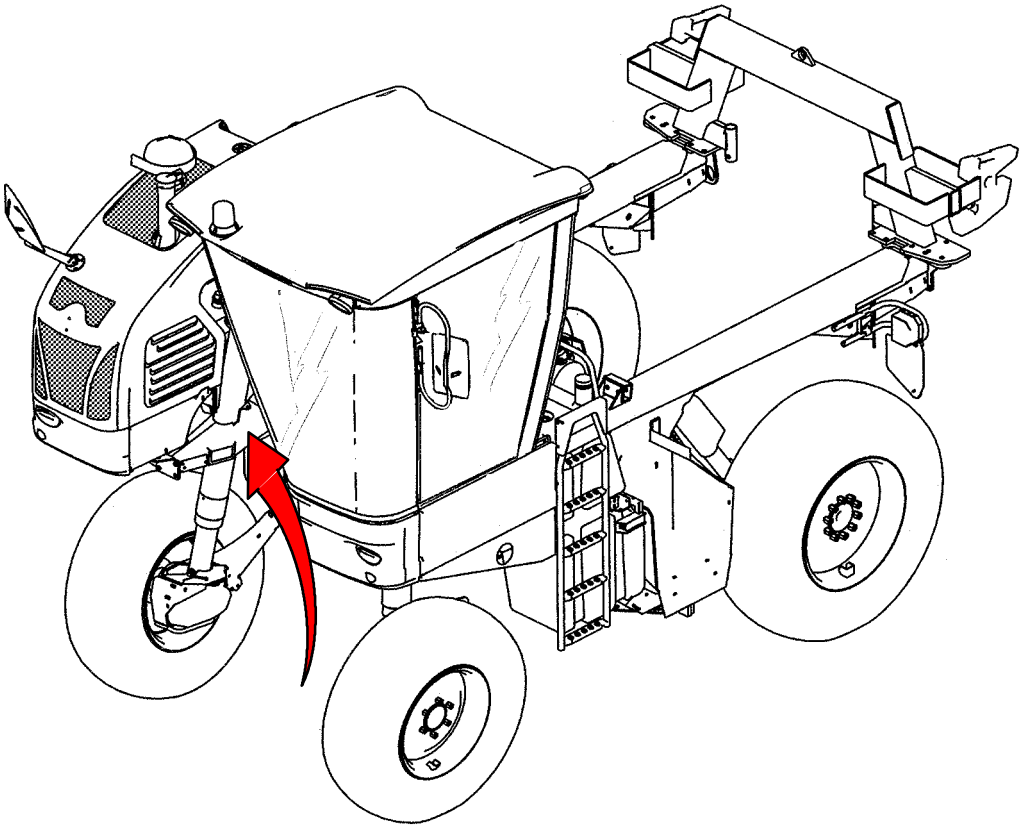
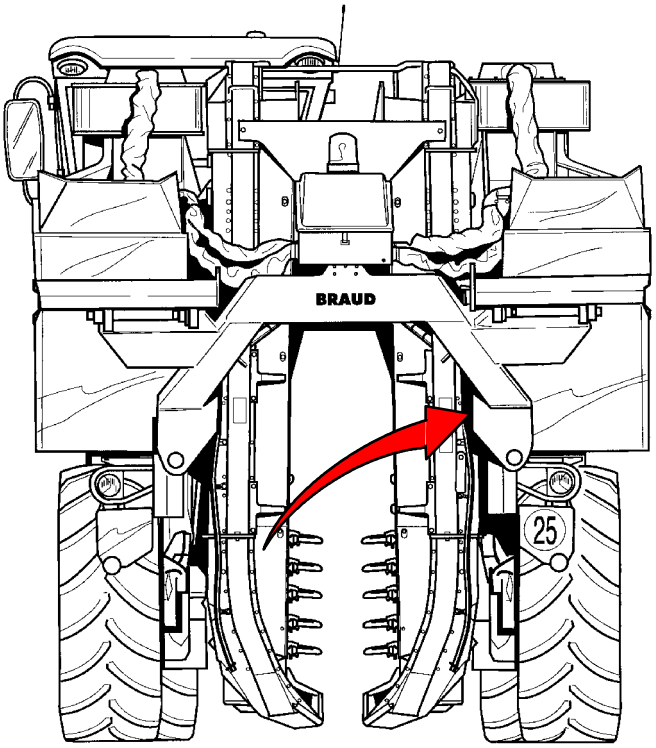



BRAUD
25

MACHINE IDENTIFICATION DATA

Model	Type	Serial no.	Machine number
VX 680	665	001	001
Harvesting equipment	666	001	001
Harvesting equipment starting from series 002	665	002	001
VX 7090 Self-propelled and harvesting equipment	665	007	001

NOTE:*the harvesting equipment number is the same as the self-propelled machine one starting from series 003.*

New numbering starting from the installation of cabs with roll-over-protection structure "ROPS", series 014

H A G	00	665	E	00	014	001
COEX code	Free = 00	Type	Code letter	Free	Series	Number

A = Manufacturer's label

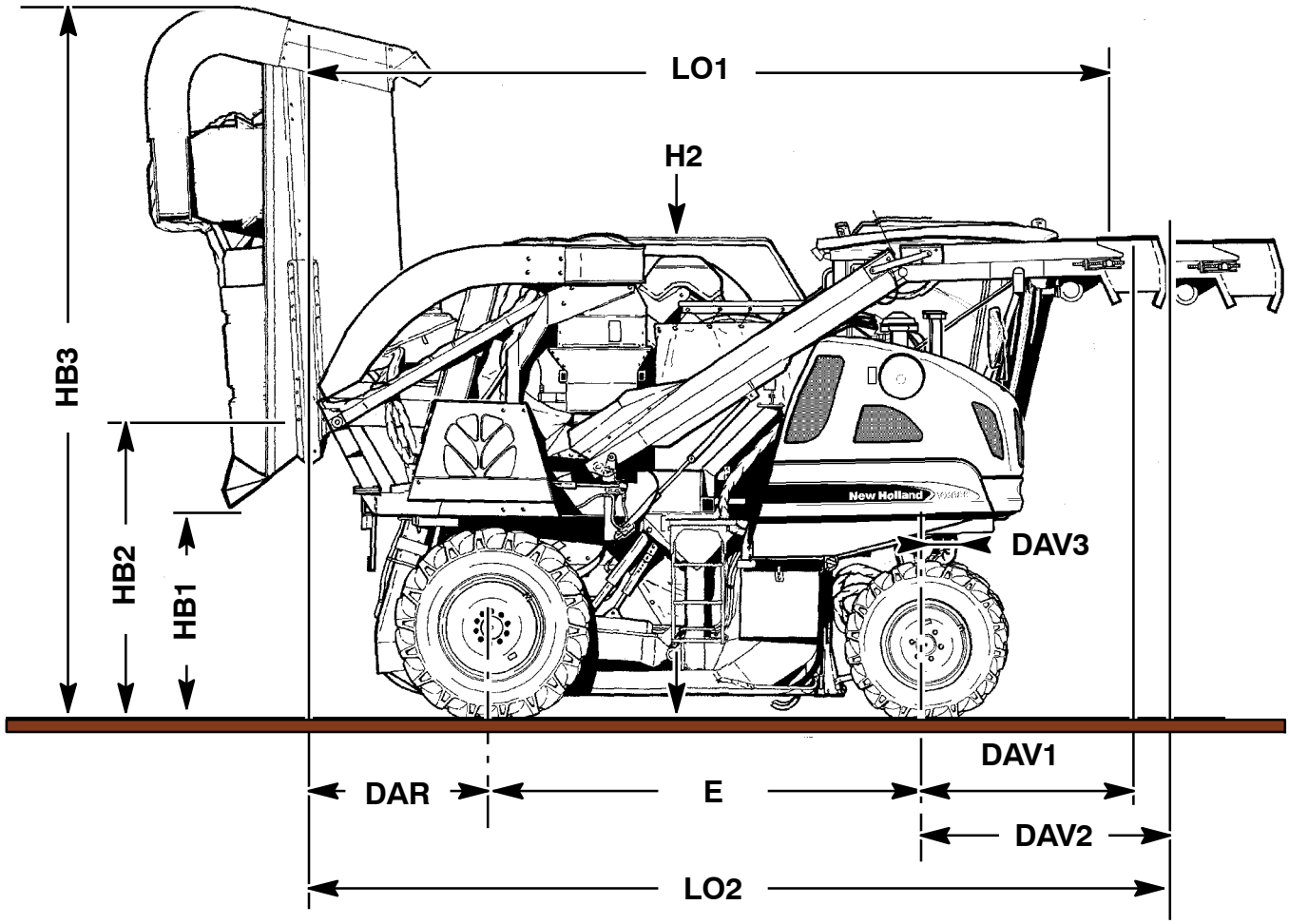
B = Printed frame number

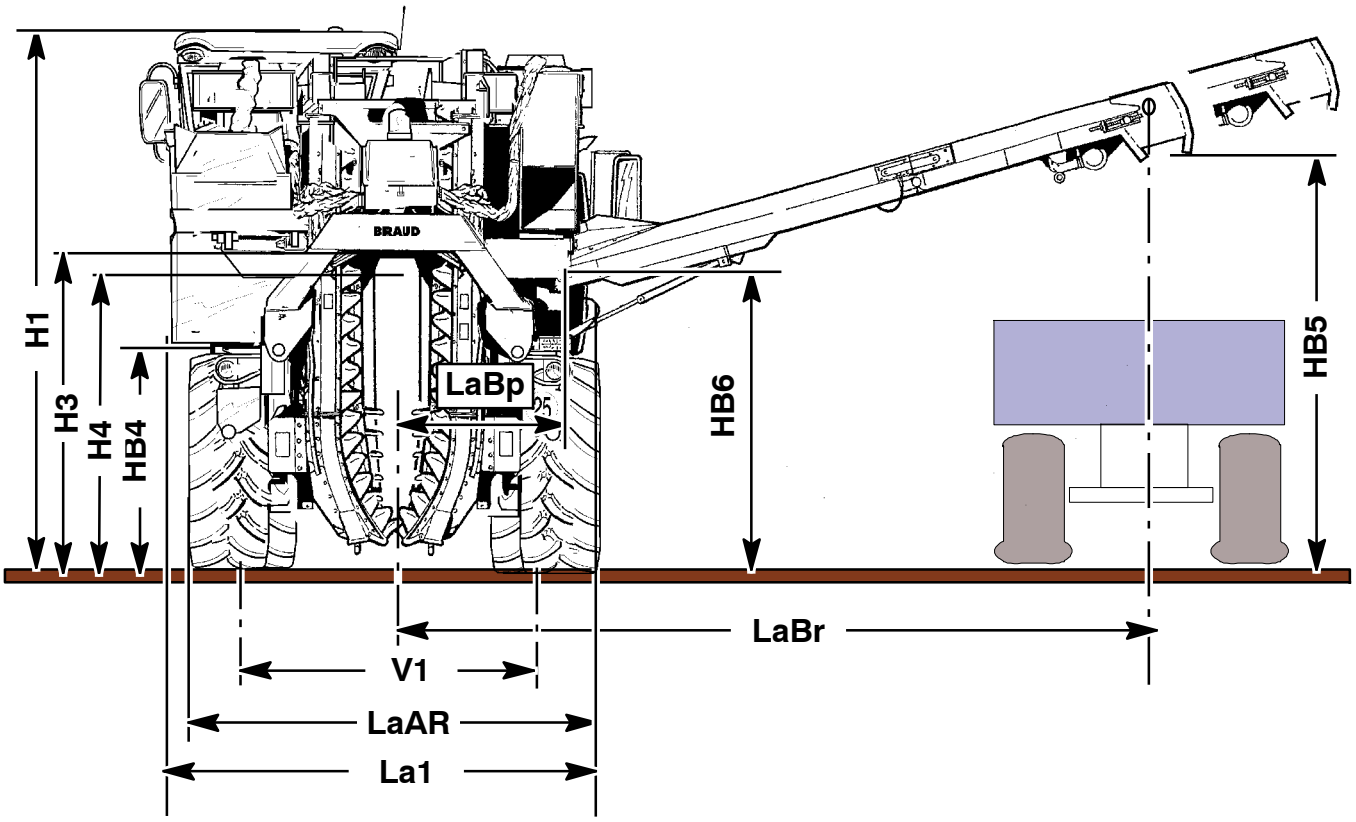
OPERATORS MANUAL

Reference VX OLIVES	Reference VX 7090
84369870 (F)	84234146 (I)
84383525 (GB)	84234147 (GB)
84369872 (SP)	84234148 (F)
84369874 (PO)	84234149 (SP)
	84234150 (PO)

REPAIR MANUAL

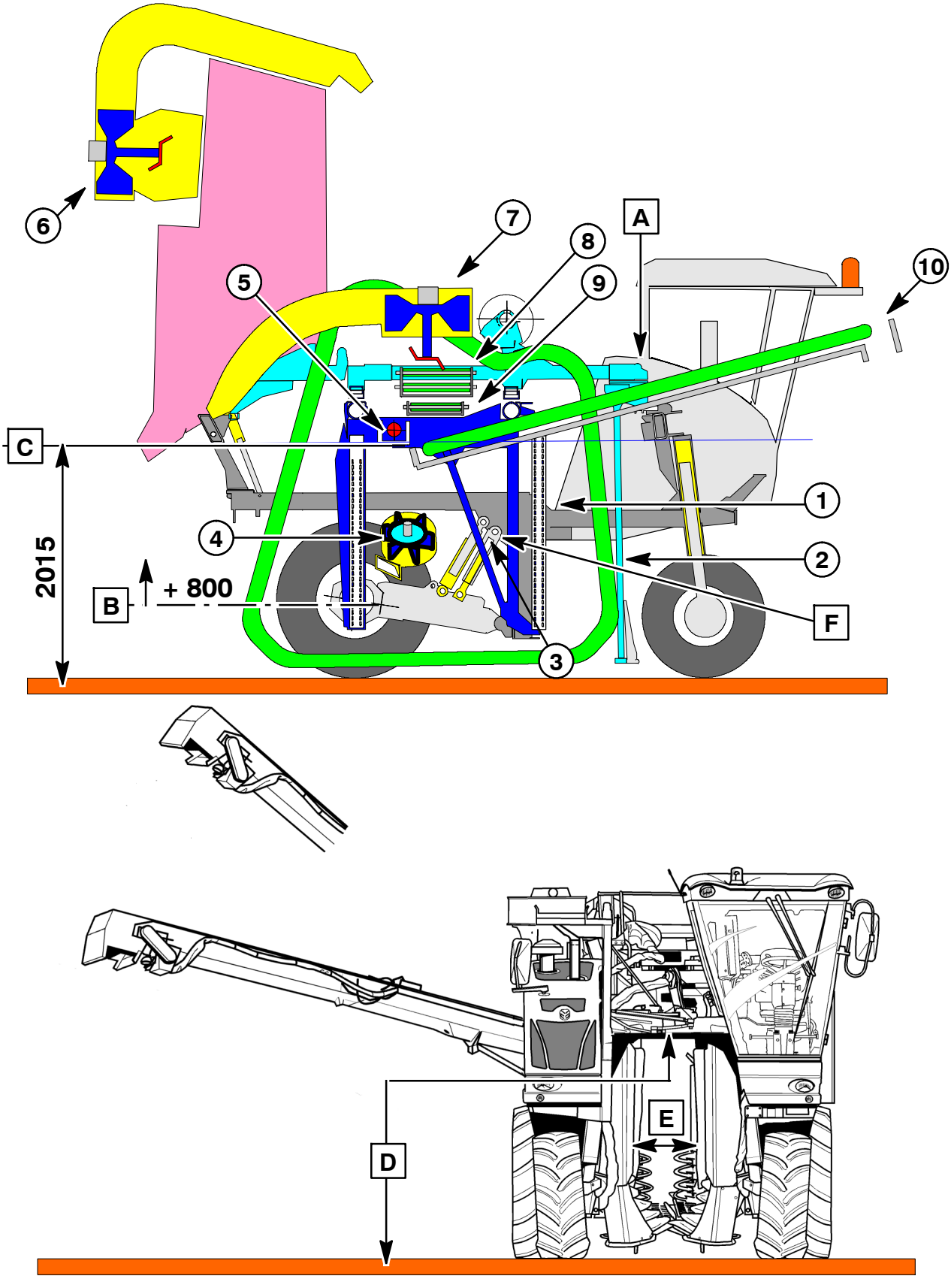
French: 84404823, English: 84404824, Italian: 84404825, Spanish: 84404826


LO1
H2
HB3
HB2
HB1
DAV3
DAV1
DAR
E
DAV2
LO2


BRAUD
H1
H3
H4
HB4
LaBp
HB6
HB5
LaBr
V1
LaAR
La1

COMMERCIAL DESCRIPTION			VX7090 (1)
Code	**DIMENSIONS (mm)**		
H1	Height: harvesting equipment on the ground	with cab	3635
H2	Harvesting equipment height (2)	to the railings	3470
H3	Clearance under rear beam	Min. Max.	2015 2815
H4	Harvesting equipment clearance under tunnel	Min. Max.	2015 2815
HB1	Clearance under tilted up hoppers		1660
HB2	Tilting axle height		2080
HB3	Max. height with lifted hopper		5270
HB4	Clearance under the frame	1550-litre hopper	1375
HB5	Height to the roller axis of the emptying link Machine on ground 5200 mm 4200 mm		 from 1325 to 5450 from 1325 to 4010
HB6	Link pivot height		1850
LaBp	Link pivot position		1113
LaBr	Position of the roller on the link end perpendicular to the machine axis 5200 mm 4200 mm		 from 5100 to 6350 from 4210 to 5350
La1	Max. width 1550-litre hopper and emptying link in road position		 3140
La AR	Outer width at the rear wheels (V1 + Gb = La AR)	 Tyres 480 / 70 R 28 Tyres 600 / 55 x 30.5	 2425 + 495 = 2920 2530 + 600 = 3130
La AV	Outer width at the front wheel level on ground (V2 + Gb = La AV) (V2 at ground level)	 Tyres 420/70 R 24	 2130 + 430 = 2560
E	Pitch		3180
Lo 1 Lo 2	Overall length	at the cab front on the link end 4200 on the link end 5200	5840 6540 7540
DAV1 DAV2	Front offset	at the cab front on the link end 4200 on the link end 5200	1050 1750 2750
DAV3	Tool fixing offset		280
DAR	Rear offset		1610

- (1) VX7090 version with hopper and emptying link
- (2) noria on the ground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2015
B
+ 800
F
3
D
E

EMPTYING CONVEYOR ON THE RIGHT SIDE AND LEFT HOPPER
Low machine

A Central cross beam of the harvesting equipment with 200-mm rise
B Sloping correction 800 mm
C Sliding shaking transmission to get a clearance by 2015 mm under the cover, with harvesting equipment in low position
D Clearance height under the frame beam,
min. 2015 mm
max. 2815 mm
E Clearance width
at the vegetation entrance 700 mm
F No limit retainer

1 Shaking frame

- shaking plates
for removable shakers
- 24 shakers,
22 straight connecting rods
2 elbow connecting rods
- 240-mm extension

2 Norias

- 67 large buckets
- pass to stake-guides
from 195 to 400 mm

3 Lifting retainer

- on one side

4 Lower extractors

- dia. 430 mm
- independent stalk choppers, released in washing position

5 Shaking drive

- sliding drive in the centre of the longitudinal members (at the bottom)

6 Left hopper

- capacity 1550 litres
- extractor dia. 638 mm equipped with removable stalk chopper
- leaf evacuation slide, placed on the side

7 Emptying conveyor extractors

- extractor dia. 638 mm equipped with removable stalk chopper
- leaf evacuation slide, placed at the back

8 Harvesting conveyors

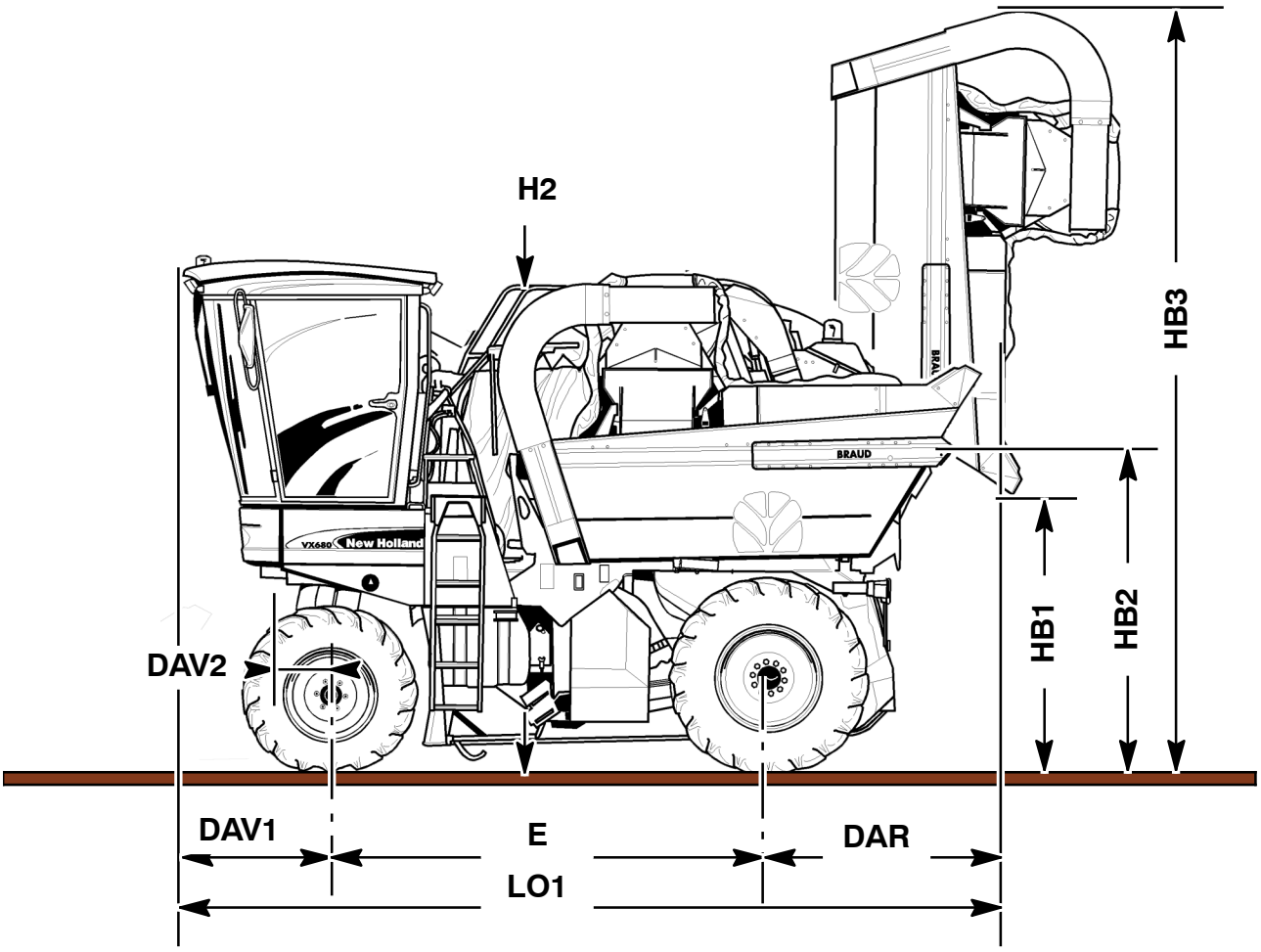
- width 600 mm

9 Transfer conveyor

- width 450 mm

10 Side emptying conveyor

- width 350 mm
- length 4200 or 5200 mm depending on the version
(only the end length changes)


H2
HB3
HB1
HB2
DAV2
DAV1
E
DAR
LO1
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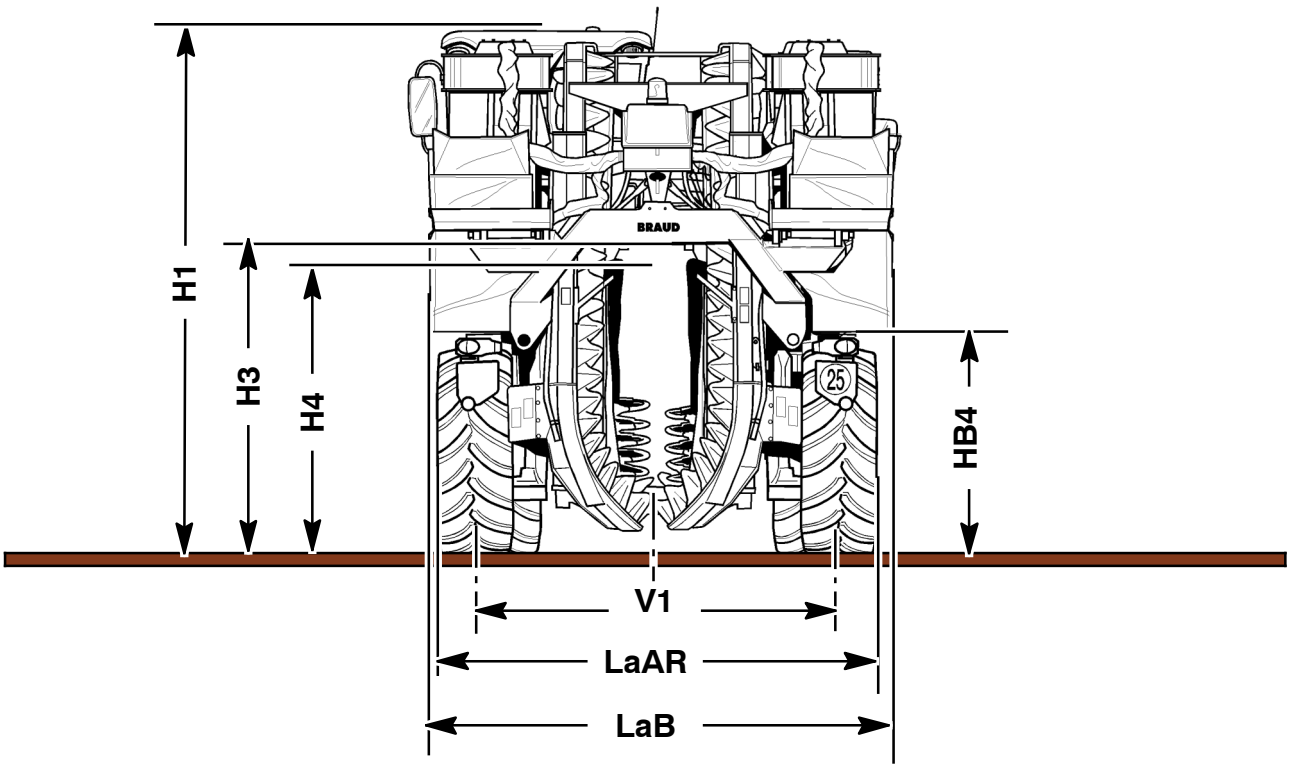
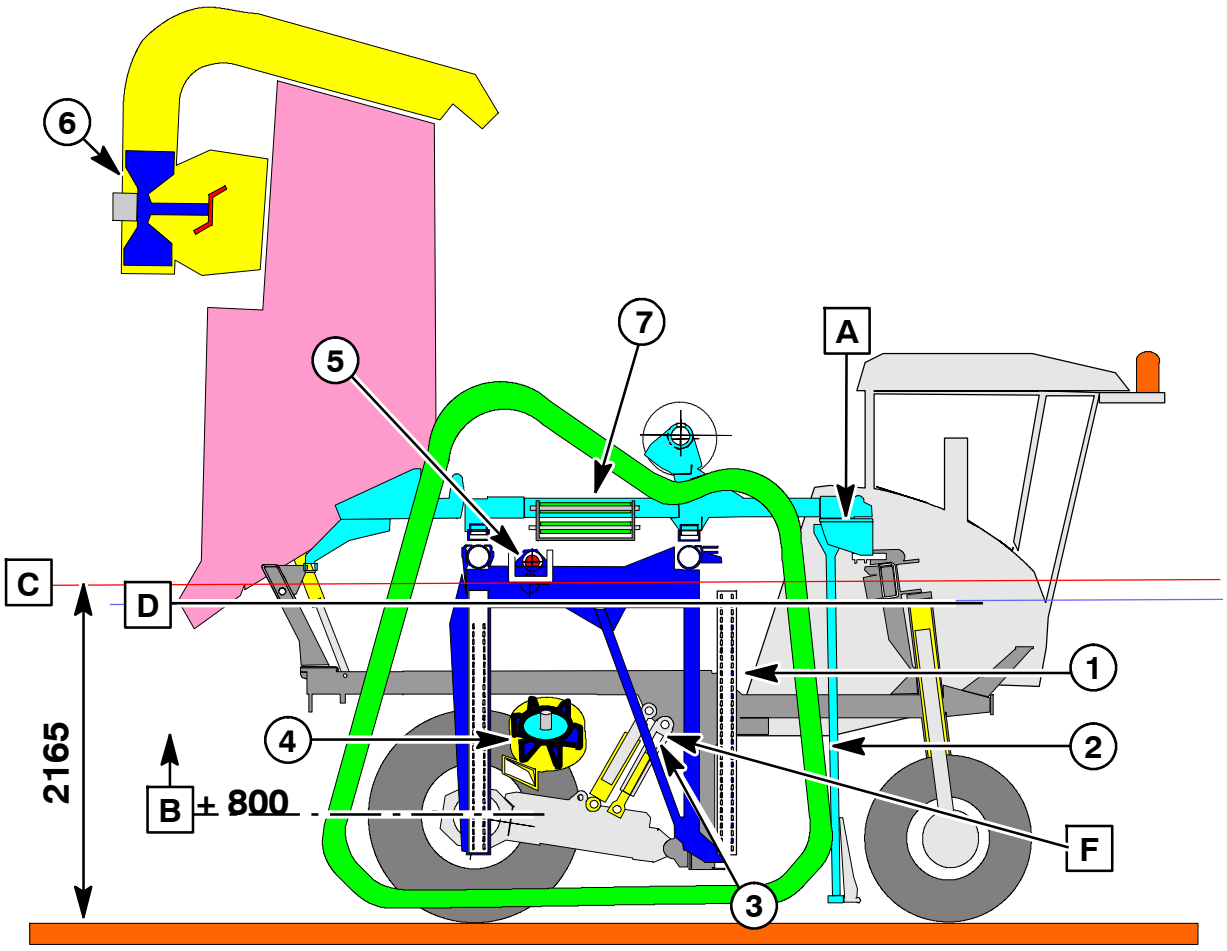
VX680
New Holland


H1
H3
H4
HB4
V1
LaAR
LaB
BRAUD
25

COMMERCIAL DESCRIPTION			VX7090 (2)	VX7090 (3)
Self-propelled machine				
Code	**DIMENSIONS (mm)**			
	Height:			
H1	(lowered harvesting equipment)	with cab	3635	3770
H2	Harvesting equipment height (with noria on the ground)	to the railings	3470	3470
H3	Clearance under the harvesting equipment beam	Min. Max.	2015 2815	2215 2815
H4	Clearance under harvesting equipment tunnel	Min. Max.	2165 2965	2265 2865
HB1	Clearance under tilted up hoppers		1860	2080
HB2	Tilting axle height		2080	2310
HB3	Max. height with lifted hopper		5270	5500
HB4	Clearance under the frame	1550-litre hopper	1375	1600
LaB	Max. width of 2x1550 litres hoppers		3220	
La AR	Outer width at the rear wheels (V1 + Gb = La AR)	 Tyres 480 / 70 R 28 Tyres 600 / 55 x 30.5	 2425 + 495 = 2920 2530 + 600 = 3130	
La AV	Outer width at the front wheel level on ground (V2 + Gb = La AV) (V2 at ground level)	 Tyres 420/70 R 24	 2130 + 430 = 2560	
E	Pitch		3180	
Lo 1	Overall length	at the cab front	5840	
DAV1	Front offset	at the cab front	1050	
DAV2	Tool fixing offset		280	
DAR	Rear offset		1610	

- (2) VX7090 low version, with two hoppers, axle clearance 2.00 m
- (3) VX7090 high version, with two hoppers, axle clearance 2.20 m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± 800
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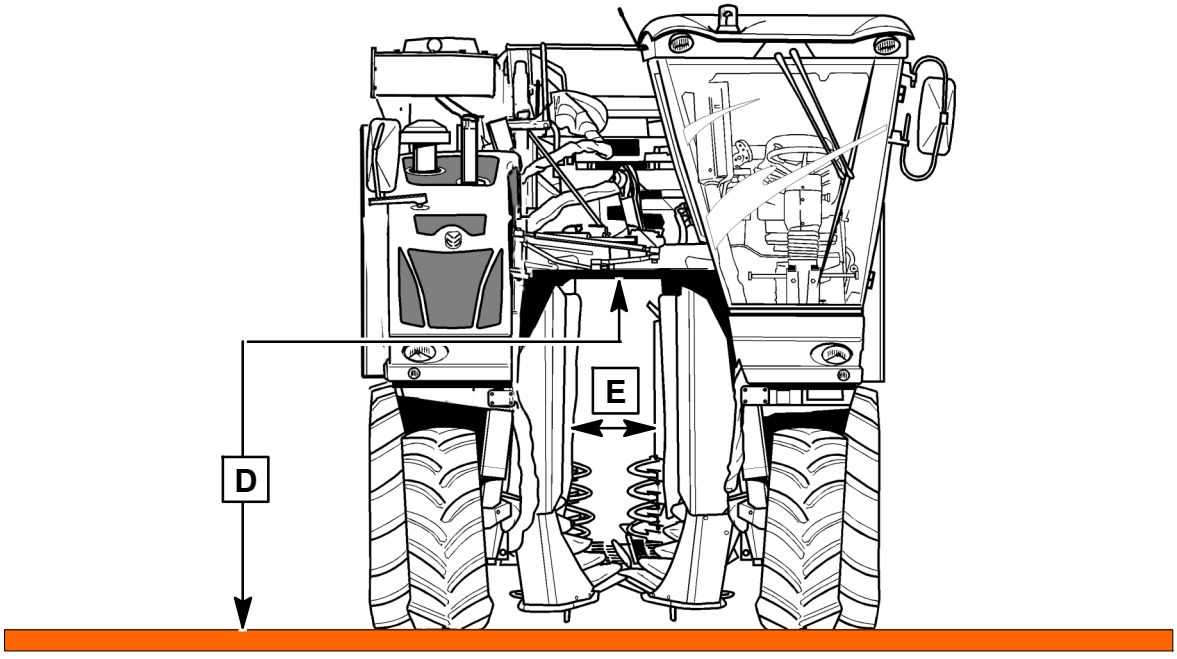

E
D

VX7090 WITH TWO HOPPERS, LOW VERSION
AXLE CLEARANCE 2.00 m

A Central cross beam of the harvesting equipment with 200-mm rise
B Sloping correction 800 mm
C Sliding shaking transmission to get a clearance by 2165 mm under the cover, with harvesting equipment in low position
D Max. clearance height limited by the frame front beam and by the rear cross-piece at
min. 2015 mm
max. 2815 mm
E Clearance width
at the vegetation entrance 700 mm
F No limit retainer

1 Shaking frame

- shaking plates
  for removable shakers
- 24 shakers,
  22 straight connecting rods
  2 elbow connecting rods
- 240-mm extension

2 Norias

- 67 large buckets
- pass to stake-guides
  from 195 to 400 mm

3 Lifting retainer

- on one side

4 Lower extractors

- dia. 430 mm
- independent stalk choppers, released in washing position

5 Shaking drive

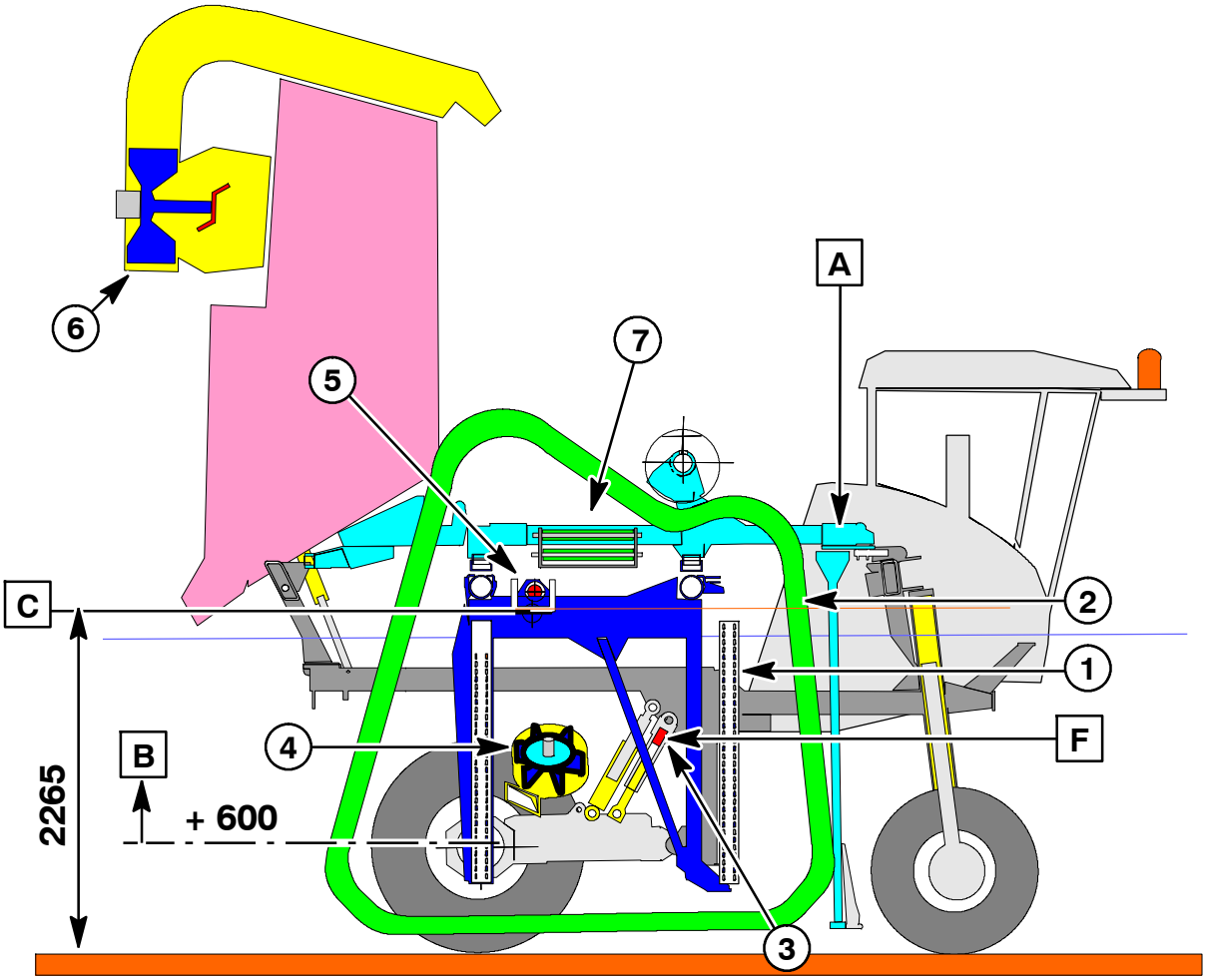
- sliding drive placed over the longitudinal members (at the top)

6 Right and left hoppers

- capacity 1550 litres
- extractor dia. 460 mm equipped with removable stalk chopper
- leaf evacuation slide, placed on the side

7 Harvesting conveyors

- width 600 mm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2
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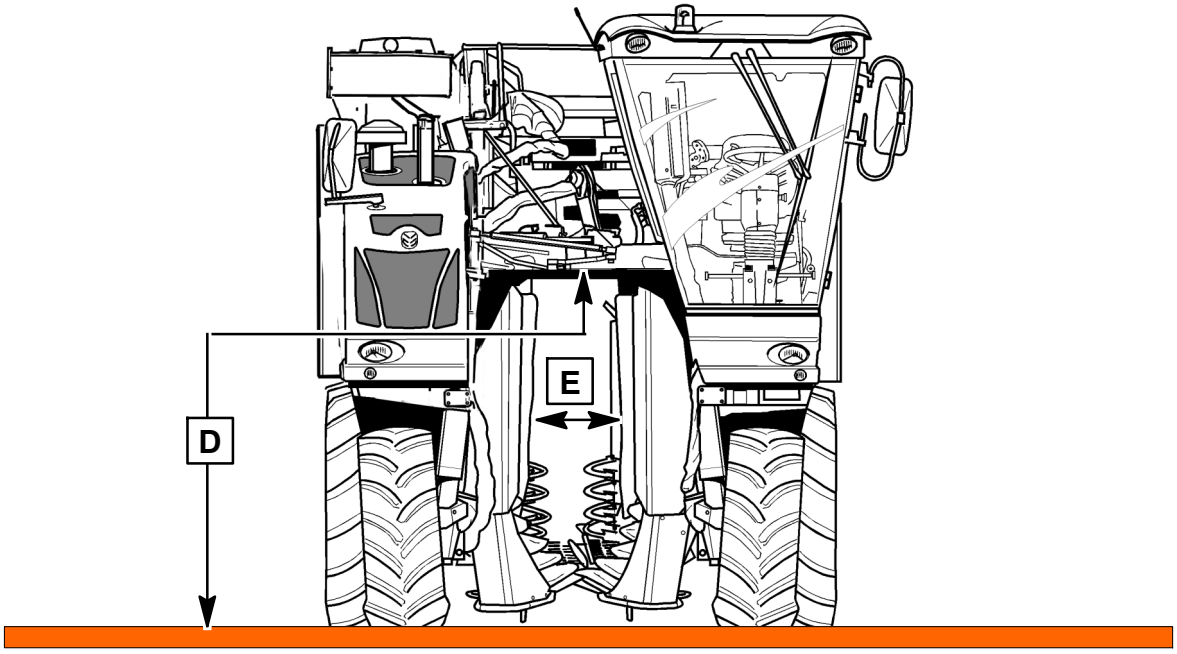
4
F
2265
+ 600
3


E
D

VX7090 WITH TWO HOPPERS, HIGH VERSION
AXLE CLEARANCE 2.20 m

A No rise to lift the self-propelled machine by 200 mm

B Sloping correction 600 mm

C Sliding shaking transmission to get a clearance by 2265 mm under the cover, with harvesting equipment in low position

D Max. clearance height limited by the frame front beam and by the rear cross-piece at
min. 2215 mm
max. 2815 mm

E Clearance width
at the vegetation entrance 700 mm

F Retainer, 100 mm, to increase the frame height by 200 mm

1 Shaking frame

- shaking plates,
  1) standard (compulsory for olives) 34 openings, useful height 1650 mm,
  2) optimized for removable shaking
- 24 shakers,
  22 straight connecting rods
  2 elbow connecting rods
- 240-mm extension

2 Norias

- 67 large buckets
- pass to stake-guides
  from 195 to 400 mm
- clearance (E) in the entry sheets,
  700 mm

3 Lifting retainer

- on two sides

4 Lower extractors

- Diameter 430 mm
- independent stalk choppers, released in washing position

5 Shaking drive

- sliding drive placed over the longitudinal members (at the top)

6 Right and left hoppers

- capacity 1550 litres
- extractor dia. 460 mm equipped with removable stalk chopper
- leaf evacuation slide, placed on the side

7 Harvesting conveyors

- width 600 mm

COMMERCIAL DESCRIPTION		VX7090
WEIGHTS		
PTAC - Total allowed weight under load (kg)		11000
Partition	Front axle (kg)	4800
	Rear axle (kg)	6400
Empty weight with harvesting equipment and without (with) destemmers	Total	from 10040 to 10600
Weight of one wheel (kg)	420/70 R 24 480/70 R 28 600/55 x 30.5	
Thermal engine weight (kg)		
FEEDING / EXHAUST		
Fuel tank	Used fuel	Diesel fuel
	Capacity (litres)	250
Engine feeding system		Direct injection
Air filter	Make	DONALDSON
	Type	ELB 12-0265
Engine cooling	Water capacity (litres)	20
	Fan	sucking (2 speeds or 1 speed, depending on the series)
Cooling fan ∅ (mm)		610
DRIVE		
Pump for engine fan	Make	SAUER
	Displacement (cm^3/rev.)	17
	Empty operating speed (rpm)	2325 (93% of engine speed)
	Capacity (l/minute), output 0.9	35
Fan motor	Make	SAUER
	Displacement (cm^3/rev.)	12,2
Variable displacement inching hydraulic pump	Make	REXROTH
	Type	A4VG
	Total displacement (cm^3/rev.)	from 0 to 105

COMMERCIAL DESCRIPTION		VX7090
DRIVE (follows)		
Priming pump	Displacement (cm^3/rev.)	25
	Capacity (l/minute), output 0.9 Speed 2500 rpm	56.25
Front wheel motor	Make	POCLAIN
	Type	MS 08
	Displacement (cm^3/rev.)	1043
Rear wheel motor	Make	POCLAIN
	Type	MSE 18
	Displacement (cm^3/rev.)	2636 (1406/1230)
Max. speed (km/h) in road position		25 km/h
Max. speed in field position		12
Hydraulic oil		
Capacity (litres)	Total	
	Reservoir	65
Oil type		NEW HOLLAND: Hydrosystem 68 or Hydrosystem 68 BIO S
Conveyor and extractor pump	Make	REXROTH
	Displacement (cm^3/rev.)	”Load sensing” from 0 to 45
	Idle operating rpm speed	2500 (see engine speed)
	Capacity (l/minute), output 0.9	101.2
Shaking pump	Make	SAUER
	Displacement (cm^3/rev.)	22 or 25
	Idle operating rpm speed	2500 (see engine speed)
	Capacity (l/minute), output 0.9	50 or 56
Pump for steering/lifting/hoppers	Make	SAUER
	Displacement (cm^3/rev.)	14
	Idle operating rpm speed	2325 (93% of engine speed)
	Capacity (l/minute), output 0.9	29
STEERING		**Hydrostatic**
Type		EATON QAMP 146 cm^3/rev.
BRAKING SYSTEM		
Service brake		Supplied by the hydrostatic transmission
Service brake (on one rear wheel)		Operated by one pedal and by the steering
Park brake		Operated by left manual lever

COMMERCIAL DESCRIPTION		VX7090
TILTING CORRECTION		30%
PLATFORM CAB		
Heated and A/C cab		
Activated charcoal filter		Optional
Board computer		●
Pneumatic seat		●
Multifunction lever		●
LIGHTING AND WARNING LIGHTS		
High/low beams		2
Front parking lights		2
Rear parking lights		2
Direction indicator	Front	2
lights	Rear	2
	Side	2
Stop lights		2
License plate light		1
Reflector	Rear	2
Revolving beacon	with cab	2
Supply voltage / battery		12 V / 180 Ah
Alternator		120 A

COMMERCIAL DESCRIPTION		VX7090
HARVESTING EQUIPMENT		
HARVESTING HEADER		
Type		Swinging, self-aligning
Width extending system (mm)		SDC shaking 240
Number of shakers		24
Straight/elbow connecting rod		22/2
Shaking start	Motor manufacturer	SAUER
	Displacement (cm^3/rev.)	22.8 or 59 *
	Control unit ratio:	4/1
	Grease: AMBRA GR75MD	1.2 kg
	by chain	*
Toe-in adjustment		from the ground
Amplitude settings		3
Min. clearance under the frame (mm), depending on the model		from 2015 to 2815
Grape harvesting useful height (mm)		1650
Harvesting tunnel width (mm)		700
Shaking frame width at the front cross-beams (mm)		In front of the mark 0 = 550 (like VL) Fully closed = 510 Fully open = 750
RECEIVING / TRANSPORTATION		
Noria system	Buckets per chain	67
	Type	XXL
	Synchronization	in field speed
Width of flexible stake-guides (mm)		195 to 400
Tightness length (mm)		2400
Harvesting min. height (mm)		150
Operation	Motor manufacturer	EATON
	Displacement (cm^3/rev.)	500
Harvesting conveyors	Width (mm)	600
	Max. operating speed rpm	about 750
	Reverse	yes
Single operation	Motor manufacturer	EATON
	Displacement (cm^3/rev.)	31.6

COMMERCIAL DESCRIPTION		VX7090
CLEANING for equipment with 2 hoppers		
2 upper extractors with removable stalk choppers	Diameter (mm)	460 (2 hoppers) 638 (emptying link)
	Operation	hydraulic
	Motor manufacturer	SAUER
	Displacement (cm^3/rev.)	11
2 lower extractors	Diameter (mm)	430
	Operation	Hydraulic
	Motor manufacturer	SAUER
	Displacement (cm^3/rev.)	6
2 independent stalk choppers, enabled by shaking	Operation	Hydraulic
	Motor manufacturer	EATON
	Displacement (cm^3/rev.)	8,2
	Rotation direction	reverse to the wheels
HOPPERS		
Capacity (litres)		2 x 1550
Electrically-operated distribution auger		Control independent of the grape harvester
EQUIPMENT for side link		
Left bucket	Capacity (litres)	1550
Distribution auger	Hydraulic drive	Control by cross belt direction
	Motor (cm^3)	160
Transfer conveyor	Width (mm) Motor (cm^3)	450 46
Side emptying conveyor	Width (mm) Motor	380 46

SECTION 00 - MAINTENANCE

Chapter 1

CONTENTS

LUBRICANT AND LIQUID CAPACITIES

Item to be supplied	Quantity dm^3 (litres)	Recommended product	Corresponding international classification
Self-propelled machine grease fittings		**AMBRA GR 9** grease	Lithium-calcium based grease, consistency NLGI 2
Harvesting machine grease fittings		Grease **Food type**	24 cartridges re. **62777339**
Noria ECU	1 kg		
Shaking ECU	1.2 kg	Grease **AMBRA GR 75 MD** **NH 720 A**	Re. 661874 molybdenum bisulfide grease, consistency NLGI 2
Engine sump and filter/s 6-cylinder engine	15	Oil **AMBRA MASTERGOLD HSP 15W - 40**	SAE 15W40 NH 330H API CI - 4 CH4 ACEA E3/E5
Reservoir	65	Oil **AMBRA HYDROSYSTEM 68**	ISO 68 DIN 51524 - part 2
Cooling system	20	**AMBRA AGRIFLU (50%) +** clean water (50%)	

NOTE: *the integrated joints of the rear shaking flexible connecting rods do not require greasing.*

THERMAL ENGINE MAINTENANCE

a) After the first 50 hours

- Let the engine run until it reaches the standard operating temperature.
- Replace diesel oil filter cartridge/s.
- Check alternator and compressor belt tension.

  Check engine tightness.

b) Every day, or every 10 hours, check:

- oil level,
- coolant level,
- check the cleaning conditions of the radiator core.

c) Every 400 hours, or before each harvesting season, replace:

- engine oil,
- the oil filter cartridge/s;
- replace diesel oil filter cartridge/s.
- Check the belt tension.
- Check the radiator core cleanliness.
- If the air filter clogging indicator comes on, clean the main cartridge by compressed air, blowing inside out.
  Be careful not to use a pressure over 6 bar; shift the nozzle downwards and hold it at about 3 cm from the paper.

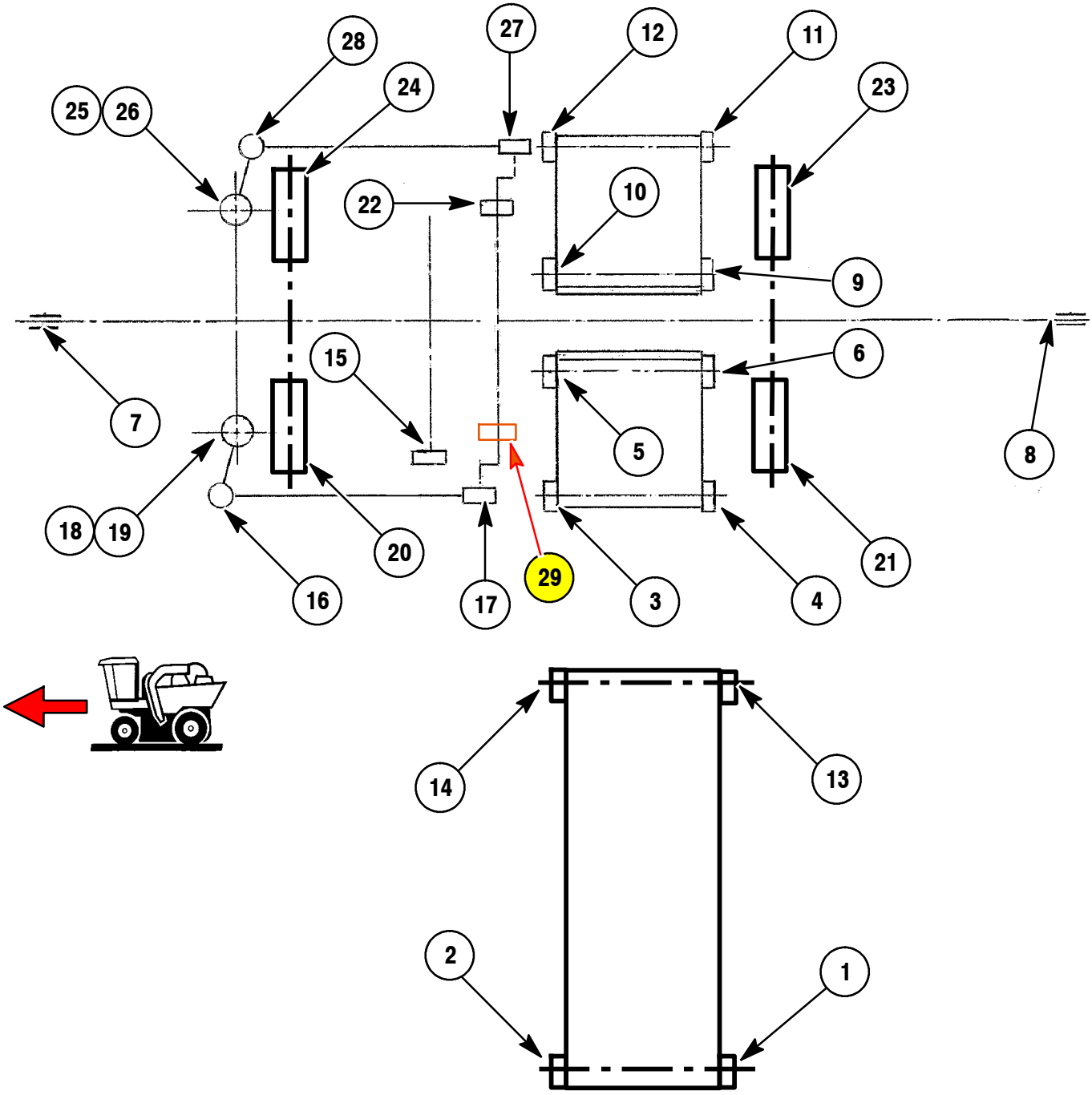
d) Only before each campaign:

- replace the air filter main cartridge.

NOTE: *the diesel oil filter cartridges should be replaced more often if the diesel oil conditions require it.*

e) Every 1200 hours

- adjust the tappets,
- adjust the injector setting.



1 2 3 4 5 6 7 8 9 10 11 12 13 14
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

HARVESTING EQUIPMENT

The greasing ramp is located on the harvesting equipment central gangway. All these points must be greased with food-type grease every day, after washing.

15 Noria control shaft

22 Shaking control shaft

27 - 28 Right shaking control connecting rod

16 - 17 Left shaking control connecting rod

25 - 26 Right shaking plate

18 - 19 Left shaking plate

9 - 10 - 11 - 12 Right harvesting conveyor

3 - 4 - 5 - 6 Left harvesting conveyor

20 - 21 - 23 - 24 Shaking gauge slide

7 - 8 Harvesting equipment pivot

22 Right bearing for noria control shaft

1 - 2 - 13 - 14 Transfer conveyor (depending on the version)

29 Shaking control shaft left bearing (it is installed only in case of chain drive)

The following parts are not localised:

4 grease fittings for the emptying link (depending on the version)

1 grease fitting for the emptying link pivot (depending on the version)

1 grease fitting for the shaking drive

These positions are not localised and should be greased every 50 hours:

- 2 x 2 grease fittings at the hopper cylinder pivots (depending on the model)
- 2 x 1 grease fittings on the lower stalk choppers

TOTAL: from 32 to 40 (depending on the model and on the shaking drive)

SELF-PROPELLED MACHINE

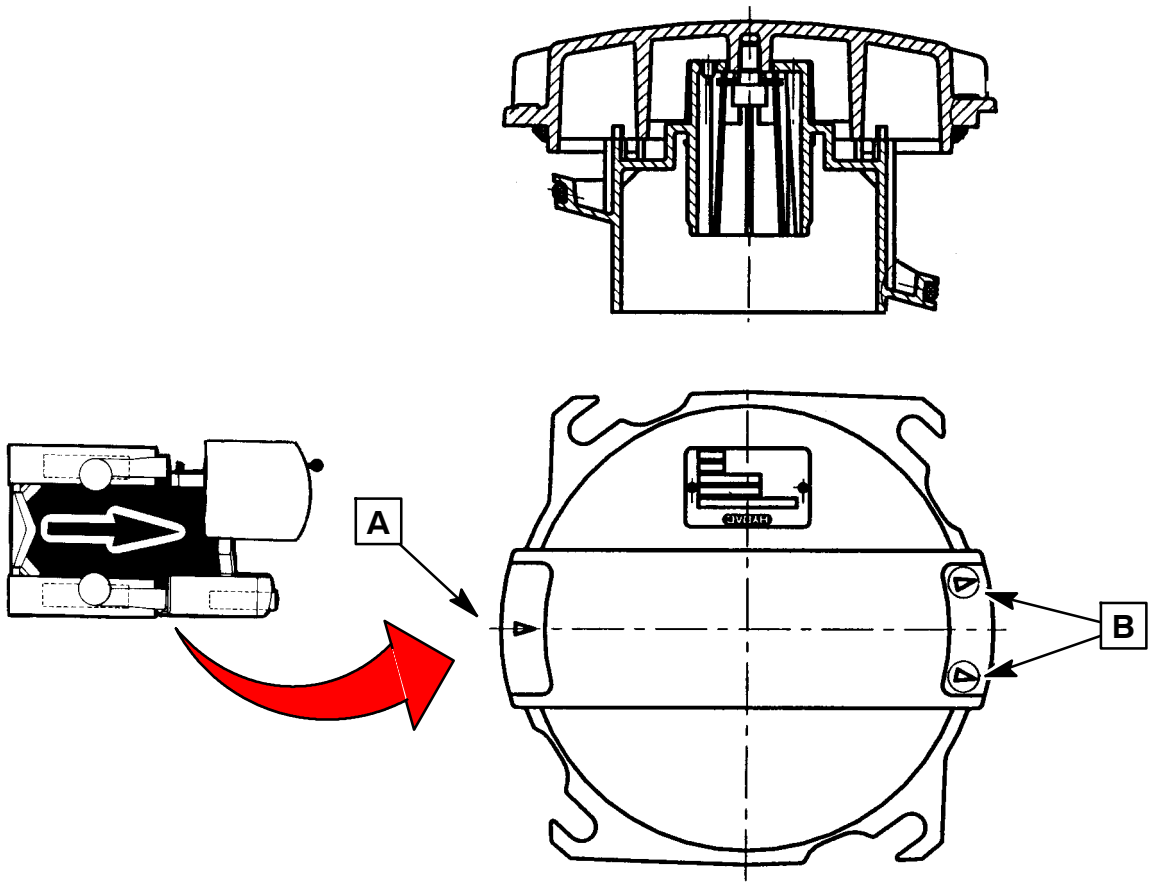
There is no centralized greasing on the self-propelled machine, thus you need to grease daily only the following:

- 2 x 3 grease fittings on the front legs

To grease every 50 hours:

- 2 x 1 grease fitting on the steering cylinder pivot
- 2 x 2 grease fittings on the steering bar pivots
- 1 grease fitting on steering relay
- 2 x 2 grease fittings on the wheel link pivot
- 2 x 2 grease fittings on the rear lifting cylinder

TOTAL: 19



Hydraulic filter cover

During reassembly, **pay attention** to the assembly direction:

- the (A) side with only one arrow on the cover must be directed towards the return line.
- the (B) side with two arrows on the cover must be directed towards the intake lines.

MACHINE WASHING

To avoid sugar deposits and harvesting equipment clogging and to preserve the harvesting quality, the machine must be washed once or more times a day, especially after its utilization.

The tractor unit should be cleaned with the engine at a standstill, but for proper cleaning of the harvester unit it is necessary to operate the norias, conveyors and extractor fans with the machine in a permanent location. **This is anyway a departure from the general safety requirements specified in the Operator's manual.**

This operation requires thus a **special care** and the absolute **compliance** with the following precautions:

- first of all, this operation must be made by a **single operator,** skilled in the control of this machine.
- The machine should be **at a standstill**, inside a suitable washing area, if possible asphalted and levelled, by at least 5x8 m, with a water draining system, complying with the regulations as for environmental preservation.

The washing area should be equipped as follows:

- a hose having a minimum diameter by 35 mm, long enough for cleaning the machine all around;
- a sufficient water flow to get a 2-m water jet, or a motor-pump unit with high capacity, with a water reserve of 3-4 m^3;
- an adjustable nozzle to direct the water jet to about 5 m;
- a ladder about 3.5-m high and a hook about 0.7-m long.

NOTE: *the use of a high pressure cleaning machine is definitely not recommended.*

MACHINE ARRANGEMENT FOR WASHING AT THE END OF THE CAMPAIGN

Before emptying the last hoppers, stop the thermal engine.

- Alight from the driver's seat, gain access to the inside of the harvester and cause any build-up of crop around the shaker plates and on the rear frame to fall into the buckets.
- Move all the machine round and, starting from below, remove all the accumulated dirt or scrap material.
- Climb onto the driver's seat and start up the engine, the extractor fans and the conveyors. Place the norias in the cleaning position. Run the engine for 10 seconds, then empty the hoppers.