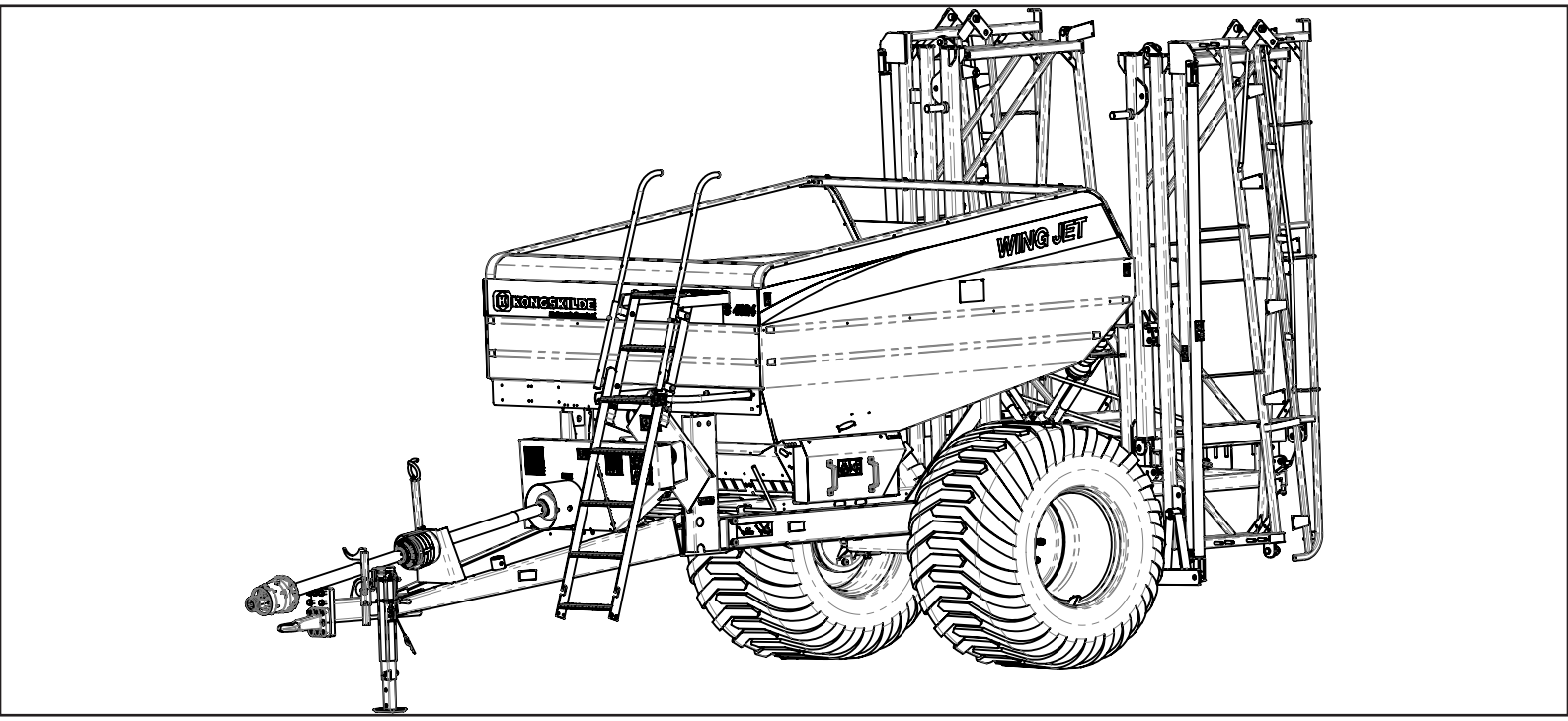
Wing Jet
S 4812-4824 K-PLUS HYDRO



Instruction Manual
"Original Instructions"

EN

Edition:
190108

KONGSKILDE

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Maskine:	La máquina:	Masin:
Maschine:	Maszyna:	Stroj:
Machine:	Машината:	Η μηχανή:
Machine:	Gép:	Máquina:
La macchina:	Stroj:	Il-magna:
Machine:	Mašina:	Mašīna:
Maskin:	Stroj:	
Laite:	Maşina:	

ÖVERUM

Type: Wing Jet
Designation: Applicator
VIN: 301626-320000

- er i overensstemmelse med Maskindirektivets bestemmelser (Direktiv 2006/42/EF) og hvis relevant også bestemmelserne i EMC-direktivet 2014/30/EU.
- In übereinstimmung mit den Bestimmungen der Maschinen-Richtlinie 2006/42/EG und wenn erforderlich auch mit der EMC-Richtlinie 2014/30/EU hergestellt wurde.
- is in conformity with the provisions of the Machinery Directive 2006/42/EC and if relevant also the provisions of the EMC Directive 2014/30/EU.
- est conforme aux dispositions de la Directive relatives aux machines 2006/42/CE et également aux dispositions de la Directive sur la Directive EMC 2014/30/UE.
- é in conformita' con la Direttiva Macchine 2006/42/CE e, se pertinente, anche alla Direttiva alla Direttiva EMC 2014/30/UE.
- in overeenstemming is met de bepalingen van de Machine richtlijn 2006/42/EG en wanneer relevant ook met de bepalingen van de EMC richtlijn 2014/30/EU.
- är i överensstämmelse med Maskindirektivets bestämmelser (Direktiv 2006/42/EG) och om relevant också bestämmelserna i EMC-direktivet 2014/30/EU.
- täyttää Konedirektiivin (Direktiivi 2006/42/EY) määräykset ja oleellisilta osin myös EMC-direktiivin 2014/30/EU.
- es conforme a la Directiva de Maquinaria 2006/42/CE y, si aplica, es conforme también a la Directiva EMC 2014/30/EU.
- pozostaje w zgodzie z warunkami Dyrektywy Maszynowej 2006/42/WE i jeżeli ma to zastosowanie również z warunkami Dyrektywy dot. kompatybilności elektro magnetycznej EMC 2014/30/UE.
- отговаря на изискванията на Директивата за Машините 2006/42/ЕО и ако има приложение на изискванията на Директивата за електромагнитна съвместимост 2014/30/ЕС.
- Megfelel a 2006/42/EK Gépi Eszközökre vonatkozó előírásoknak és amennyiben felhasználásra kerül, a 2014/30/EU Elektromágneses kompatibilitás Irányelv feltételeinek.
- odpovídá základním požadavkům Strojní směrnice 2006/42/ES a jestliže to její uplatnění vyžaduje i s podmínkami Směrnice 2014/30/EU týkající se elektromagnetické kompatibility.
- atitinka Mašinų direktyvos Nr. 2006/42/EB ir, jeigu taikoma, Elektromagnetinio suderinamumo direktyvos Nr. 2014/30/ES reikalavimus.

- je v súlade s podmienkami Smernice 2006/42/ES o strojných zariadeniach a pokiaľ si to jeho uplatnenie vyžaduje aj s podmienkami Smernice 2014/30/EÚ o elektromagnetickej kompatibilite.
- îndeplineşte prevederilor Directivei de Maşini 2006/42/CE şi dacă este utilizată de asemenea cu prevederile Directivei referitoare la compatibilitatea electro-magnetică EMC 2014/30/UE.
- on vastavuses Masinate Direktiivi tingimustega 2006/42/EÜ ning sammuti juhul, kui on tegemist sammuti on vastavuses Elektromagnetilise kokkusobivuse Direktiivitingimustega EMC 2014/30/EL.
- z določili Direktive o strojih 2006/42/ES ter, če je to relevantno, tudi z določili EMC Direktive 2014/30/EU.
- παραμένει σύμφωνη με τους όρους της Οδηγίας περί Μηχανών 2006/42/ΕΚ και σε περίπτωση που αυτό εφαρμόζεται και με τους όρους της Οδηγίας περί ηλεκτρομαγνητικής συμβατότητας (ΗΜΣ) 2014/30/ΕΕ.
- Está de acordo com exigências das Directivas das Maquínarias 2006/42/CE e no caso em que tiver igualmente aplicação com as exigências das Directivas referentes a compatibilidade electromagnética EMC 2014/30/UE.
- tikkonforma mad-dispożizzjonijiet tad-Direttiva dwar il-Makkinarju 2006/42/KE u jekk rilevanti wkoll mad-dispożizzjonijiet tad d-Direttiva EMC 2014/30/EU.
- atbilst mašīnu direktīvai 2006/42/EK, kā arī nepieciešamības gadījumā elektromagnētiskās saderības direktīvai EMC 2014/30/ES.

Zedelgem
Antoon Vermeulen

FOREWORD

DEAR CUSTOMER!

Please read these instructions carefully. If you follow the instructions given, you can expect good results along with a good economic return from your choice of machine.

If carefully operated, adjusted and maintained, the machine will meet all reasonable demands made on it and will give you reliable service in years to come. Should you need further instructions, which are not included in this manual, or require the help of experienced service personnel, we advise you to contact one of our local representatives, which will also have spare parts in stock.

It has always been the ambition of Kongskilde to constantly improve its products.
Consequently, in the interest of product improvement, no specification is final or binding and we reserve the right to alter the design of new machine series and equipment without previous notice.

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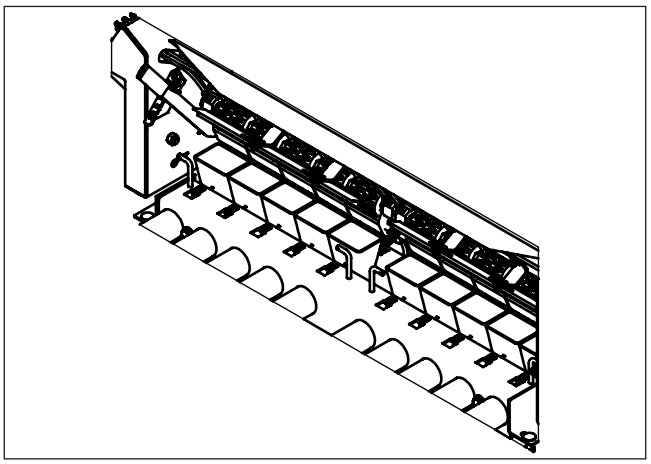
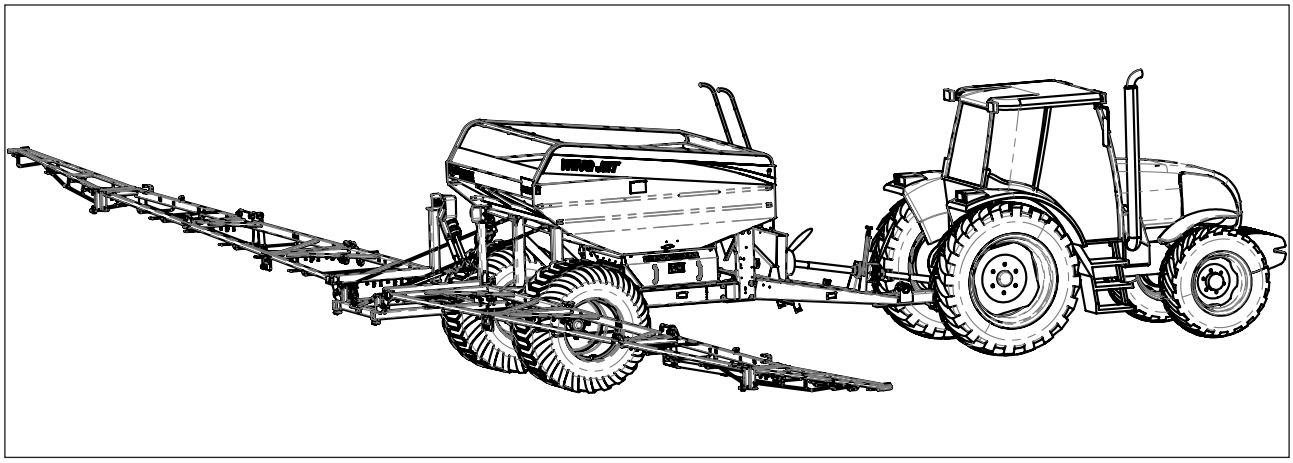
1. INTRODUCTION

DESCRIPTION OF FUNCTION

This machine is designed for transporting, spreading granulated and pilled fertilizers, micro granulates and seed. The metering system is driven via a hydraulic motor.
The output rate of fertilizer can be stepless adjusted from the K-Plus monitor.

The metering is done by “toothed” nylon feed rollers, which rotates in rubber feed gates. From the feed gates the fertilizer falls down into the ejectors where an airstream from the PTO-driven fan takes over and transports the fertilizer through the hoses out to the spreader plates on the boom.





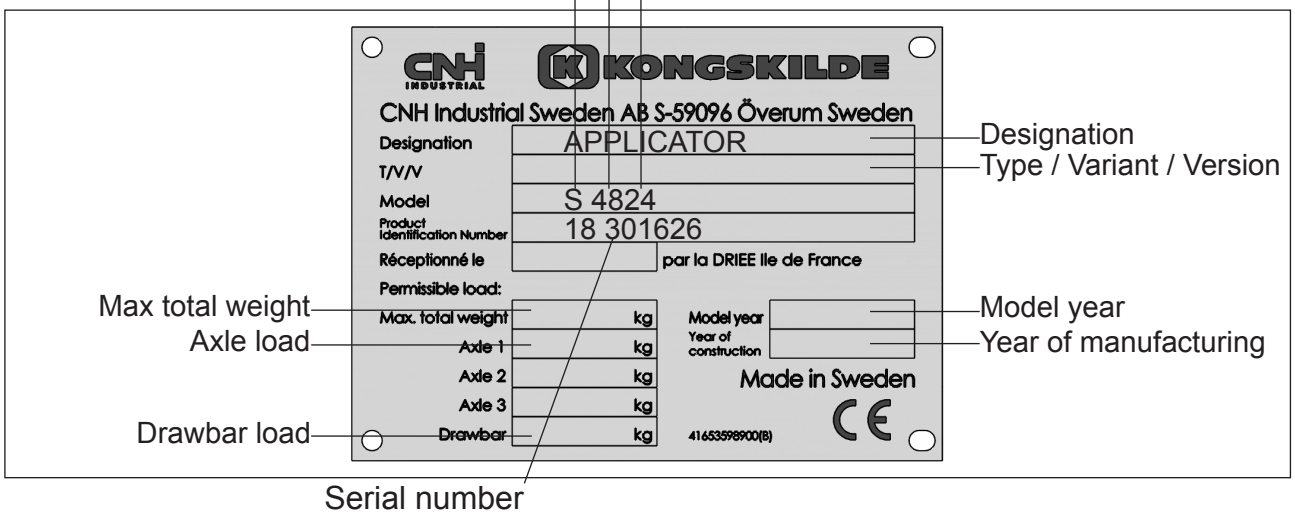
IDENTIFICATION OF THE MACHINE

Type designation
S 4812
S 4818
S 4824

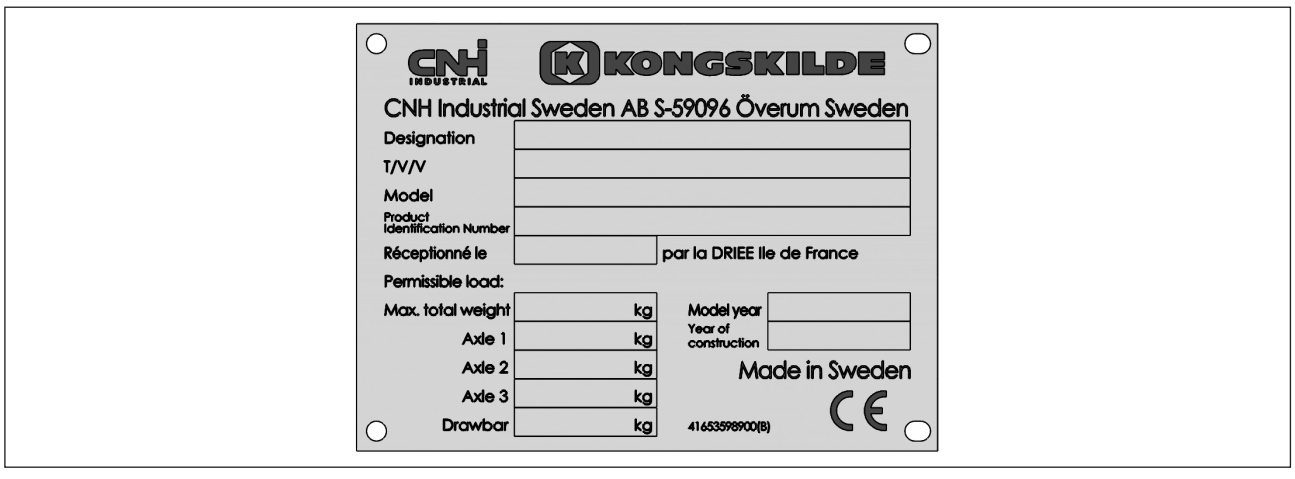
Working width 12 = 12 m
18 = 18 m
24 = 24 m

Hopper volume 48 = 4800 liter

Machine type S = Spreader



Complete the sign below with the Machine type and Serial number of Your machine.



SAFETY REGULATIONS

READ THE INSTRUCTION MANUAL. SAFETY IS YOUR RESPONSIBILITY.

You should read the instruction manual before you change any settings or start using the machine. It is designed and manufactured with as many safety features as possible, but we cannot foresee all possible circumstances that can involve safety hazards with this machine.

Your responsibilities as owner or operator are to ensure the safety of any personnel in connection with: the operation, transport, maintenance or storage of the machine. If you have questions not answered in this manual, please contact your dealer or distributor.

Be aware of your responsibilities. The most important safety device is a safety conscious operator, whose training and experience must include:

- Operator competence, the operator must be able to carry out a correct and complete adjustment of settings and to ensure safe and reliable operation. Training in safety issues is to be reviewed or repeated annually.
- Being aware of their environment to the extent that unforeseen safety issues that may arise are dealt with to ensure the safety of all personnel (including operators, maintenance personnel and bystanders).

This symbol means: SAFETY ALERT!
The safety decals in the instruction manual are used to highlight given instructions that involve safety of all personnel. Failure to comply with a given instruction could result in severe injury or death.

SAFETY ALERT decals Note! The decals on the machine can differ from the decals in this instruction manual.

SAFETY WHEN CONNECTING AND DISCONNECTING WINGJET

Risk for personal damage
An unintentional manoeuvre with the tractor may cause serious injury. Always make sure that nobody is standing between the tractor and the machine during connection and disconnection.

Make sure that there is no pressure in the hydraulic hoses
Before the tractor engine has stopped, make sure that there is no pressure in the hydraulic hoses by activating the tractor spool valves to floating position.

Check connection of hydraulic hoses
Make sure that the hydraulic hoses are connected to the correct hydraulic outlets on the tractor. If connected incorrectly, the machine can move in an unforeseen way.

MAINTENANCE SAFETY

Avoid contact with oil and grease
To avoid oil and grease contact with your skin, wear protective gloves.

High oil pressure
Be careful when WingJet is examined for oil leaks or damaged fittings. Hydraulic oil under pressure can penetrate the skin and cause serious damage. Always release the pressure in the hydraulic system prior to maintenance work on the hydraulic system and make sure that all components are correctly tightened before the system is set under pressure. Always wear gloves and eye protection. Never tamper with the gas filling valve on the accumulator!

Do the maintenance regularly
Do the maintenance work regularly as it is described in this manual, section 7 MAINTENANCE. Replace wearing parts as described. There is a risk of poor performance if the machine not is maintained properly.

Retighten all nuts and bolts
Always remember to retighten all nuts and bolts after about 3 hours of use. Make sure that bolts and nuts are tight at all times. Tightening torques are shown in section 7 MAINTENANCE.

Use protection gloves
Always use gloves when working with parts on the machine as they can have sharp edges.

TRANSPORT SAFETY

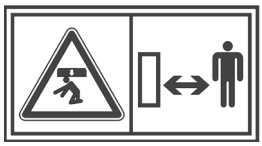
Comply with the relevant traffic regulations
The operators have to observe relevant statutory or other national regulations dealing with road safety and labor safety issues.

Drive safe, max 25km/h
Be a safe and courteous driver, yield to oncoming traffic. In all situations, do not exceed 25 km/h.

SAFETY DECAL LOCATION

Explanations of pictogram decals. Note decals may differ slightly from those shown.

4165 99101 00 Read the manual!
Carefully read the instructions and observe all safety instructions before you connect the machine to the tractor.

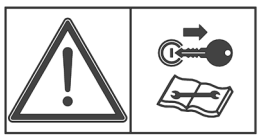


4165 98301 00 Warning hazardous area!
It is not allowed to be within the hazardous area, on, under or close to the machine during transport driving or operation. Never work under the WingJet. Always make sure that nobody is standing between the tractor and the machine.

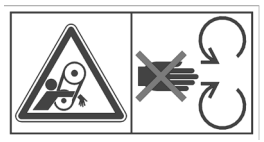
4165 98300 00 Pressurized fluids !
Use extreme caution around suspected hydraulic leaks or damaged hose lines. Hydraulic fluid under pressure can be extremely dangerous. Always depressurise the system before a hydraulic pipe, union or hose is loosened. Remember to tighten all connections prior to pressurize the system. Wear hand and eye protection.

4165 34375 00 Transport lock !
When the boom sections are raised to transport position the booms must always be secured with the mechanical transport locks. Don’t pass under a raised spreader boom!

4165 25073 00 Warning! Risk of crushing
Be careful! Be alert there could be a risk of crushing hands when operating the ladder in between the two positions.

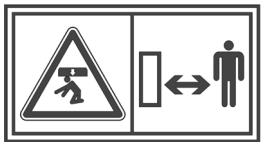


4165 33479 00 Shut off engine !
Shut off engine and remove key before performing maintenance, repair work or before removing safety shields.



4165 33465 00 Warning belt / chain drive !
There could be a risk of crushing hands when carrying out maintenance work. Ensure that all shielding is correctly in place when maintenance is completed.

4165 33472 00 Spring loaded components !
The outer section of the spreader boom is spring loaded when folded. All maintenance work must be done when the boom is folded out to working position and properly supported.



4165 98301 00/4165 33469 00 It is forbidden to stay in the spreaders working zone !
Under no circumstances, one can stay within the range of the spreader when the tractor is running.

Rotating shaft !
PTO –shaft guards must always be mounted. Never attempt to connect or disconnect or adjust the machine until the PRO-shaft has stopped completely!

4165 95076 00 Lifting point !
The machine may only be lifted at the specified lifting points marks.

4165 33520 00 Eye protection must be used!
These warnings however, do not exempt the operator from the responsibility to observe relevant statutory or other national regulations dealing with road safety or labour safety issues.

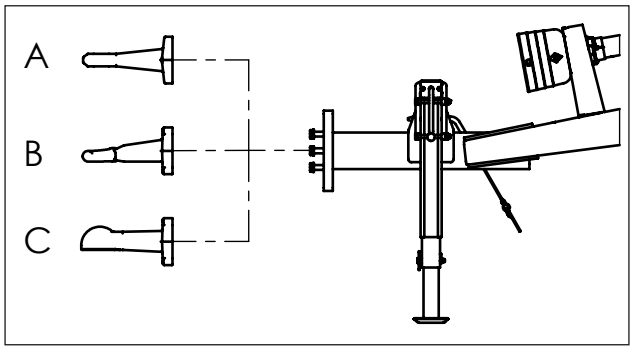
4165 33466 00 Ear protection must be used!
These warnings however, do not exempt the operator from the responsibility to observe relevant statutory or other national regulations dealing with road safety or labour safety issues

2. TECHNICAL DESCRIPTION

CONNECTING THE MACHINE TO THE TRACTOR

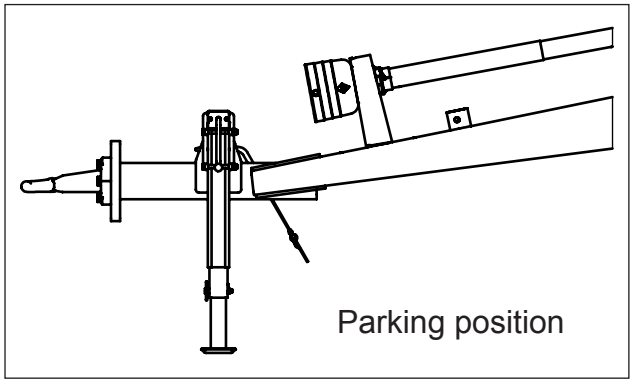
DRAWBAR

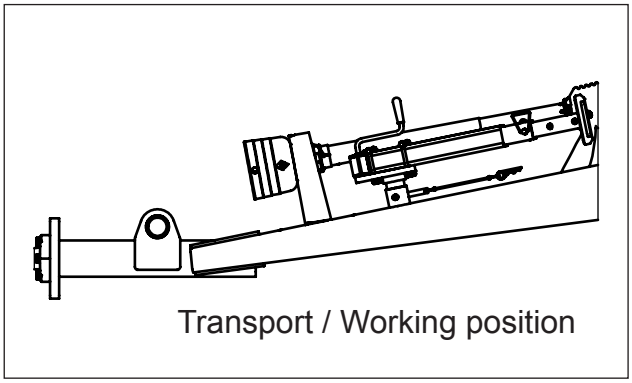
The tractor is connected to the drawbar on the machine. The drawbar is replaceable and adapted either towing eay Ø40mm (**A)**, pick up Hitch Ø50mm (**B)** or ball type Ø80mm (**C)**.



SUPPORT STAND

When parking the machine, attach the support stand as on picture below. Prior to driving the support stand must be cranked up and moved to its transport position.


Parking position


Transport / Working position

NOTE! The vertical load on the drawbar do not exceed 1600kg on the tractor Hitch.

Be alert there could be a risk of crushing hands when operating the support in between the two positions.

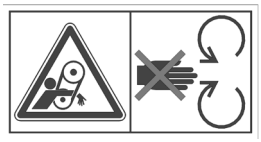
When parking , make sure that the machine is standing in firm level ground and that the stand is correctly mounted. The machine should be blocked so that it cannot move. Do not park the machine on the support stand when the machine is fully loaded.

Checking the towing eye wear, see section 9. MAINTENANCE.

POWER TAKE-OFF (PTO) SHAFT
S 4812 -4824 is equipped with 540 r.p.m PTO shaft as standard.
The PTO-shaft must be connected with the wide-angle joint towards the tractor. Check that the axle halves do not bottom out when the machine is turned at maximum. If they do bottom out, both shaft halves must be shortened equally. The front axle should overlap according to below.
540 rpm PTO-shaft at least 1/3 of the length.
1000 rpm PTO-shaft at least 2/3 of the length (optional extra).

Engage the fan before starting the feeding mechanism. The PTO should be engaged at low engine revs and then slowly be increased until the PTO is running at 540 rpm. Disengage the feeding first and then the fan.

NOTE! The angle of alteration must not exceed 80° irrespective of whether the shaft is rotating or at standstill.



Do not attempt to start the tractor or engage the PTO until correctly seated in driver's seat. Keep clear and also keep loose clothing away from the rotating PTO shaft.

The PTO-shaft guards must always be mounted and intact!

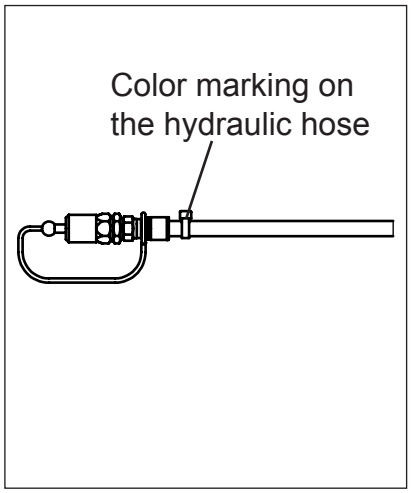
CONNECTION TO THE TRACTOR

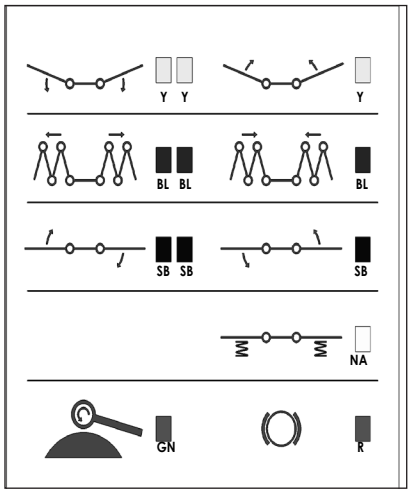
DIRECT CONNECTED HYDRAULICS

The tractor must be equipped with the following hydraulic outlets.

	Double acting	Single acting	Return line to tank
S 4812	1	1	1
S 4818 – 4824	2	1	1

All hydraulic hoses are equipped with quick couplers type Aeroquip 1/2", except for the return line that has an female ¾" quick coupling. To simplify the connection all hoses are marked with colour (see below). This decal is located on the fan transmission housing.





ID of hydraulic hoses

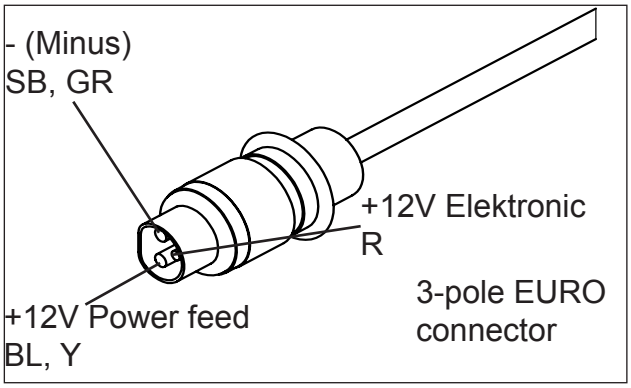
Yellow	Maneuvering Angle of side wings. (only 24 m boom)
Blue	Folding spreader boom
Black	Maneuvering Angle of side wings. (only 24 m boom)
Green	Hydraulic drive
White	Pressure boom suspension (only 24 m boom)
Red	Hydraulic brakes

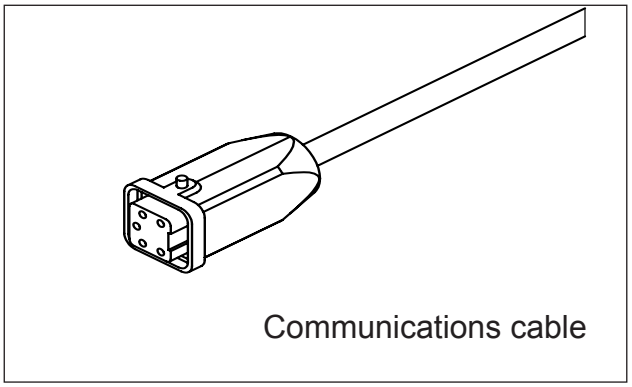
ELECTRICAL SYSTEM

The electrical system is divided in two separate circuits 12V - control equipment and running lights.

K-PLUS ELECTRONIC MONITORING AND CONTROL SYSTEM

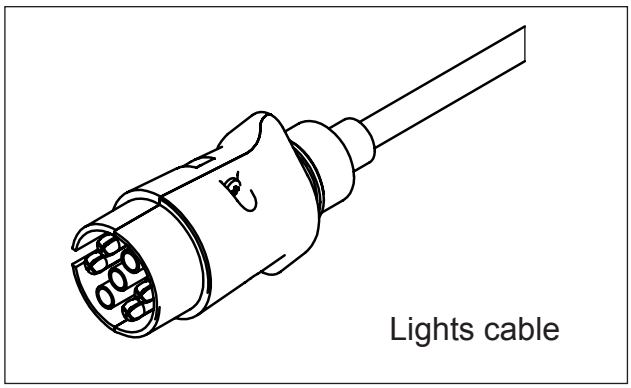
The monitor should be mounted in a suitable place in the cab so that the driver has a good overview and the ability to operate the machine functions when the driver sits in the seat looking ahead in the direction of driving.
Connect the 3- pole EURO connector to the tractor and the com cable to the control box in the tractor cab, see section 10. WIRING AND HYDRAULIC DIAGRAMS.





RUNNING LIGHTS

Connect the seven (7) pole connector to the tractor.



Wire Colours	
SB	Black
W	White
R	Red
BL	Blue
Y	Yellow
GN	Green
GR	Grey
BN	Brown
P	Pink

WHEEL EQUIPMENT / TRACK WIDTHS / BRAKES

TRACK WIDTHS

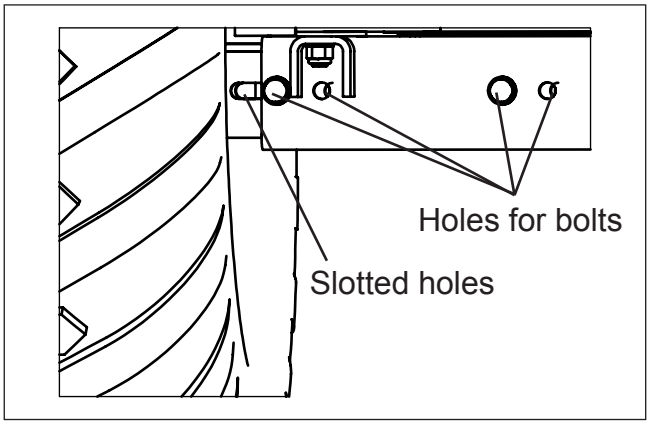
The wheel axle is adjustable, and can be set to different widths according to the type of wheels that the machine is equipped with.

BASIC SETTING:

Track widths		Wheel type
1950 mm - 2180 mm	for	800/45 - 30,5
1900 mm - 2180 mm	for	800/40 - 26,5
1700 mm - 1980 mm	for	600/55 - 26,5
1750 mm - 2000 mm	for	340/85 R38
1840 mm - 2040 mm	for	420/85 R34*

*Only with pneumatic brakes and high chassis.

For tire inflation pressure and maximum load, see section 9. MAINTENANCE, WHEEL DIMENSION / RECOMMENDED INFLATION PRESSURE AT MAX LOAD.



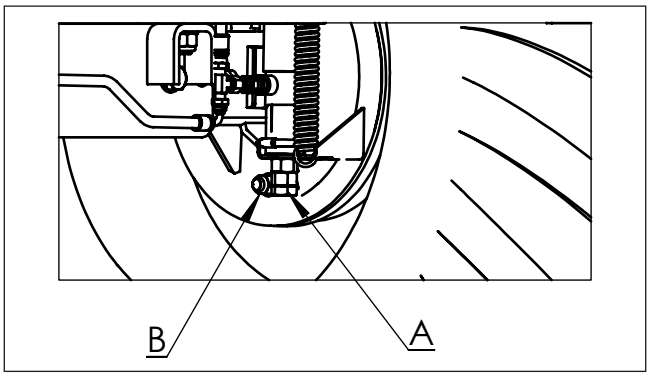
The adjustments of track width is done by the outer axles which have slotted holes. The outer axles are fixed to the inner axle with two screws. These screws can be mounted in two different positions.

HYDRAULIC BRAKES

As an option, the machine can be equipped with brakes. The braking action being achieved by means of a single acting hydraulic cylinder on each wheel. Both hydraulic cylinders are connected in a single-acting hydraulic outlet from the tractor.

ADJUSTMENT OF HYDRAULIC BRAKES

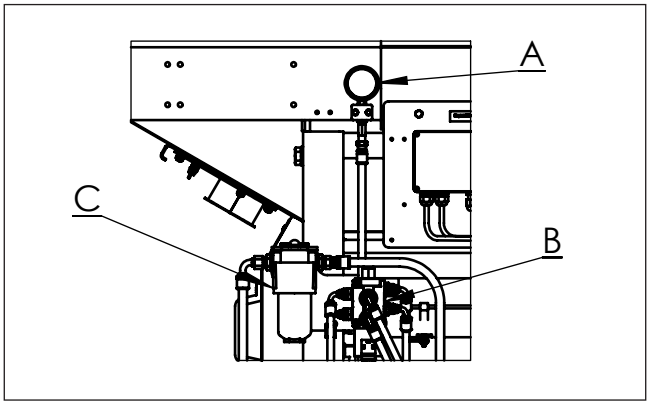
1. Raise the wheel.
2. Tighten the adjusting screw **A** until the wheel is locked.
3. Loosen the adjusting screw until the brake is released and loosen the screw a further turn.
4. Check that the stroke of the hydraulic cylinder does not exceed 40 mm when braking.
5. If the stroke is excessive, the brake shoes may also be adjusted at the lower attachment point by tightening the nut **B** on the lower half of the plate. Then start again from point **2**.



HYDRAULIC SYSTEM

The machine is equipped with direct connected hydraulic system where the different functions are connected directly to the hydraulic outlets on the tractor.

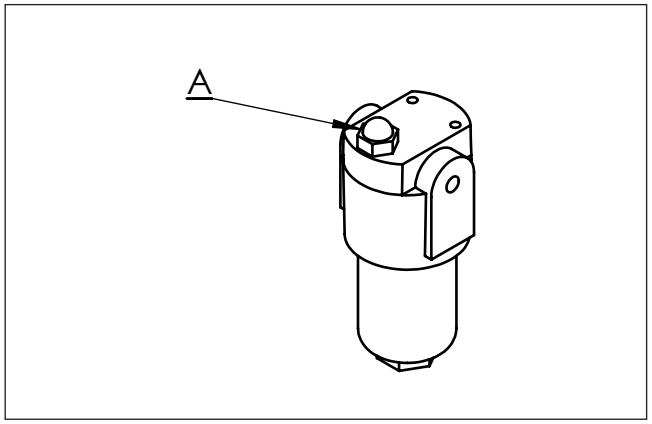
The hydraulic system consists of:
A hydraulic motor with an proportional valve for the feeding system, pressure filter (**C**), hydraulic cylinders, hydraulic hoses, restrictors and adjustable restrictor valves. The S4818-4824 machine is also equipped with electrical diverter valve (**B**), pressure gauge (**A**) and one accumulator.



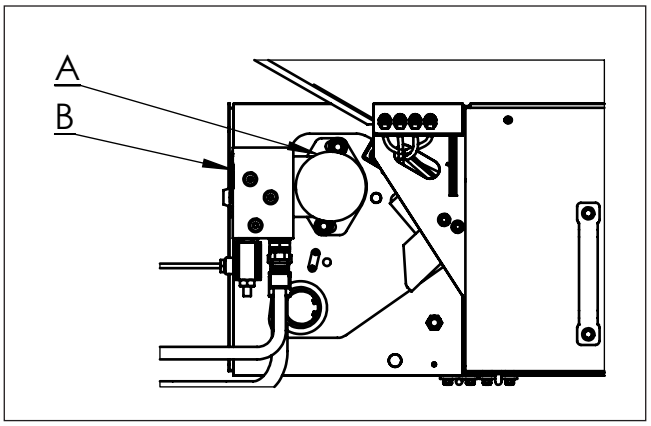
The diverter valve:
Is used to switch function between horizontal angle and angle of the side wings (S4818-4824 only).

Accumulator
The accumulator is used as hydraulic suspension of the side wings (S4824 only). It should be charged with oil to 8 –12 MPa on the pressure gauge, see section 8. SPREADER BOOM, SPREADER BOOM 18-24 METER.

Filter
The oil from tractor to the proportional valve and hydraulic motor pases a pressure filter. The filter should be replaced when the indicator (**A)** turns from green to red.



A = Hydraulic motor
B = Proportional valve



The metering system is driven via a hydraulic motor. The hydraulic motor requires a oil flow of 30 l/min.

3. K-PLUS COMPUTER MONITORING AND CONTROL SYSTEM

K-PLUS

The system consists of a display monitor with controls and attached machine intelligence unit.

All functions of the Wing Jet are controlled through the monitor. With a set of controls, which changes their function depending on the menu. The display is mounted in a suitable place in the tractor.

MENU STRUCTURE

The menus are shown in a tree structure.

1. The tree structure starts from the Main menu.
   The Main menu is always shown when the system starts.
   The Main menu has 5 main groups:

Operation		is reached by pressing A2
Alarm		is reached by pressing A3
Setup		is reached by pressing A4
Info		is reached by pressing A5
Display		is reached by pressing B2

PUSH BUTTONS

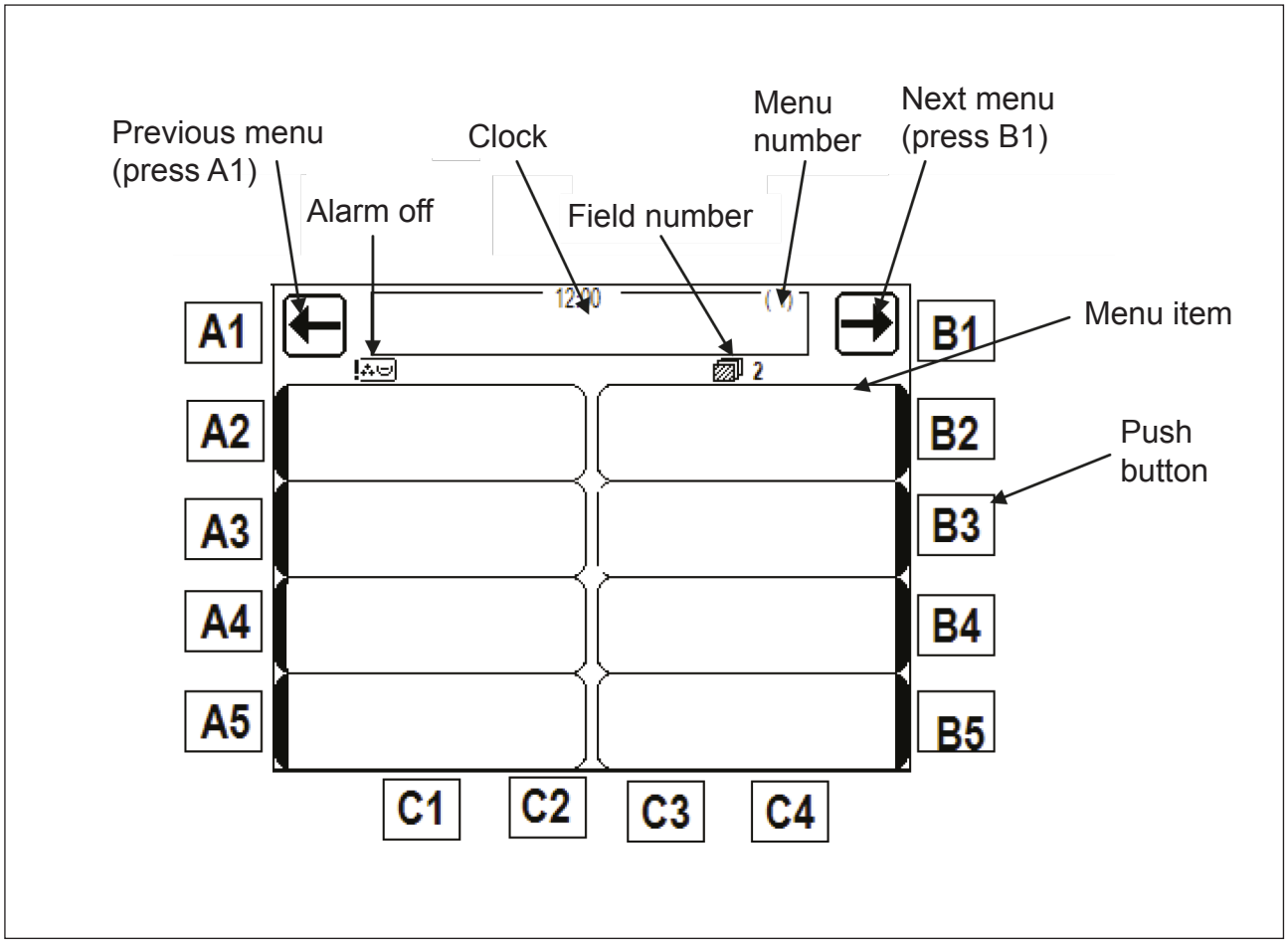
The monitor has three rows of push buttons: A1-A5 , B1-B5 and C1-C4.
The function of each button is depending of the menu, which is actually shown on the display
All buttons are not available in each menu. Some functions are the same in all menus.

By pressing A1, , which is located in the upper left corner, you are returned to previous menu. In this way, by pressing A1 several times, you always go back to the Home- menu.

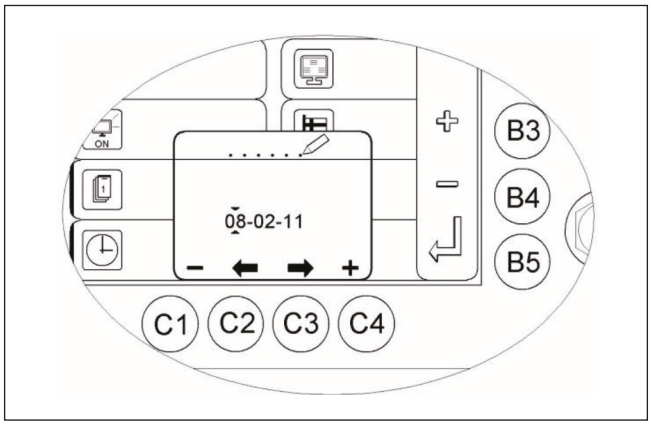
The push button B1, is often used to go to the following menu in the structure.

The Monitor has also 2 mechanical switches the bottom one is used to change fertilizer rate when running in field and the other to start the feed out.

OVERVIEW OF K-PLUS MONITOR



ENTERING DATA



Generally, when data are entered, a separate window is found in the lower part of the display: Select the digit to be changed by pressing C2 ← or C3 →.

Increase or decrease the marked digit by pressing C1 – or C4. (Alt. By pressing B3 + or B4 -)

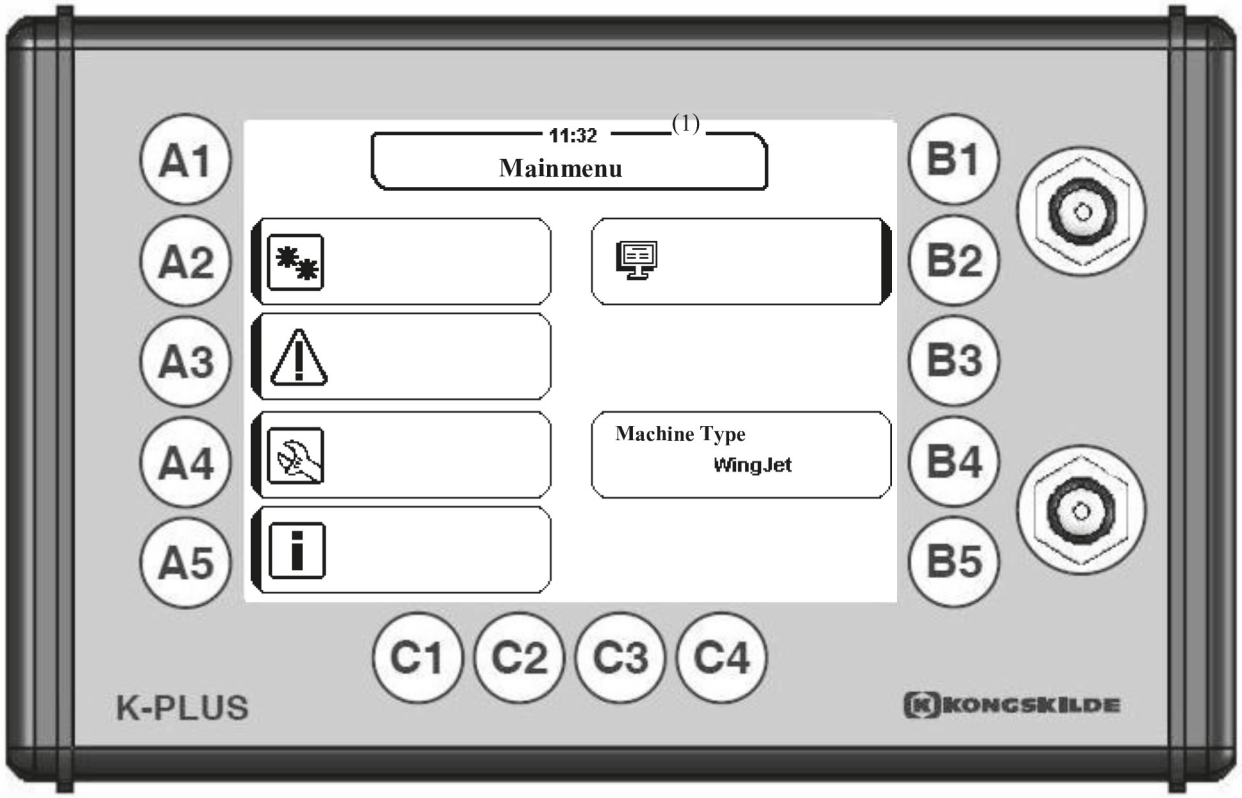
Accept the value by pressing B5. ↵

To cancel the entering of data Without accepting and storing the shown value press B1 ESC.

ACCEPTING AN ALARM

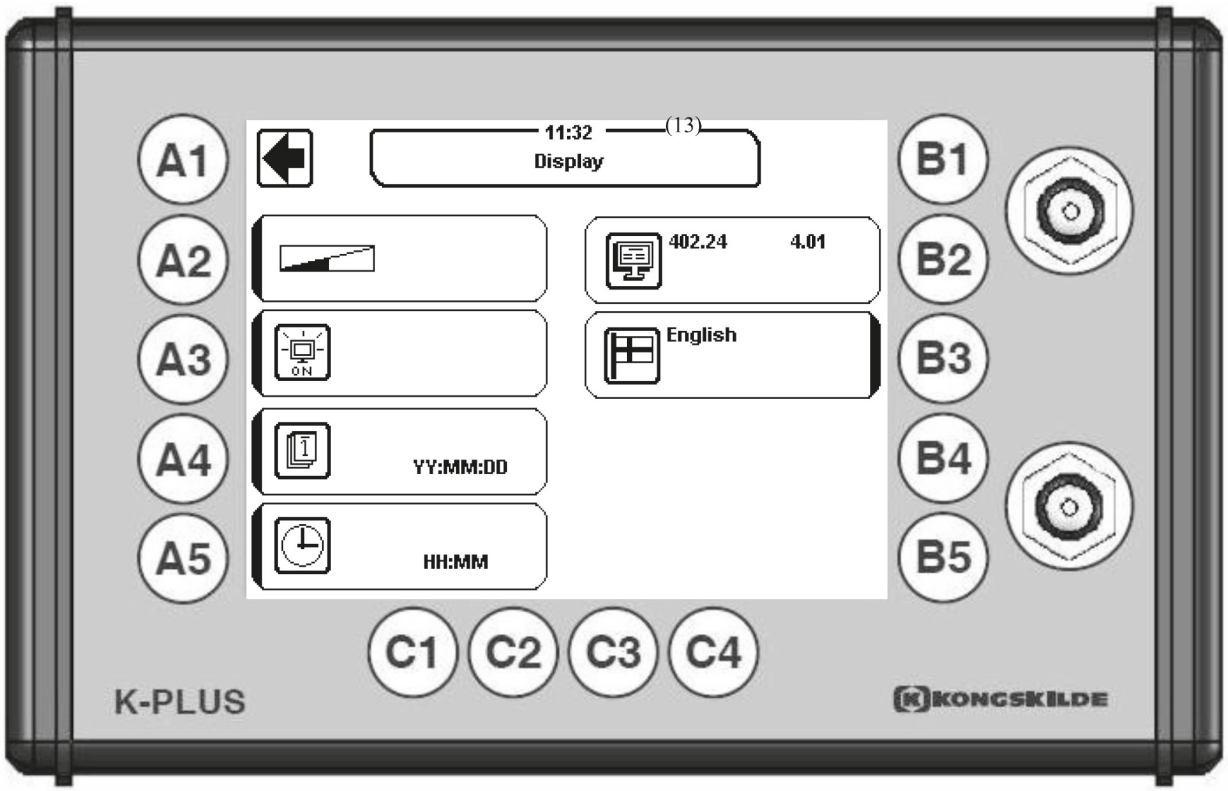
When an alarm is displayed on the screen, accept alarm by pressing B5.

ERR	Tank 1 Empty



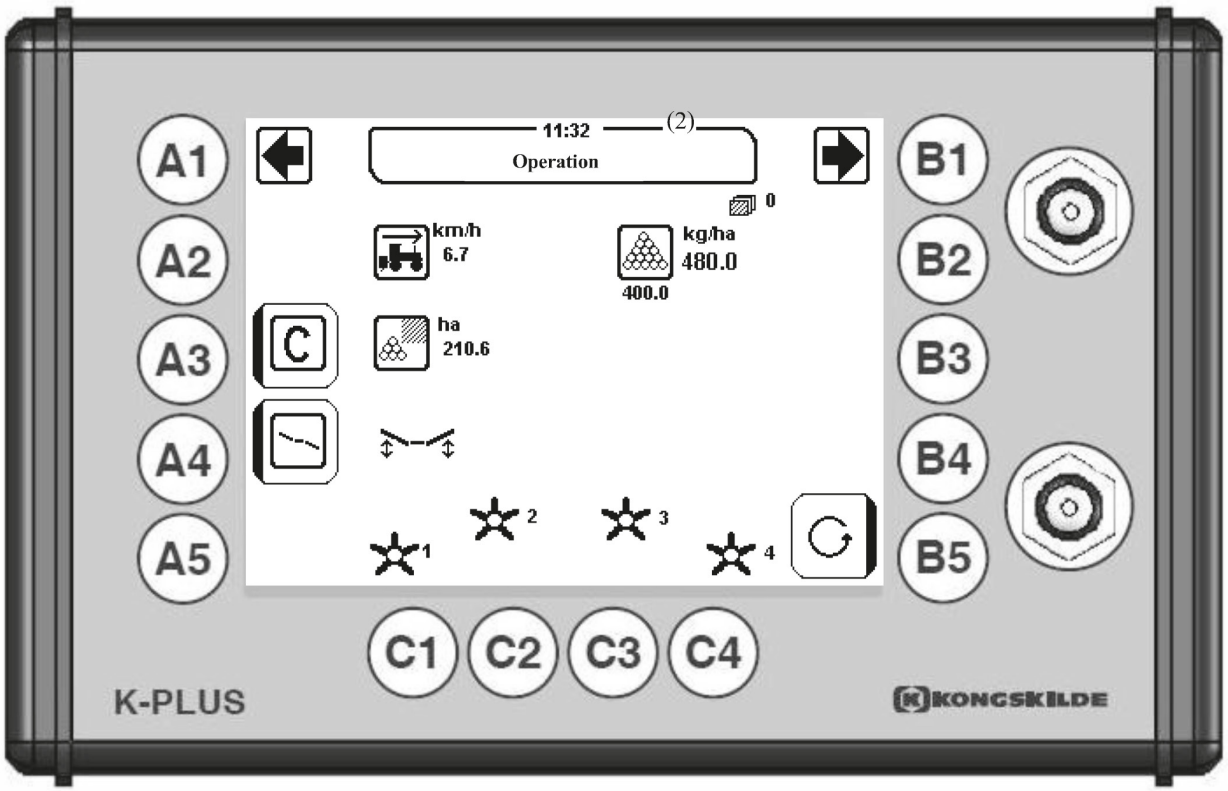
MAIN MENU

Main menu	Select menu	Explaination
A2:	Operation	Used to operate boom section shut off, diverter valve for boom adjustment and control of yield Kg/ha hectare meter.
A3	Alarm menu	To select if the different alarms should be On or Off.
A4:	Setup menu	Calibration of wheel factor, Calibration of fertilizer, Working width, Input of output rate Kg/ha. The wheel calibration and calibration of fertilizer must be done before using the machine infield.
A5	Info menu	Display Total amount of fertilizer kg. working time (minutes) in actual field and Total amount and time in all fields, actual Amp. and Voltage.
B2	Display	Contrast, Display light, date, clock and requested language.
B4	Shows machine type.	



DISPLAY

Main menu	**Select menu**
A2	Contrast on the screen.
A3	Light on screen on /off.
A4	Date.
A5	Clock.
B2	Softwere version in monitor (left) and on machine intelligence unit. (Right).
B3	Setting of requested language.



OPERATION 1/2

A3 Zero set hectares meter on actual field no. Field no is shown in the top / right corner of the display.

A4 Alter function when adjusting the boom between horizontal adjustment and heights of the outer ends.Only on Wing Jet S4818 and 4824.

Forward speed is shown. 

On /Off feeding mechanism the hydraulic motor is operated by the bottom mechanical switch. (upwards=On downwards=Off)

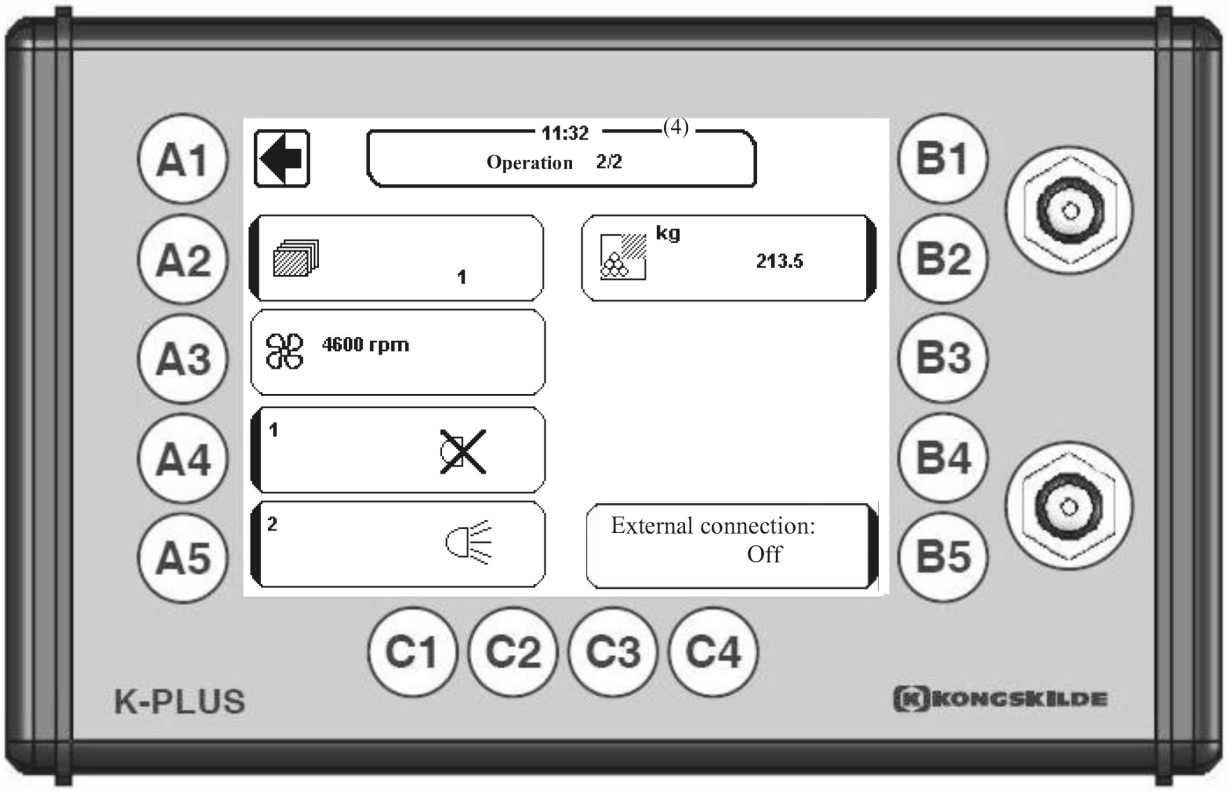
Automatic Control:

Required output rate Kg/ha fertilizer is shown under the symbol. Actual output rate is shown on the right hand side of the symbol. The output rate can be changed up or down in 10% steps, using the top mechanical switch.

Partial shut off:

The symbols for the feed shafts ✲1 are rotating when working. The partial shut off are operated by button C1-C4. The feed shaft sections and the hydraulic motor are crossed over when it is shut off.

C1: Partial shutoff, boom section left outer. ✲1
C2: Partial shutoff, boom section left inner. ✲2
C3: Partial shutoff, boom section right inner. ✲3
C4: Partial shutoff, boom section right outer. ✲4



OPERATION 2/2

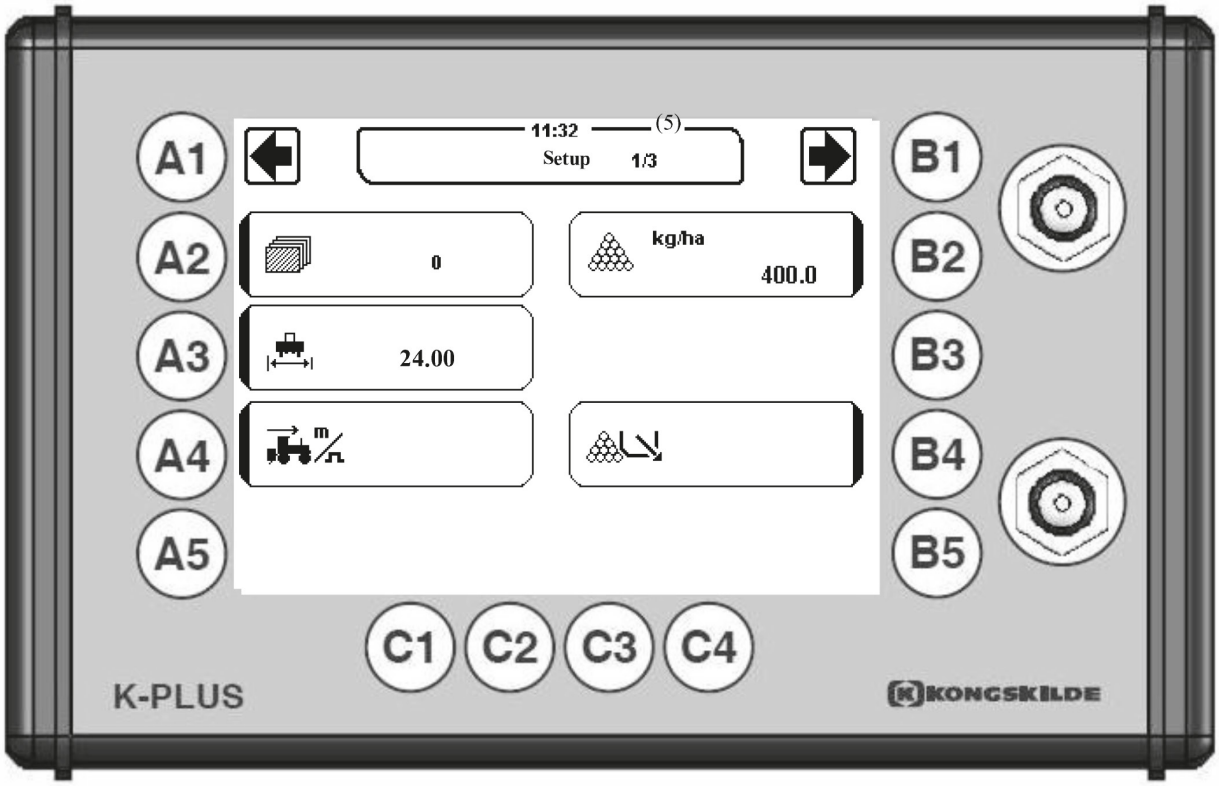
A2	Field number. Chose a field number that should be active 0 – 19.
A3	Display fan r.p.m. Recommended Wing Jet 4812 ~ 4100 rpm when working. Wing Jet 4818-4824 ~ 4500 rpm when working.
A4-A5	Switch for extra hopper lights.
B2	Total amount of fertilizer kg in selected field.

ACCEPTING AN ALARM

When an alarm is displayed on the screen, Example:
Accept that you have noticed the alarm by pressing B5.

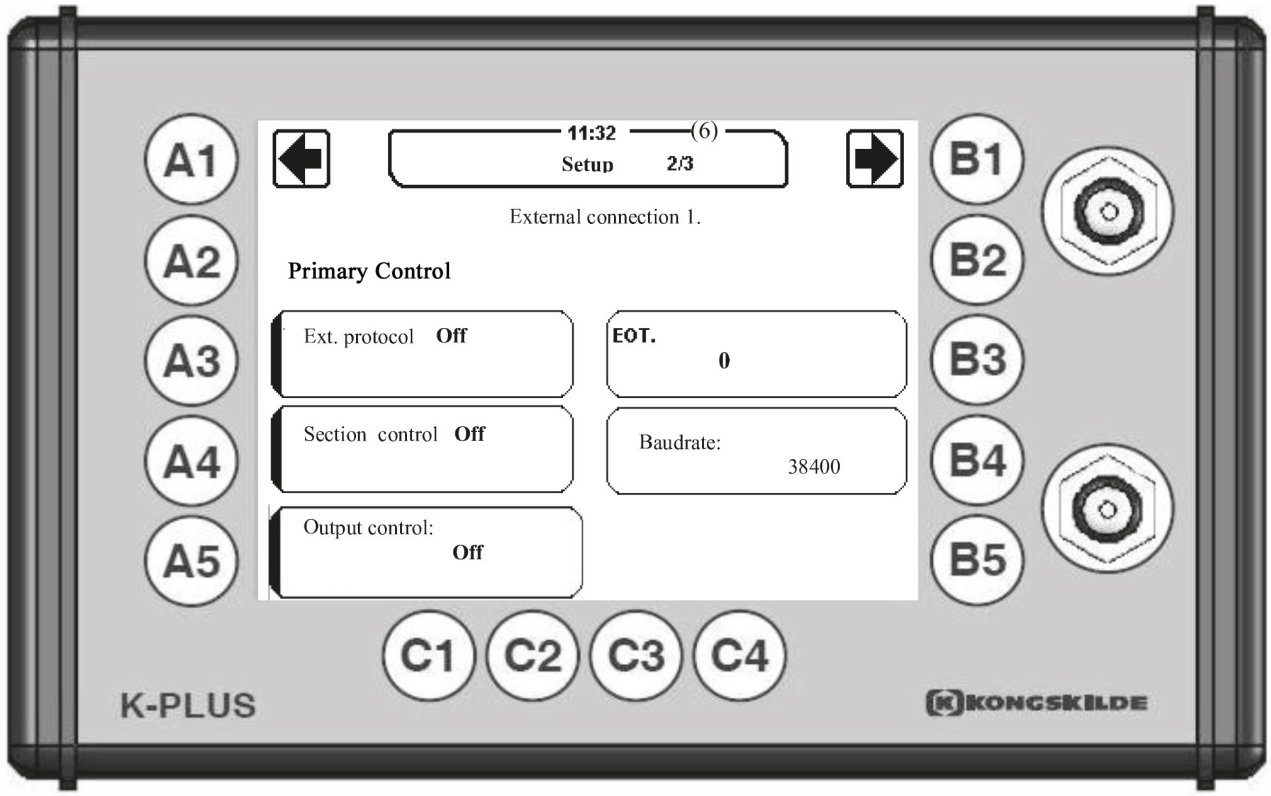
ERR Tank 1 Empty

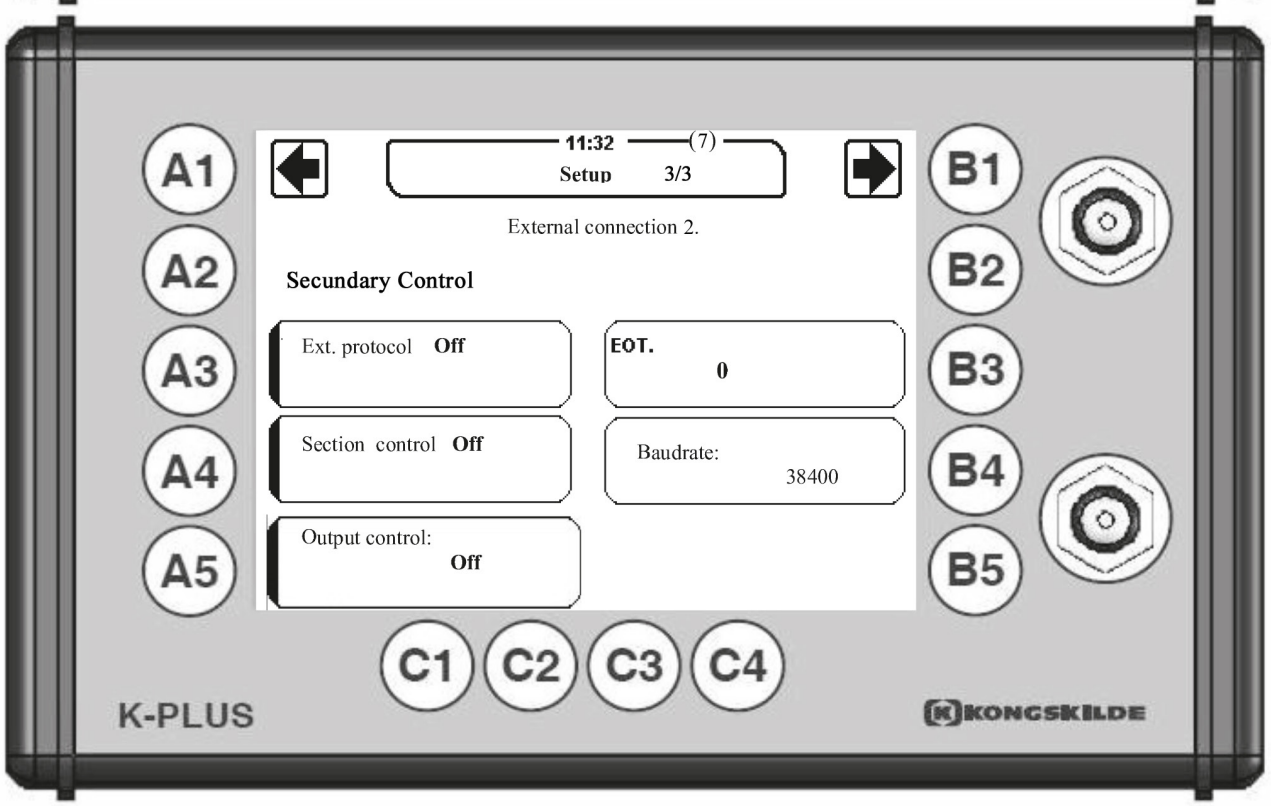
B5 External connection: On / Off (Example if GPS signal is lost the external steering can be shut off).



SETUP 1/3

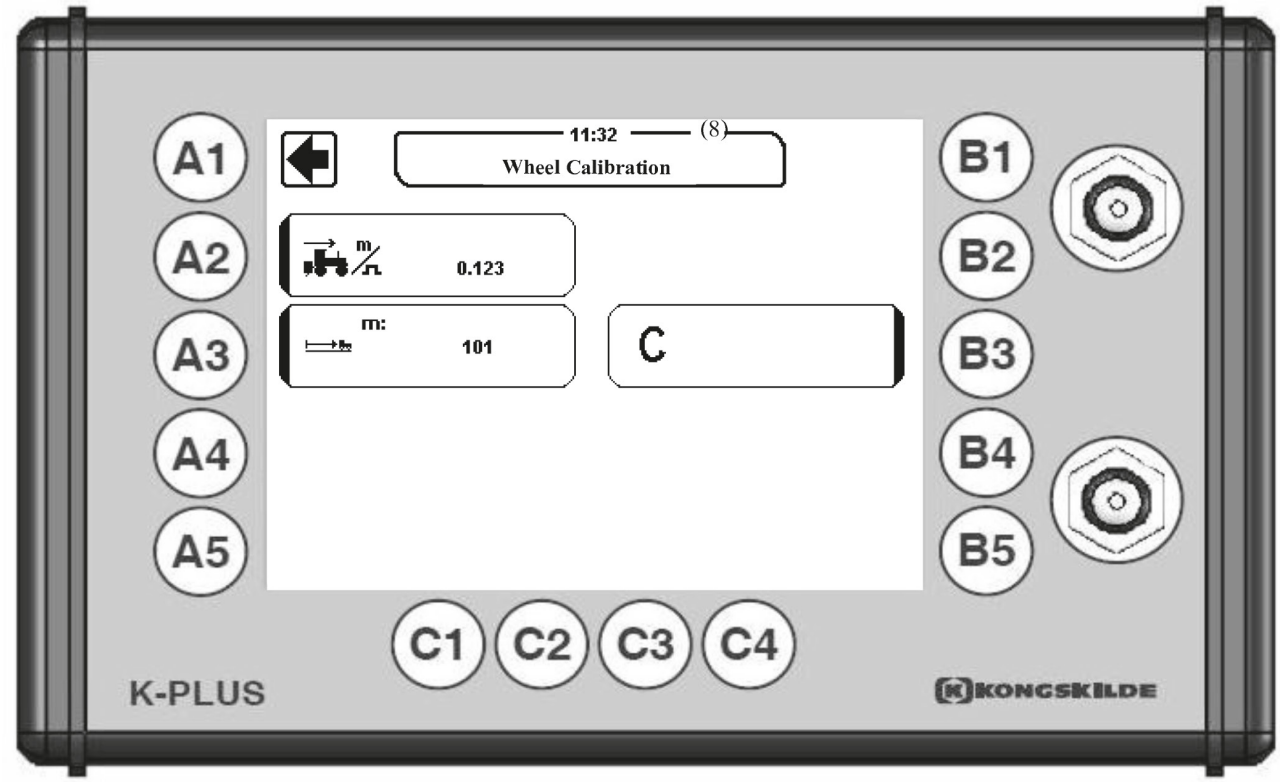
A2	Field number. Select a field to be active 0 - 19 (Same function as in Operation menu 2/2)
A3	Working width on machine (m with two decimals).
A4	Calibration of factor for drive (Wheel calibration).
B2	Enter required output rate, Kg /ha with one decimal.
B4	Calibration test. See calibration test.





SETUP 2/3 - 3/3

These menus are used to select the type of external connections for example GPS. It is also possible to connect systems that steer the shutoff of the boom sections and steering of the output rate. Contact your GPS supplier.

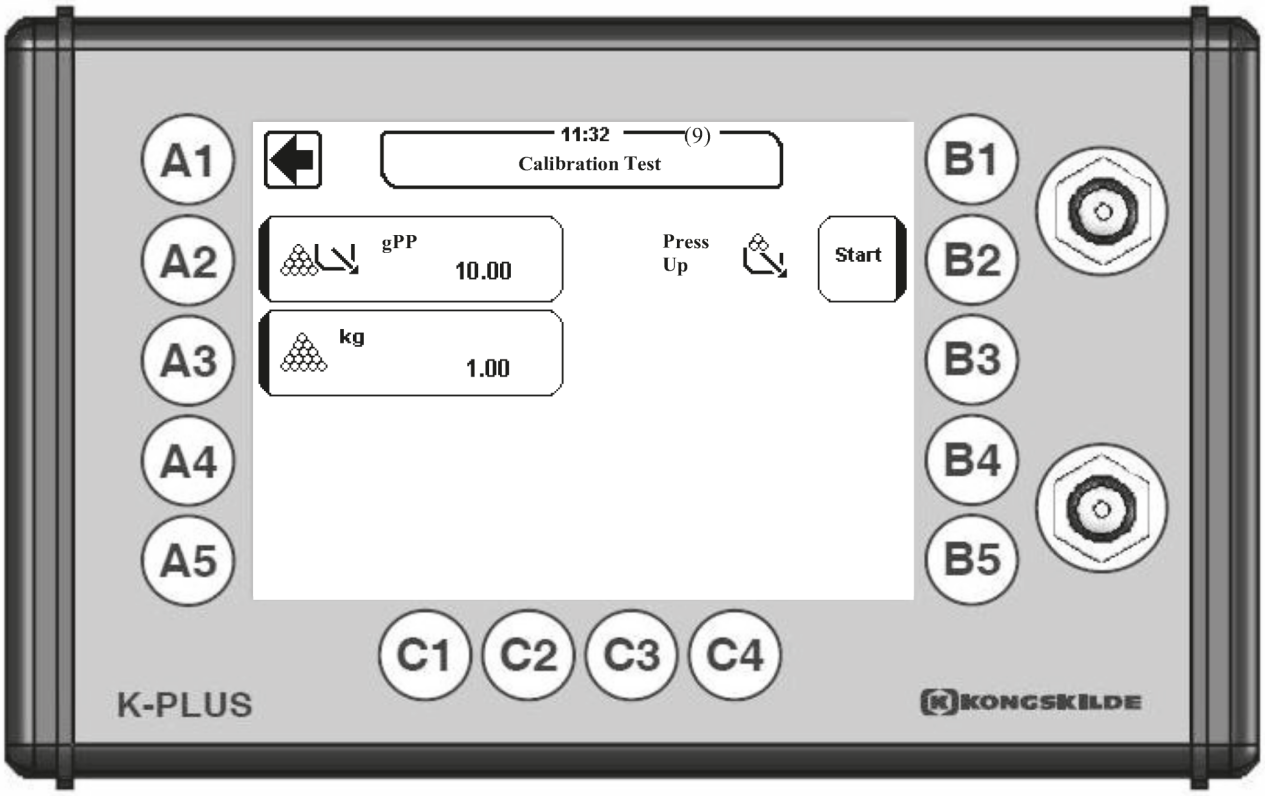


WHEEL CALIBRATION

Calibration of wheel factor (base factor 0.123)
(Check the inflation pressure in the transport wheel before calibration of the wheel factor!)

1. Measure a distance of 100 m.
2. Zero set the distance with clear button B3.
3. Drive the distance 100m with drive roller engaged.
4. Enter the distance (100 m) at A3 and accept value by pressing B5.
5. The factor at A2 changes. (The factor must have three decimals).

Note the wheel factor: _____

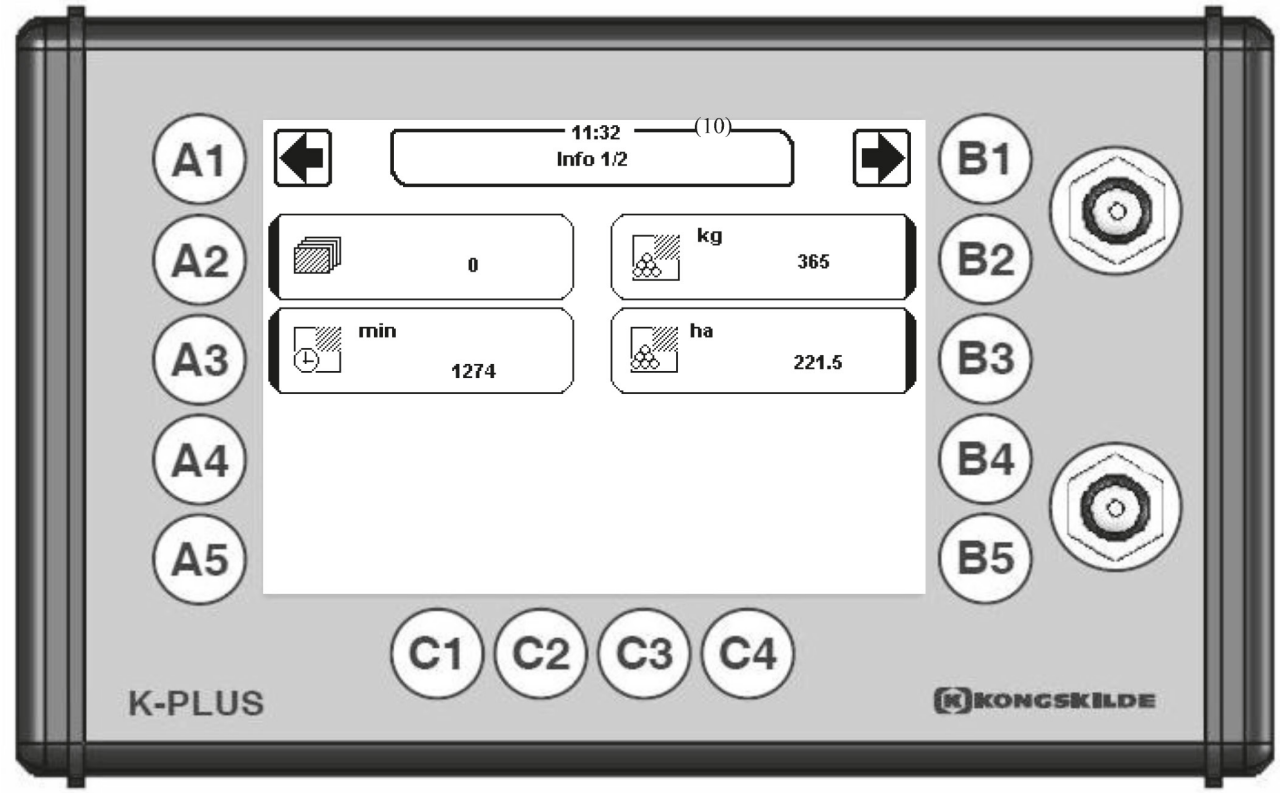


CALIBRATION TEST

1. Set the machine for calibration test. The test is taken from the front feed shaft. The rear feed shafts are automatically stopped when you enter the calibration menu. If small amounts of fertilizer or seed rates, set the reduction gear in reduction position. See DRIVE SYSTEM FOR THE METERING SYSTEM. Set the feed gates to suitable position and mount the test trough.
2. Enter the Calibration menu and push the Calibration button behind the fan in order to fill the feed gates with fertilizer, empty the trough.
3. Enter a pulse value. 10.00 or a pulse value used before.
4. Start the calibration by pressing the start button B2. The symbol at (A3) starts to flash.
5. Press the Calibration button behind the fan and hold it until the test trough is filled to approximately ¾.
6. Weigh the amount collected in the trough.
7. Enter the weight: Kg with two decimals at A3. The symbol stops to flash.
8. The pulse value at A2 is changed. (Pulse value= How many grams the feed shafts feed out in 1/100 of a turn over the hole working width). It is possible to enter a pulse value used before without doing a calibration test.
9. Repeat the calibration in order to check that the pulse value is constant.
10. Go to Setup menu 1/3 and enter required output rate. The machine is now ready for operation.
11. When the drive is engaged the kg/ha is automatically adjusted to required output rate. Actual output rate is shown to the right of the symbol in the monitor.

TABLE FOR NOTES OF PULS VALUES

Fertilizer	Pulse value	Fertilizer	Pulse value

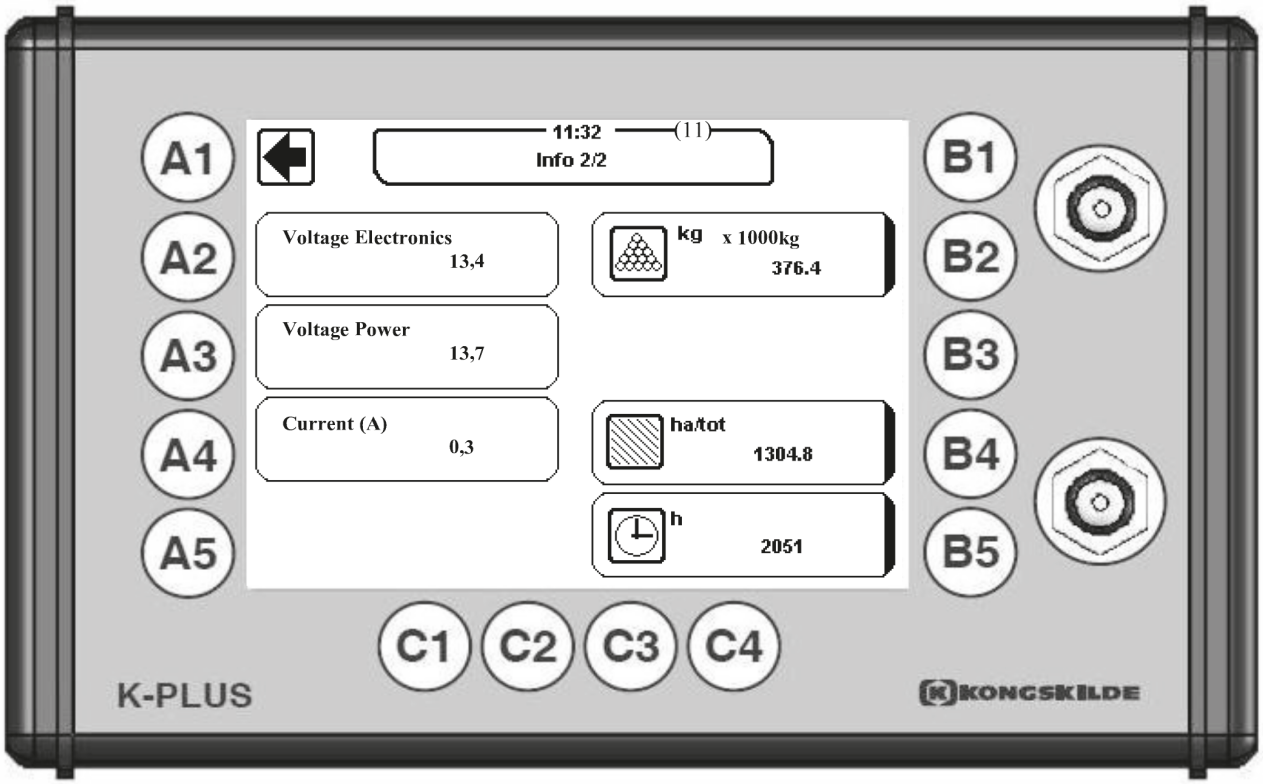


INFO MENU 1/2

The K-Plus can be programmed to collect information of the work in different fields 0-19.

A2	Select a field to show information from.
A3	Work time, shows minutes that the drive has been engaged.
B2	Shows total amount of fertilizer spreaded in selected field.
B3	Shows hectare in selected field.

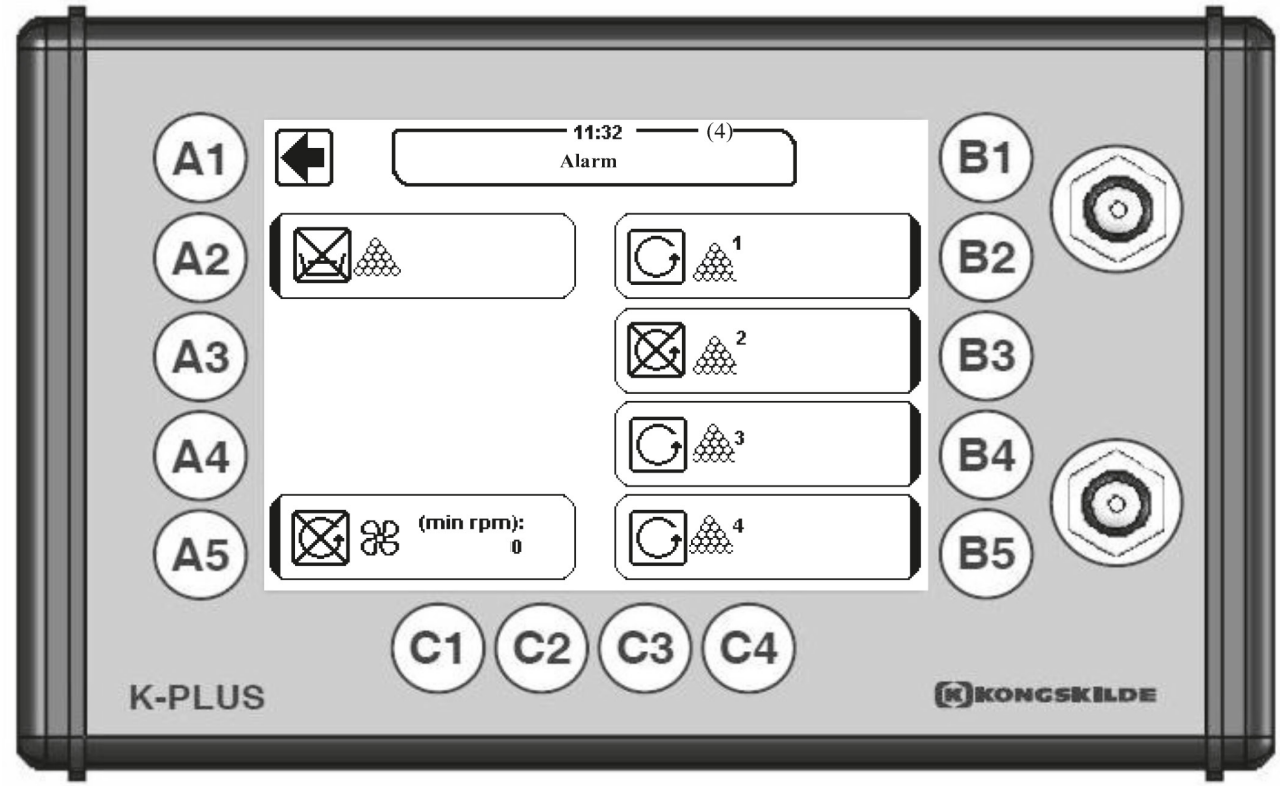
All the selected information above can be set to zero individually.



INFO MENU 2/2

A2	Information about actual Voltage for Electronics (V).
A3	Information about actual Voltage Power feed (V).
A4	Information about actual Current (A).
B2	Shows total amount of fertilizer used in all fields.
B4	Shows total hectares ha in all fields.
B5	Shows total working time hours in all fields.

All the selected information above can be set to zero individually. (B2-B5)



ALARM

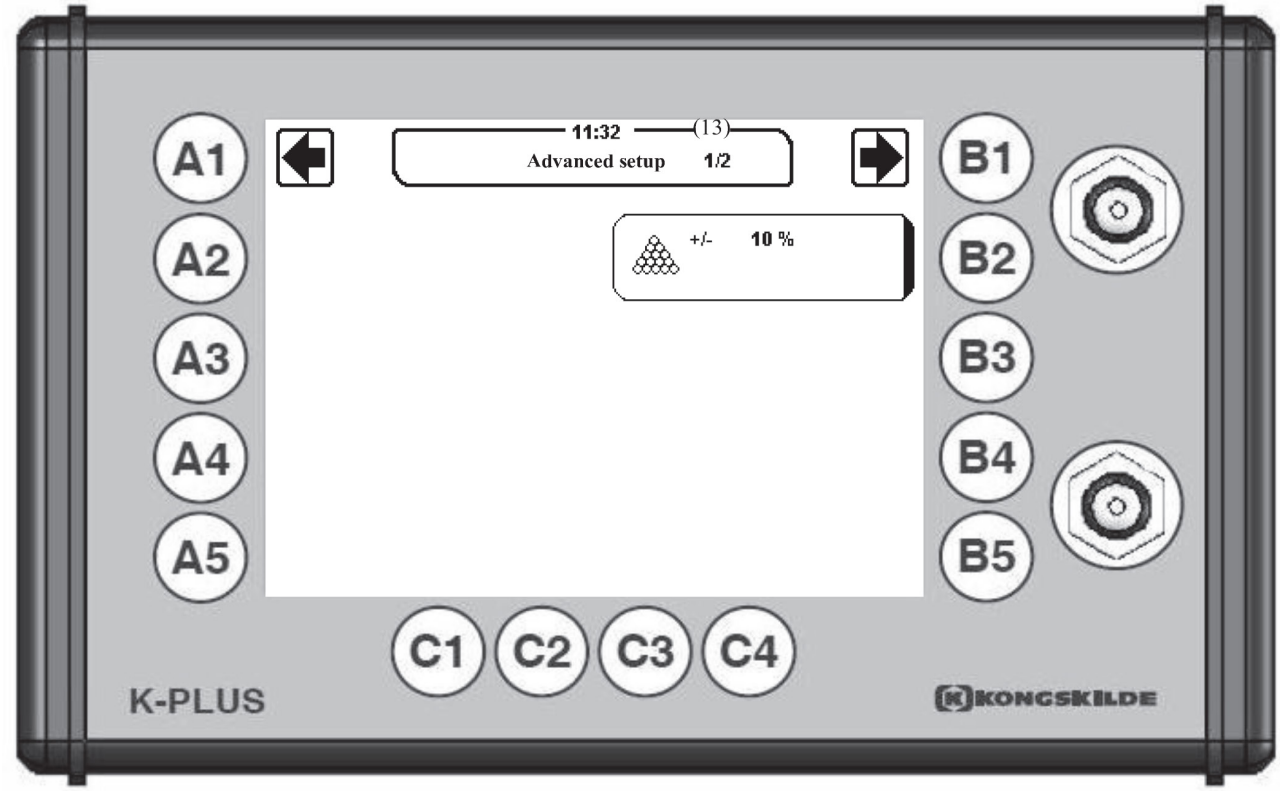
All alarms can be shut off separately when an alarm is shut off by pressing a button the symbol is ”crossed over ”. A small symbol in the top of the operation menu I/2 shows that an alarm is shut off. Ex.I2 Feed shaft sensor for feed shaft 2 is shut off.

A2 Hopper sensor.
A5 Fan sensor. An alarm is shown if the rpm is under pre set value (Standard 3000 rpm) when operating the machine.
Note! The alarm is shut off when the pre set min rpm is set to Zero!

Feed shaft sensors
B2 Boom section left outer
B3 Boom section left inner (shut off on picture above)
B4 Boom section right inner
B5 Boom section right outer

Example of an alarm:

ERR Stop Section4

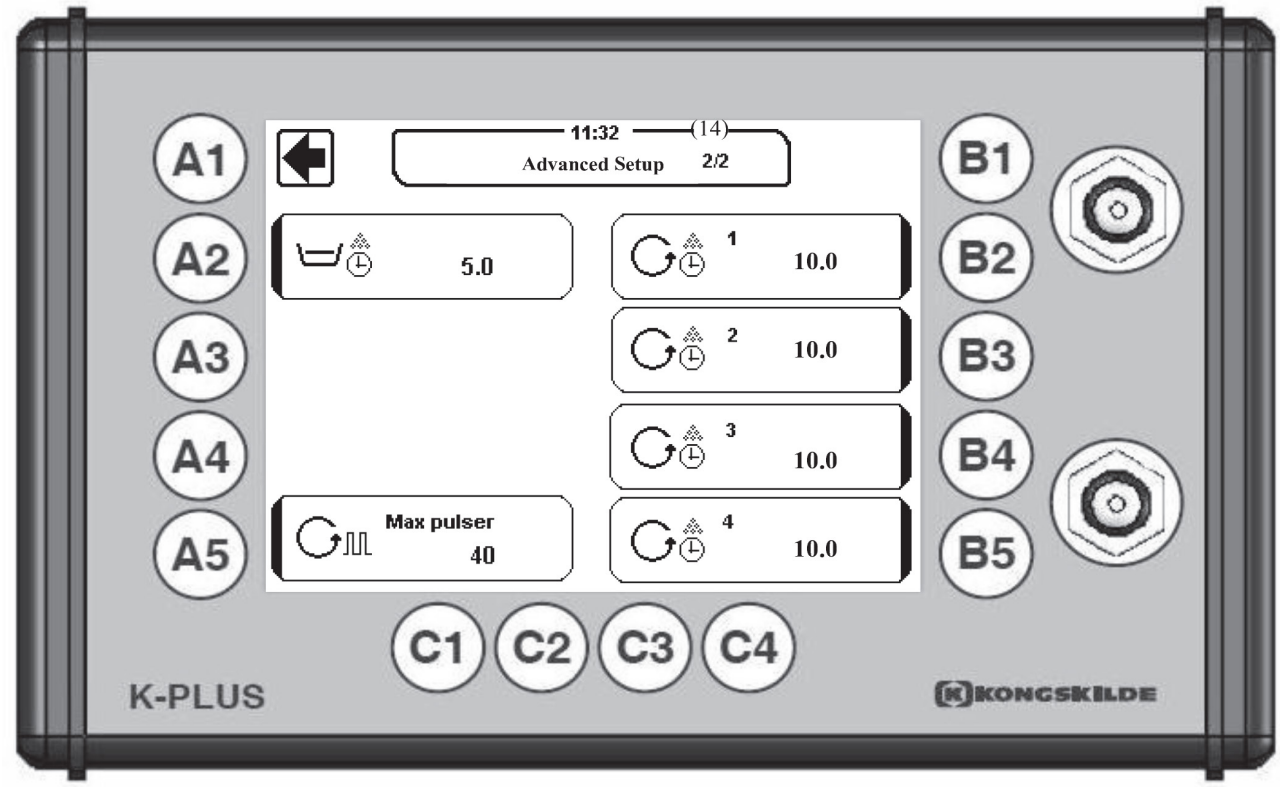


ADVANCED SETUP 1/2

Press and hold C4 button a few seconds to entering menu for Advanced Setup.

B2 The entered output rate can be changed (mechanical switch) during operation in steps of +/- 10% (standard setting).

The steps in % can be adjusted in the menu above. B2



ADVANCED SETUP 2/2

It is possible to set the maximum number of seconds between signals from feed shaft sensors, before an alarm is shown on the display. In some cases it is necessary to increase this time, if small quantities of material is spreaded and the machine is working with low forward speed. (long time between signals from sensor could be detected as the feed shaft has stopped).

A2	Seconds from empty hopper to an alarm is shown on the screen.
A5	Maximum number of pulses that are accepted from feed shaft sensor when feed shaft should stand still.
B2	Maximum number of seconds between signals from feed shaft sensor 1 when feed shaft should rotate.
B3	Maximum number of seconds between signals from feed shaft sensor 2 when feed shaft should rotate.
B4	Maximum number of seconds between signals from feed shaft sensor 3 when feed shaft should rotate.
B5	Maximum number of seconds between signals from feed shaft sensor 4 when feed shaft should rotate.

ALARMS DISPLAYED ON SCREEN

System Start
Starting

Low Voltage (E) (Elektronics)
Low Voltage (P) (Power)
High Power Cons. (A) (Ampere)

Part Shut Off Active
Feeding Active
No Speed!

Hopper 1 Empty

FEED SHAFT
STOP FEED SHAFT1 (**12m**: Right rear ; **18, 24m:** Left rear)
STOP FEED SHAFT2 (**12m**: Left rear ; **18, 24m:** Left front)
STOP FEED SHAFT3 (**12m**: Right front ; **18, 24m:** Right front)
STOP FEED SHAFT4 (**12m**: Left front ; **18, 20, 24m:** Right rear)

Feed roller1_rotates (**12m**: Right rear ; **18, 24m:** Left rear)
Feed roller2_rotates (**12m**: Left rear ; **18, 24m:** Left front)
Feed roller3_rotates (**12m**: Right front ; **18, 24m:** Right front)
Feed roller4_rotates (**12m**: Left front ; **18, 24m:** Right rear)

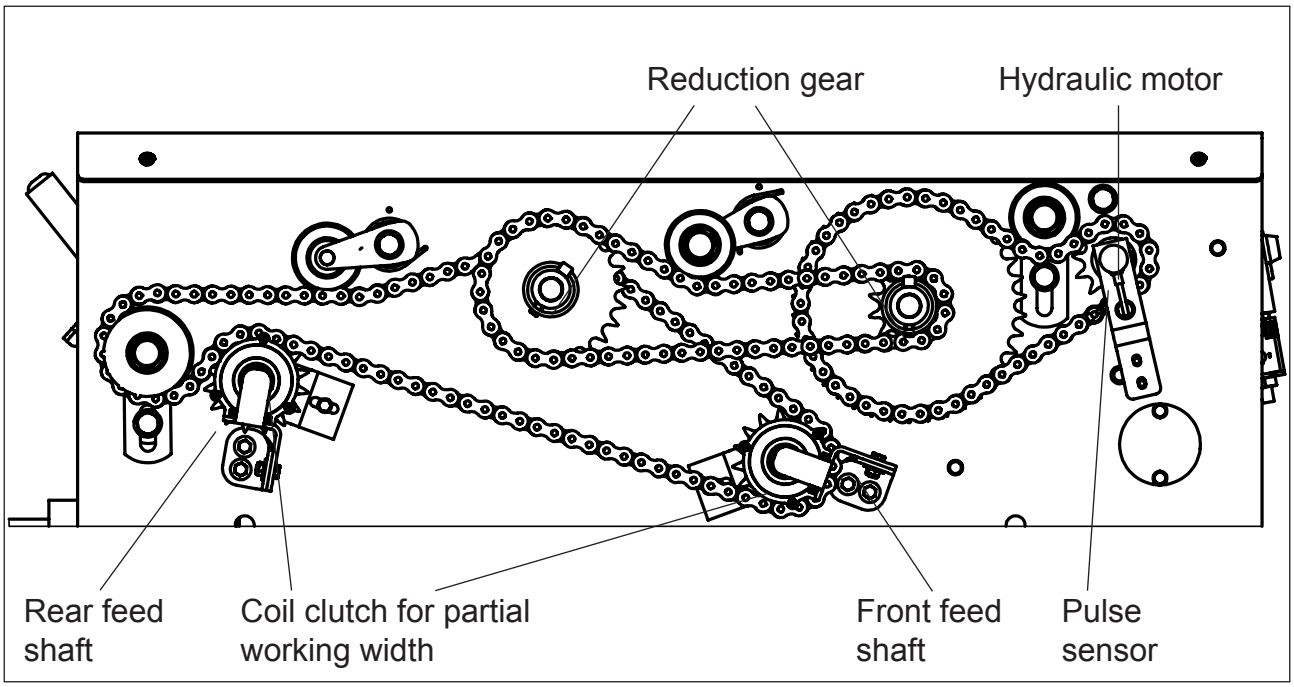
FAN
FAN RPM LOW
FAN RPS HIGH

4. DRIVE SYSTEM FOR THE METERING SYSTEM

The drive system consists of:

- A hydraulic motor with a proportional valve
- K-Plus system for adjustment of output rates
- Reduction gear for spreading “low rates”
- Clutches for partial shut off of working width
- Transmission and assembling parts

Drive system with a hydraulic motor and a proportional valve.



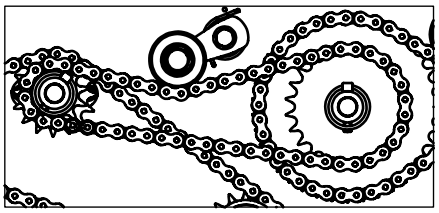
S4818-4824 Right hand side

HYDRAULIC MOTOR

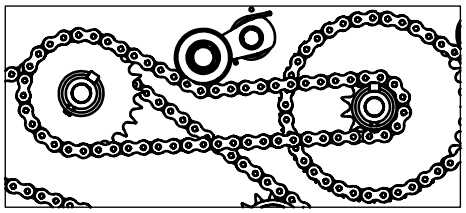
The machine is equipped with an electrically controlled proportional valve that maneuver the speed of the hydraulic motor. Adjustment of the output rate can be done from the driver seat in the tractor cab during operation.

REDUCTION GEAR

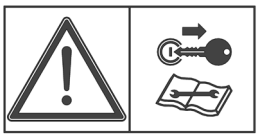
The reduction gear consists of one 12 and one 24 tooth sprocket and a chain. When spreading micro granulates or so small quantities of material, less than 50 Kg/ha, the hydraulic motor speed will be slow. Then the chain sprockets on the reduction gear should be reversed. When this is done a reduction of 1:2 is obtained see below.



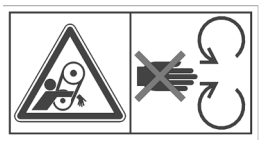
Normal



Reduced



Shut off engine and remove key before removing safety shields.



There could be a risk of crushing hands when carrying out maintenance work. Ensure that all shielding is correctly in place when maintenance is completed.

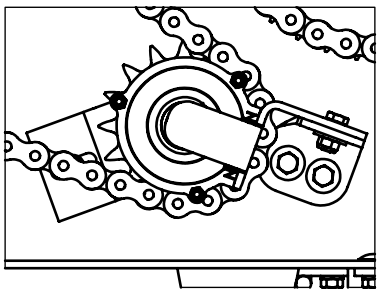
PARTIAL SHUT OFF

The working width of the machine may be reduced by means of the electrically controlled feed roller clutches.

For functional description on machines equipped with K-Plus system, see section 3. K-PLUS COMPUTER MONITORING AND CONTROL SYSTEM, OPERATION 1/2.

S 4812-4824 is equipped with four partial feed shaft shutoff clutches. The front and rear feed shafts are divided in two halves.

If the feeding mechanism is to be completely shut-off, the drive motor should be disengaged.



Electrically controlled feed shaft clutch for partial shut off controlled from the manoeuvre box in the tractor cab

5. METERING SYSTEM

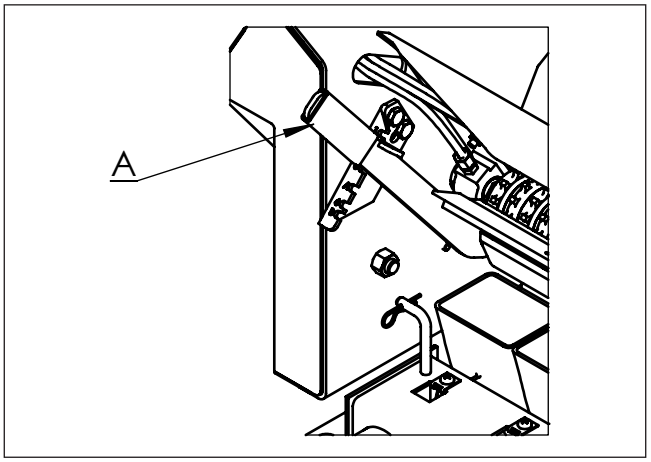
The metering from the hopper is by “toothed” nylon feed rollers, which rotate in adjustable rubber, feed gates. From the feed gates the fertilizer falls down into the ejectors from which it is transported through the hoses out to the spreader plates via a flow of air provided by the power take-off driven fan.

FEED GATE ADJUSTMENT

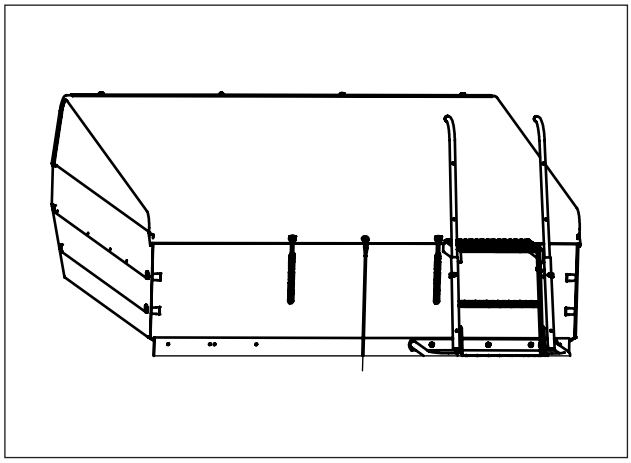
The lever **A** can adjust the distance between the feed gate and the feed roller. The size of the opening affect the amount being metered out. The opening should be adjusted so that seed and fertilizer can pass freely without being crushed or stacked.

In general, position 2 should be used since this setting gives the most consistent feed rate. Larger openings are used for coarse-grained granulated fertilizers. When a larger opening is used the spreading rate will also be increased to a certain extent.

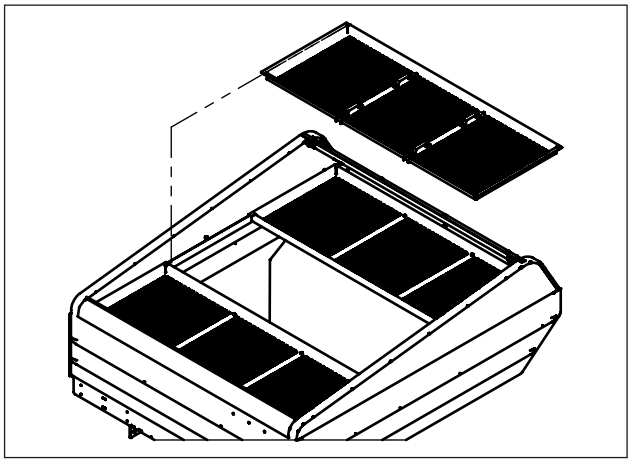
Rule:
For materials with a diameter not exceeding 4 mm, use position 2, for larger material go to position 4. An even and constant flow of the material should always be maintained.



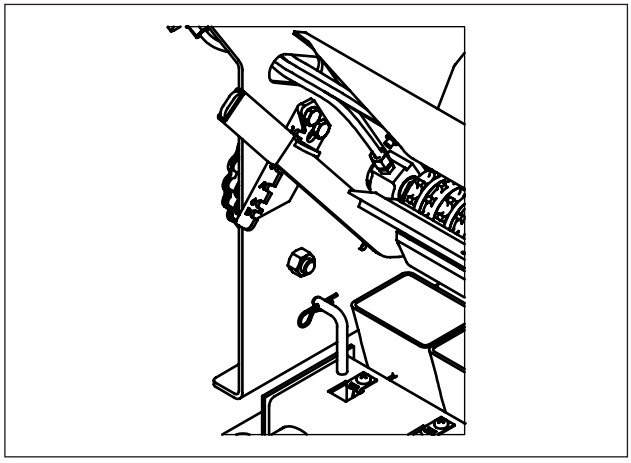
LOADING THE MACHINE



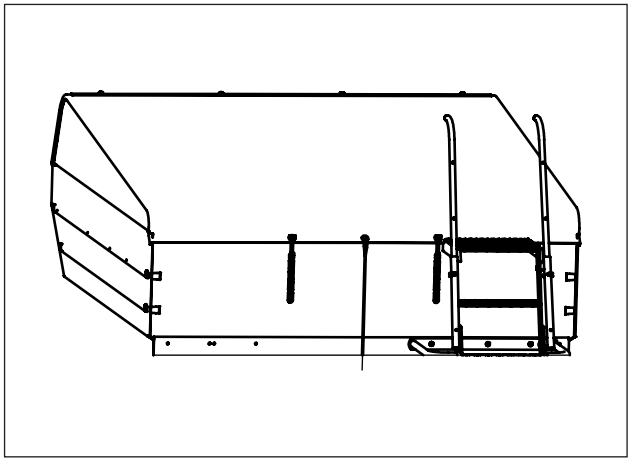
Enter the stair and release the spring loaded tarpaulin.



Check that the hopper is clean. The center hopper sieve can be removed if you need to enter the hopper.

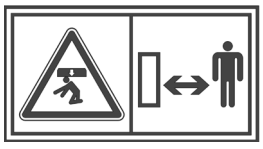


Make sure that the feed gates are set in position 2 before filling the hopper.
Filling the hopper with big bags:
Make a cut on each side and let the fertilizer fall out. Lift the bag and cut the bottom open.



Close the tarpaulin using the rubber straps.

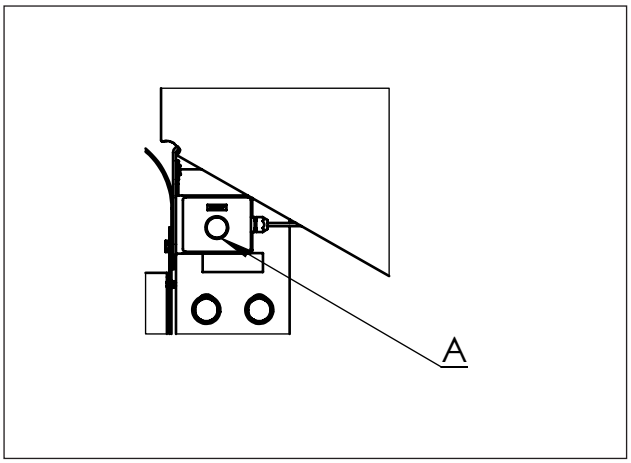
The hopper sieves may not be loaded with more than 150 kg!
It is forbidden to stay on the hopper during transport and operation!

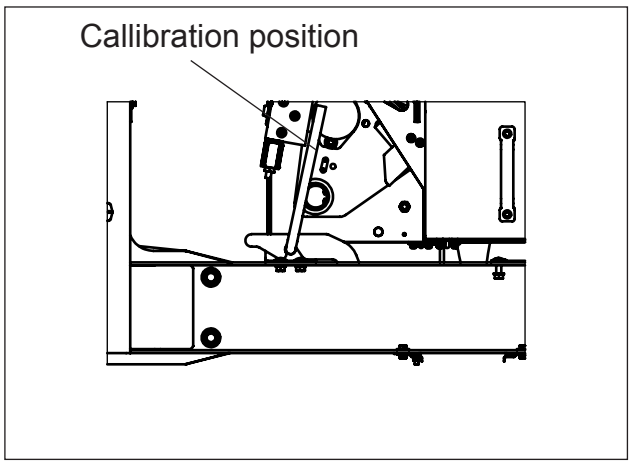


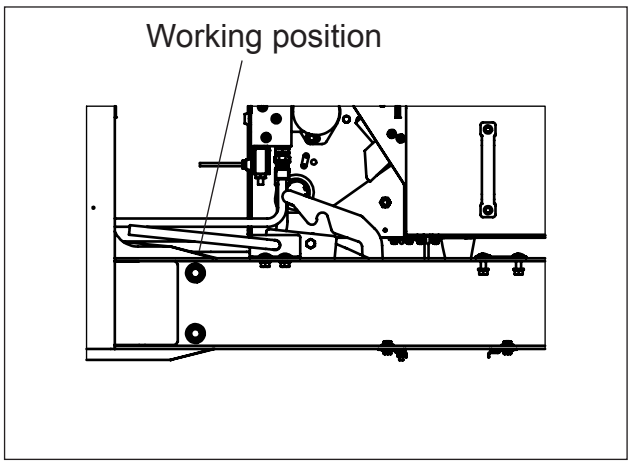
Under no circumstances, one can stay within the range of the load when the hopper is filled.

CALIBRATION TEST

1. Set the feed gates to the desired position for the fertilizer.
2. Fill the hopper.
3. Move the front loading ramp assembly by shifting the lever backwards.
4. Place the calibration trough into its test position.
5. Enter the calibration menu in the K-Plus monitor see 3. K-PLUS COMPUTER MONITORING AND CONTROL SYSTEM and press the Calibration button, **A**, behind the fan so that the drive starts and the seed/fertilizer are homogeneously filled around the feed rollers. Check that the seed/fertilizer passes freely between the feed rollers and the feed gates. If necessary adjust the feed gates.
6. Empty the test trough back into the hopper and put it back into test position.
7. Set the K-plus to test mode symbol flashes and press the calibration button and hold it until the test trough is filled to apr ¾. Use the scale to weight the collected sample and put the weight in Kg in to the K-plus calibration menu so that you get a pulse value. Repeat the test to check that the pulse value is constant.
8. Reset the machine to normal working position.



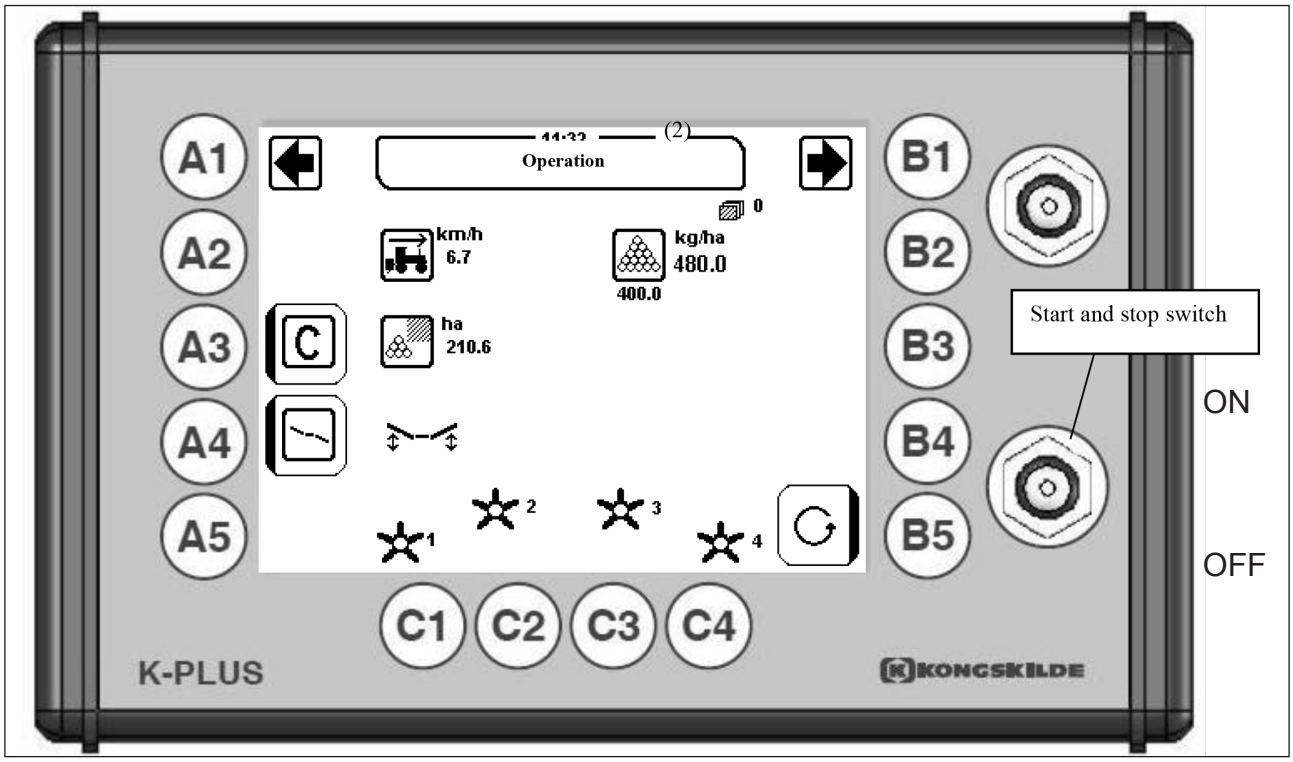




Keep your hands away from the feeding mechanism when doing the calibration test.

6. START WORKING IN THE FIELD

- Do a calibration test in order to assure that correct amount is being metered out.
- Release the mechanical transport locks for the spreader boom and fouled it out to working position.
- When starting: The fan is to be started first, in order to avoid damage to the universal joints on the power take-off shaft as well as unnecessary wear on the fan belts, the power take-off should be engaged at low engine rpm. The engine rpm can then be increased progressively until the power take-off shaft is running at normal rpm (540 rpm). The metering system can now be engaged. If the metering system is engaged before the fan is started, the fertilizer/seed will accumulate in the ejectors, which may cause blockages.
- When stopping: First stop the metering system, then the fan can be disconnected (Note! Lower the rpm of the fan prior to the power take-off being disconnected.)
- Set the desired output rate kg/ha in the Setup menu 1/3 (B2).
- When the hopper is filled and the machine is ready for work: Engage the oil pressure to the hydraulic motor and start the feeding mechanism by pushing the lower mechanical switch on the monitor upwards. The feeding mechanism will start as soon as the spreader is moving forwards and reach 1 km/h.
- The headlands should be at least 24 metre wide.
- At all times during driving (working) all safety guards must be correctly mounted.
- The first run (bout) on the headland should be driven around in the corners of the field. Note! Drive in left-hand direction (counter clockwise). This due to that the speed sensor is mounted on right hand wheel.
- Do necessary adjustments to the spreader boom.



7. TRANSPORT DRIVING

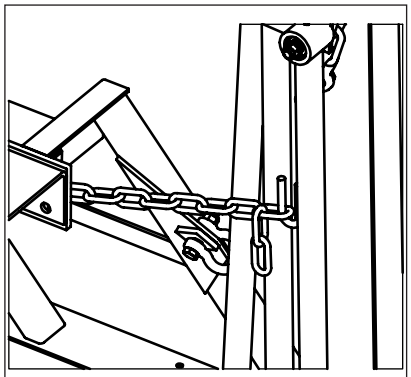
- Check that the machine is properly connected to the tractor.
- Crank up the support stand and move it to transport position, see section 2. TECHNICAL DESCRIPTION, CONNECTING THE MACHINE TO THE TRACTOR
- Check that the boom sections are in transport position and secured with the mechanical transport locks, see section 8. SPREADER BOOM.
- Connect the 7-pin connector for running lights and check the functions, see section 2. TECHNICAL DESCRIPTION, CONNECTION TO THE TRACTOR, RUNNING LIGHTS.
- Check that the lower links on the tractor can not get in contact with the PTO-shaft when turning.
- Check the tyre pressure on tractor and machine and also that the bolts that holds the wheels are tightened.
- Connect the hose for the hydraulic brakes if the machine is equipped with brakes, see section 2. TECHNICAL DESCRIPTION, HYDRAULIC BRAKES.

8. SPREADER BOOM

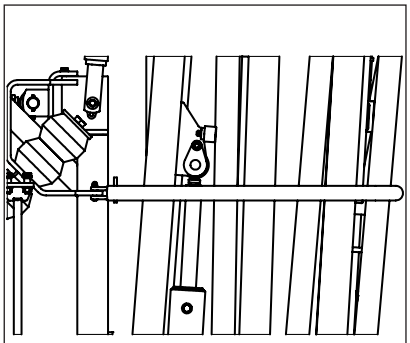
The spreader boom consists of three or four sections on each side of which the outermost section is fitted with a safety release device.

One double-acting hydraulic outlet on the tractor is used for the folding and unfolding of the booms. To ensure reliable operation and a long life, it is essential that the linkage system of the booms is regularly checked and if necessary adjusted.

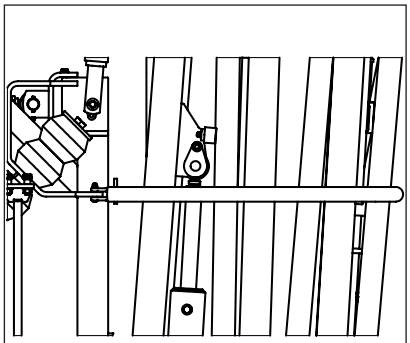
During transportation the spreader booms must be folded and secured for transport.



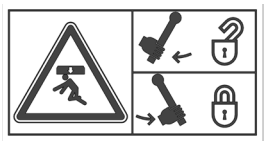
Mechanical transport locks S4812



Mechanical transport locks S4818



Mechanical transport locks S4824



When the boom sections are raised to transport position the booms must always be secured with the mechanical transport locks. Don’t pass under a raised spreader boom.

The outer section of the spreader boom is spring loaded when folded.

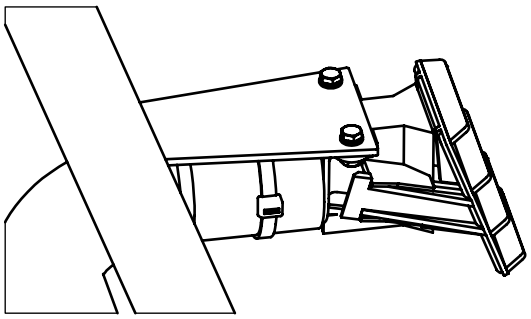
All maintenance work must be done when the boom is unfolded to working position and properly supported.

Under no circumstances, one can stay within the range of the spreader when the tractor is running.

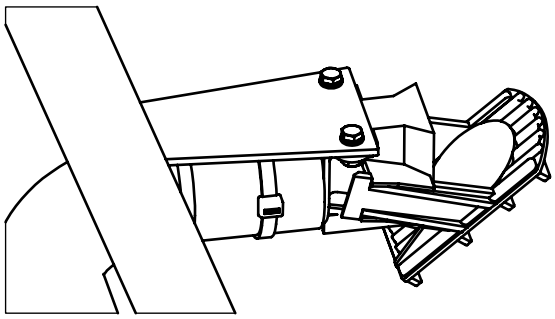
SPREADER PLATES

S 4812 The turnable spreader plates on the boom should normally be fitted turned downwards but when top dressing growing crops they can be turned upwards.

S 4818 – S 4824 For an uniform distribution, the plates should always be turned upwards.



Spreader plate turned downwards



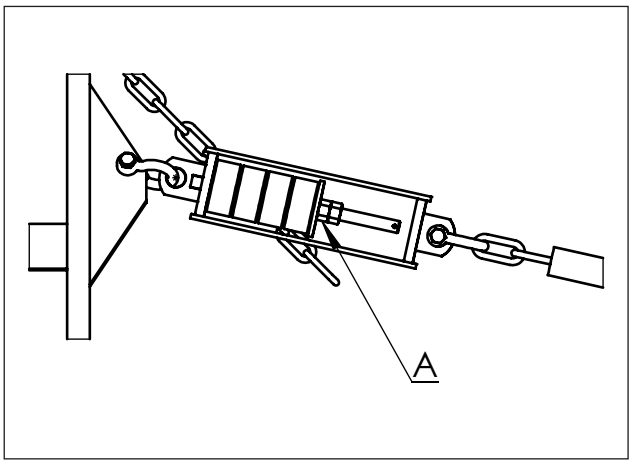
Spreader plate turned upwards

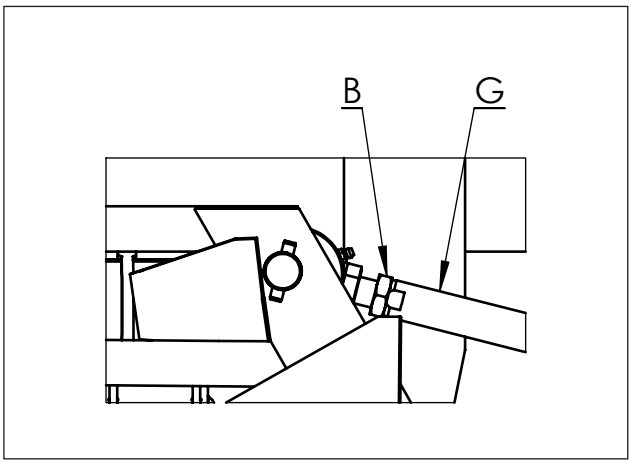
Adjustment and maintenance of the spreader booms
The machine should always be connected to a tractor when carrying out adjustment.
The spreader booms should be unfolded to working position and properly supported or mechanically locked in transport position.

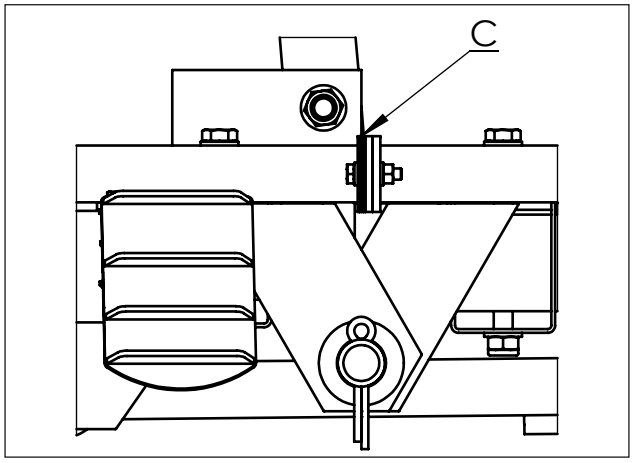
SPREADER BOOM 12 METER

To ensure reliable operation and a long life, it is essential that the linkage system of the booms is regularly checked and, if necessary, adjusted. Adjustments are made with the booms in their operating position. If the outer ends of the booms points downwards or if there is space at point **C**, the following adjustments should be made:

- Slacken the nut **A** in the rubber shock absorber a few turns.
- Adjust the inner boom section by first loosening lock nut **B**, then by turning the piston rod at the wrench grip **G** until the inner section is vertical, then retighten lock nut **B**.
- Tighten nut **A** to take up play at **C**. Should the middle section point upwards, the spacers (part no. 4165 11181 87) must be placed under the plates at **C**. When the play has been eliminated, the nut **A** must be tightened further four turns to give the correct pre-tensioning.

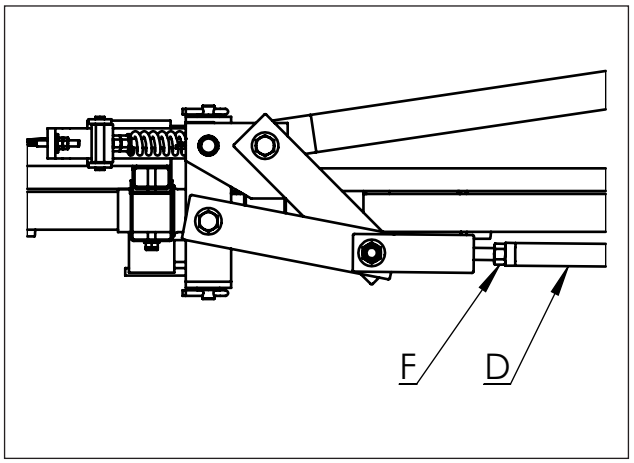


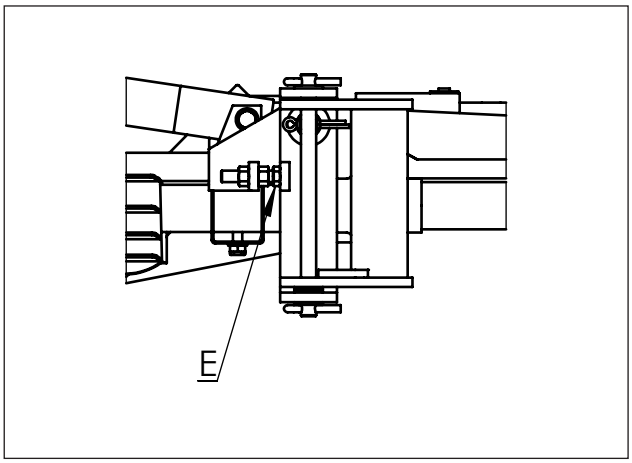




THE OUTER BOOM SECTIONS ARE ADJUSTED AS FOLLOWS:

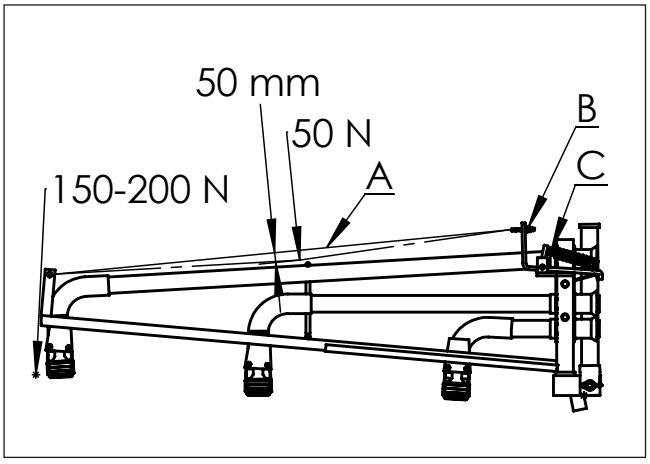
- Remove rod **D** by removing the nut, which holds the rubber bushing, and remove the rod from its mounting pin.
- Adjust bolt **E** so that the outer section of the boom aligns with the centre section. Then loosen the bolt two turns, which will make the outer boom point downwards.
- Loosen nut **F** and adjust the length of rod **D** so that it can be re-fitted onto its mounting pin without altering the position of the outer section. Refit rod **D** and tighten the nut holding the bushing and nut **F**.
- Tighten bolt **E** so that the outer boom section comes in line with the centre section again. Then lock the bolt **E** with the lock nut.





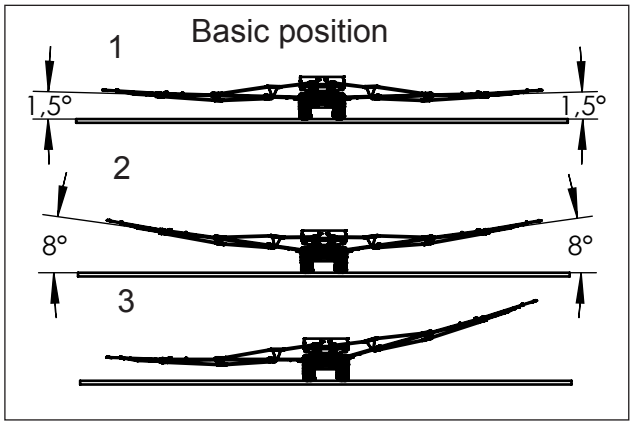
OUTER SECTION OF BOOM

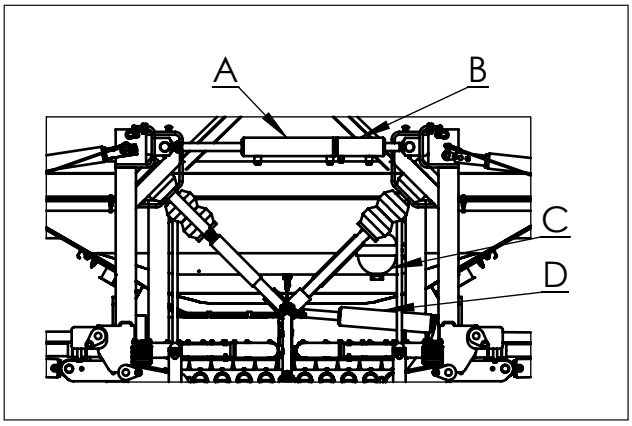
When the outer boom is extended and locked in working position, wire **A** is adjusted by screw **B** so that a deflection of 50 mm is obtained at a force of 50N (5 kp). Spring **C** is then adjusted until an actuating force of 150-200N (15-20 kp) is reached at the outer end of the boom.



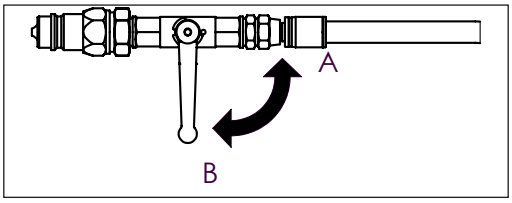
SPREADER BOOM 18-24 METER

The 24-meter boom has hydraulically buffered side-wings to reduce the movements of the wings when driving in rough conditions. The angle of the side-wings can be adjusted manually or hydraulically. Adjust so that the outer ends of spreader boom are 350-400 mm higher than the centre section. (**1, A**). When driving in hilly conditions the horizontal angle (**2, D**) of the whole boom can be hydraulically adjusted to follow the surface. The boom is suspended and efficiently buffered by one accumulator (**C**) connected to hydraulic cylinder (**B**). The pressure should be adjusted to apr. 8-12 MPa. The pressure is displyed on the pressure gauge in front of the hopper





Adjustment of pressure for boom suspension:
Connect the hose with white ID-strap to the tractor and open the shut of valve (**A**). Adjuste the pressure to 8-12 MPa on the pressure gauge. Close the valve (**B**). Also see section 2. TECHNICAL DESCRIPTION, HYDRAULIC SYSTEM and section 9. WIRING AND HYDRAULIC DIAGRAMS, HYDRAULIC DIAGRAM.



In order to maintain good function and durability of the spreader boom, it is importent to check and adjust the adjust the boom if nessesary.

9. MAINTENANCE

New machine
When the machine has been in operation a couple of hours, check that all bolts and nuts still are correctly tightened. Especially the bolts holding the wheels and the drawframe/drawbar. Continue to check these in regular intervals.

Uniformity of spreading
The uniformity of spreading depends largely on the alignment of the spreader plates. Ensure that they are mounted in line with the attachment plates welded on the boom.
Uniformity of spreading also depends on an even flow of material through the 20 feed rollers.

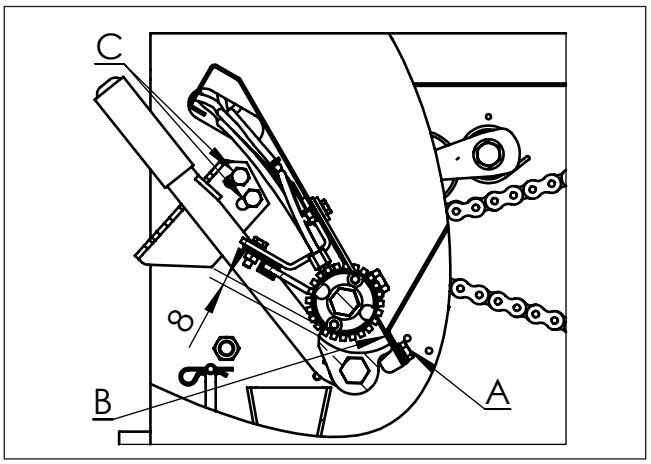
Testing
Testing is carried out by attaching sacks of a none air-resistant material around the spreader plates and by feeding out material either by driving the machine in a normal manner or by running the hydraulic motor. About 2-3 kg should be feeded into each sack to ensure the accuracy of weighing.

Right/left side (front/rear feed rollers)
Add the weights of the sacks from the 10 left-hand spreader plates and compare the result with the total weight of the 10 right-hand spreader plates. The difference between the two sides should be less than 5 %.

Individual feed rollers
Calculate the average weight by totalling the weights of all sacks and divide it by 20. Individual spreader plates should not deviate from the average by more than 7 %.

Adjustment
Right/left side
The output rate may be increased on the side which delivers lower by adjusting the adjustment plate in the long holes **C**.

Uneven delivery along the feed roller shaft
Adjustments can be made by loosening the screws position **A** in figure and raising or lowering the gates in the oblong holes. Adjustment upward will reduce the output rate.



Individual feed rollers
Due to overlapping, the quantity discharged by an individual feed roller may deviate without affecting the spreading result. The feed rollers are not individually adjustable.

Basic adjustment
With the feed gate lever in position 2, the clearance between the outer lip of the feed gate and the bottom of the roller must be 8 mm.
The inner lip of the gate must be located below the bottom edge of the discharge opening (position **B** in figure) in order to avoid an uneven flow to the feed roller.

Blocked feeding system
Dimount the reduction gear and open feed gates to position 6 on one of the feed shafts. Use one open spanner to turn the feed shaftaround. Check that fertilizercomes out in every feed gate. Do the same procedure on the feed shafts. Put the feed gates to position used before and mount the reduction gear.

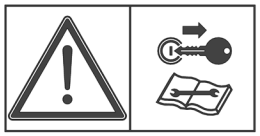
Checking the towing eye wear
The pick up towing eye Ø50mm should be replaced when the diameter has increased by more than 2,5mm.
NOTE! It is not allowed to weld on the eye!

PTO-shaft
Check that the PTO guard not are damage. Damaged part must be replaced before the machine is used.

Grease all lubrications points
Grease the machine according to the lubrication interval instruction. see setion 9. MAINTENENCE, LUBRICATION INSTRUCTION.

Support the boom
When doing maintenance work on the machine it is importent to support the machine. The spreader boom must be unfolded to working position and properly supported prior to maintenace work.

Hydraulic system
After that work has been carried out on the hydraulic system, air in the systemhas to be evakuated. Make sure that no one is in the working zon. Activate all hydraulic cylinders so that they do a full stroke (from min to max stroke). This might have to be repeted.



Shut off engine and remove key before performing maintenance, repair work or before removing safety shields.

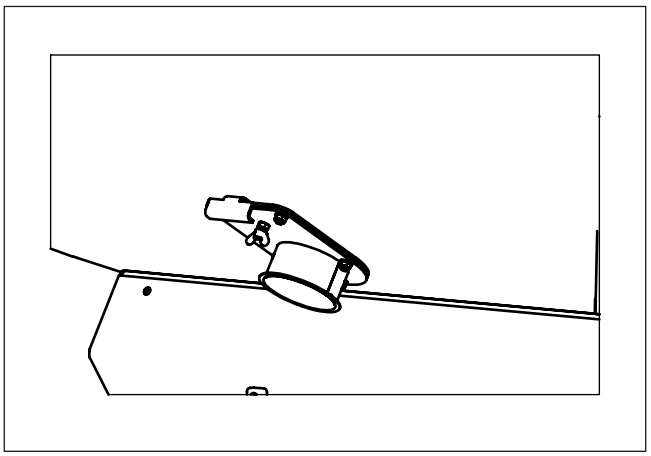
Use extreme caution around suspected hydraulic leaks or damaged hose lines. Hydraulic fluid under pressure can be extremely dangerous. Always depressurise the system before a hydraulic pipe, union or hose is loosened. Remember to tighten all connections prior to pressurize the system. Wear hand and eye protection.

The outer section of the spreader boom is spring loaded when folded. All maintenance work must be done when the boom is folded out to working position and properly supported.

EMPTYING, CLEANING AND STORAGE

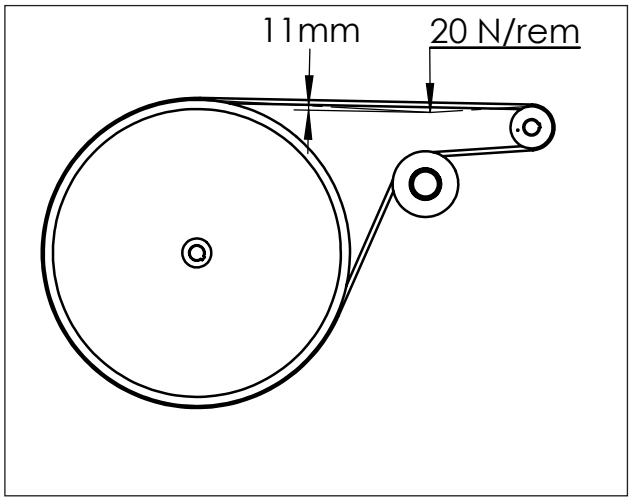
- The machine must always be emptied and cleaned after use.
- The hopper is emptied by opening the emptying shutter one on each side of the machine.
- The remaining fertilizer can be collected in the test trough when folding down the feed gates completely.
- When the hopper is empty, start the fan to remove any material that may remain in the cups.
- The machine can now be washed down with water, provided that the fan is in operation. NOTE! High pressure washers should not be used on electric components.
- Allow the machine to dry thoroughly before using it again. The drying time can be significantly shortened if compressed air is used to dry parts of the machine where the flow of air from the fan is low (feed rollers, feed gates and inside the hopper).
- When the machine is to be unused for longer periods, as well as at the end of the season, it should be lubricated in accordance with the lubricating instructions.
- The machine should be kept under cover in a dry place and with a tarpaulin over it to prevent foreign objects from falling into the hopper.

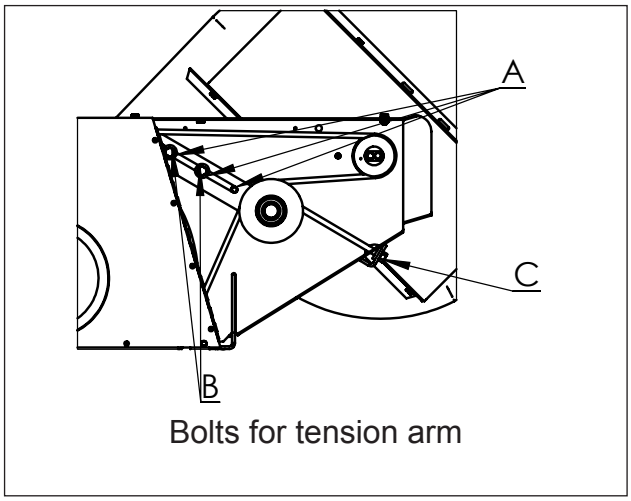
NOTE! If the machine is oiled-in, ensure that no oil comes in contact with the feed gates or any other rubber parts.



FAN BELT TENSION

Retighten the fan belts after a few hours of operation. Check the fan belt tension at least every hounded (100) hour of operation.

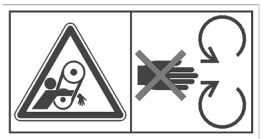




Bolts for tension arm

Loosen the bolts (**B**) in the arm and adjust the belt tension with the set screw (**C)**. **Note!** The bolts (**B**) can be reposioned (**A**) if the end of the elongated hole is reached.

NOTE! Never run the fan with higher rpm PTO than what it is equipped for (540 rpm, 700 rpm, 825 rpm or 1000 rpm).



Shut off engine and remove key before removing safety shields, there could be a risk of crushing hands when carrying out maintenance work. Ensure that all shielding is correctly in place when maintenance is completed.

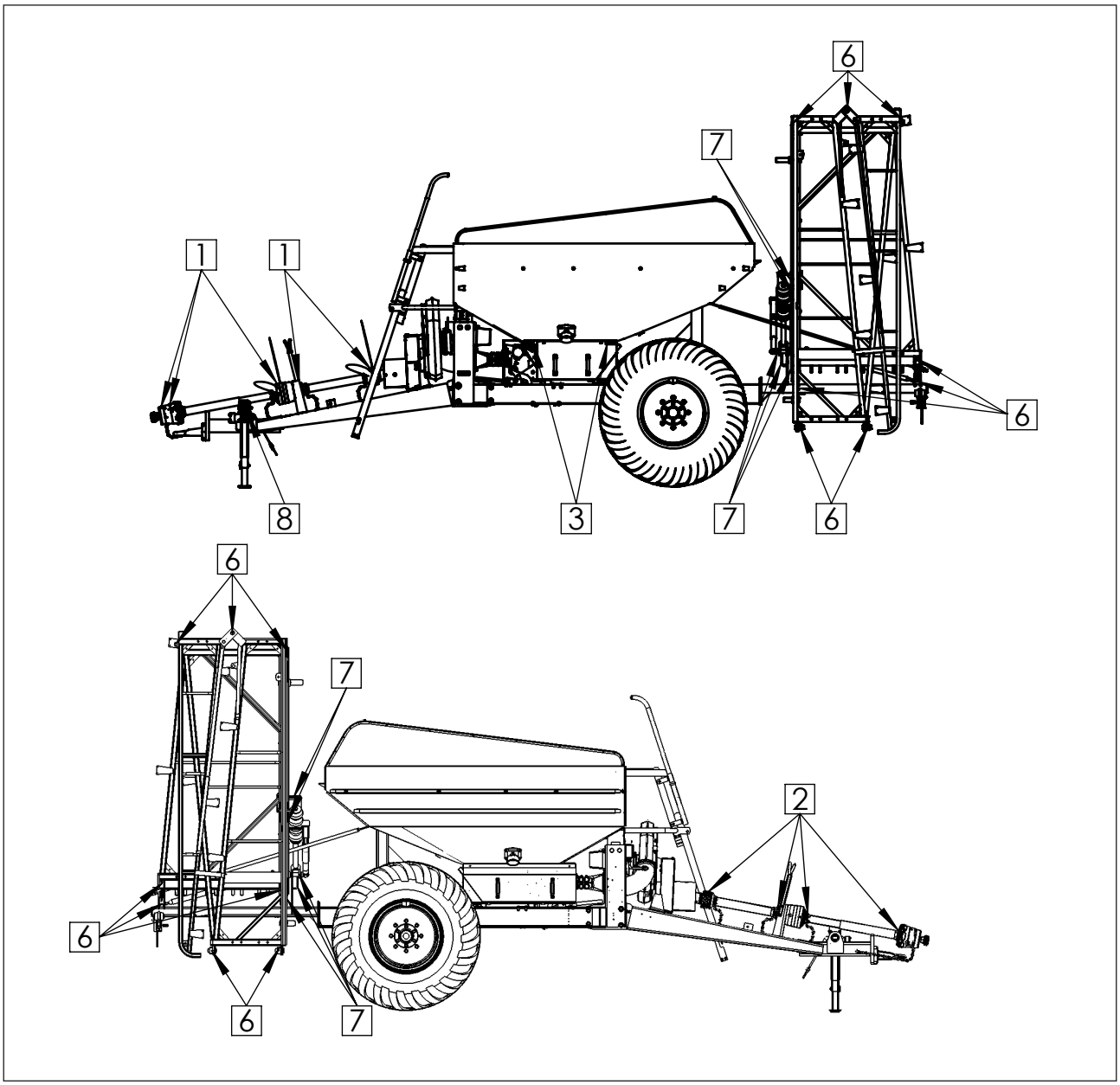
LUBRICATION INSTRUCTION

Lubrication points	Lubricant		Lubrication intervals			S 4812-S 4824
	Ball-bearing grease	Oil	Dayly	200 ha	Once per season	No. greasing points
PTO Shaft						
1 PTO shaft	X					6
2 PTO shaft guard	X					4
Chain Transmission						
3 Bearing for feed shaft	X			X		8
4 Chains		X			X	
5 Tensioning roller plastic		X			X	
Spreader boom						
7 Joints on boom	X			X		0-20
8 Hydraulic cylinders	X			X		4-12
Vatious						
9 Wheel hubs	X			X		2

** For lubication intervals and lubricat quality, see separate instruction manual for P.T.O shaft.

NOTE! Make sure that the rubber parts (feed gates, air hoses, drive belts, etc) do not come into contact with oil or grease.

LUBRICATION DIAGRAM



TIGHTENING THE BOLTS

Bolts of quality 8.8, 10.9 and 12.9 are used on the WingJet. When replacing these bolts, ensure that the same quality bolts and nuts are used. It is easier to tighten bolts and nuts to correct tightening torque, if they are lubricated with oil.

The following tightening torque should be used for the different bolts:

Tightening torque's

Quality	Size	Torque	
		Dry bolts and nuts	Bolts and nuts lubricated with oil
8,8	M12	81 Nm	70 Nm
8,8	M16	197 Nm	170 Nm
8,8	M18	275 Nm	236 Nm
8,8	M20	385 Nm	330 Nm
8,8	M24	665 Nm	572 Nm
8,8	M30	1310 Nm	1127 Nm
10,9	M12	114 Nm	98 Nm
10,9	M16	277 Nm	238 Nm
10,9	M20	541 Nm	465 Nm
10,9	M24	935 Nm	804 Nm
10,9	M30	1840 Nm	1582 Nm
12,9	M16*	333 Nm	286 Nm
12,9	M20	649 Nm	558 Nm
12,9	M24	1120 Nm	963 Nm

Always keep the nuts and bolts on the machine properly tightened.

WHEEL DIMENSIONS / RECOMMENDED INFLATION PRESSURE AT MAX LOAD

S 4812

Tyre	Speed	Max load (kg)	Tyre pressure kPa (bar)
600/55-26.5	10	6000	80 (0,8)
	30	6000	100 (1,0)
800/40-26.5	10	6000	50 (0,5)
	30	6000	80 (0,8)
800/45-30.5	10	6000	50 (0,5)
	30	6000	50 (0,5)
420/85R 34	10	6000	140 (1,4)
(16.7 R 34)	30	5300	160 (1,6)
340/85R 38	10	6000	210 (2,1)
(13.6 R 38)	30	4000	160 (1,6)

S 4818

Tyre	Speed	Max load (kg)	Tyre pressure kPa (bar)
600/55-26.5	10	6000	80 (0,8)
	30	6000	100 (1,0)
800/40-26.5	10	6000	50 (0,5)
	30	6000	80 (0,8)
800/45-30.5	10	6000	50 (0,5)
	30	6000	50 (0,5)
420/85R 34	10	6000	160 (1,6)
(16.7 R 34)	30	4900	160 (1,6)
340/85R 38	10	6000	210 (2,1)
(13.6 R 38)	30	3600	160 (1,6)

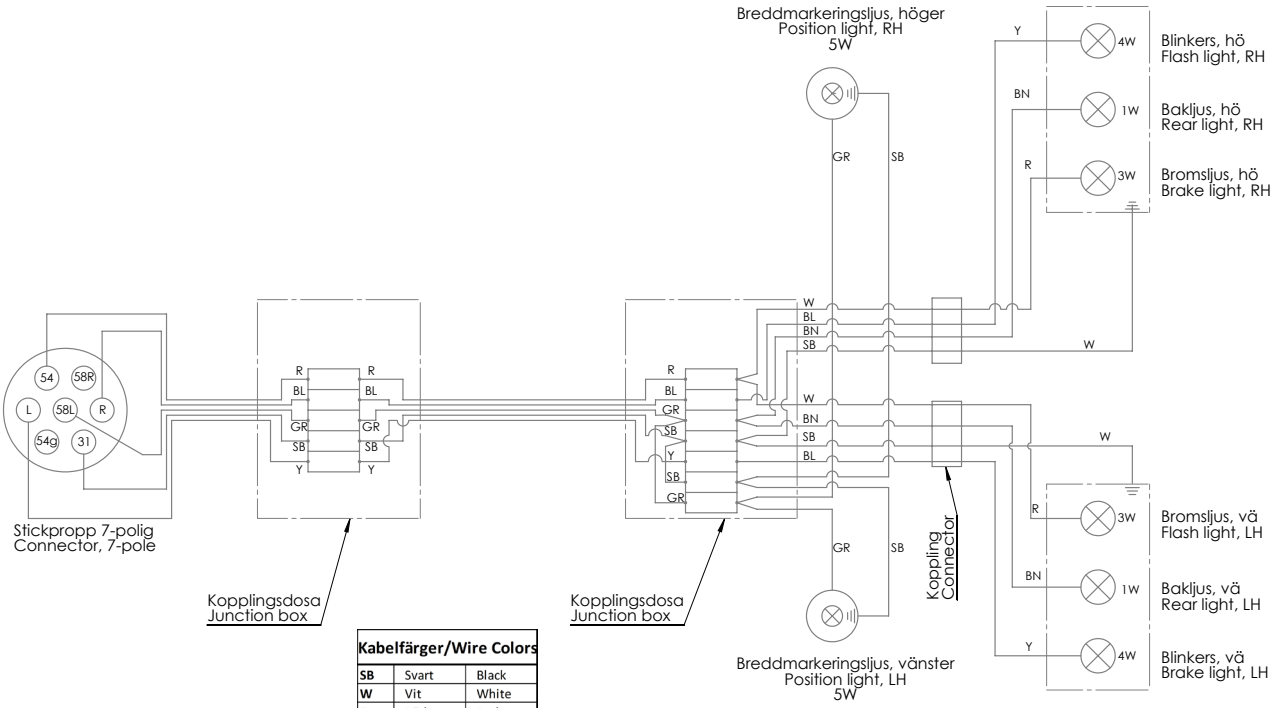
S 4824

Tyre	Speed	Max load (kg)	Tyre pressure kPa (bar)
600/55-26.5	10	6000	80 (0,8)
	30	6000	130 (1,3)
800/40-26.5	10	6000	50 (0,5)
	30	6000	80 (0,8)
800/45-30.5	10	6000	50 (0,5)
	30	6000	80 (0,8)
420/85R 34	10	6000	180 (1,8)
(16.7 R 34)	30	4200	160 (1,6)
340/85R 38	10	5500	210 (2,1)
(13.6 R 38)	30	2900	160 (1,6)

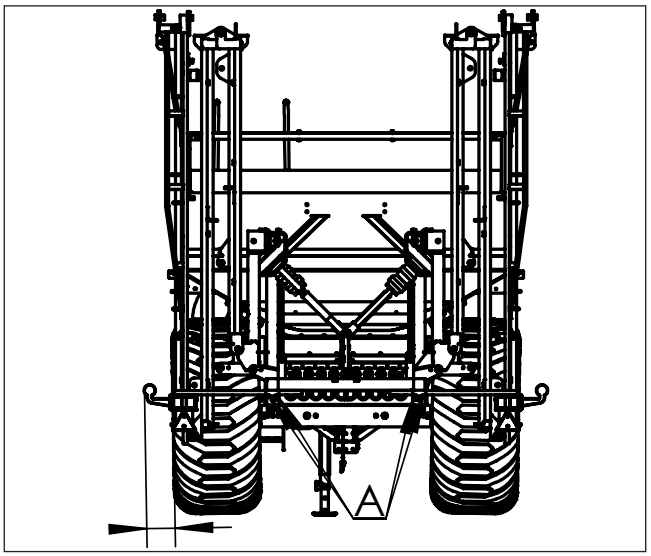
10. WIRING AND HYDRAULIC DIAGRAMS

WIRING DIAGRAM –RUNNING LIGHTS

The electrical system is divided in two separate circuits, control system and running lights. The rear- and side marking lights are standard on all machines and they are connected according to international standard (see wiring diagram below).



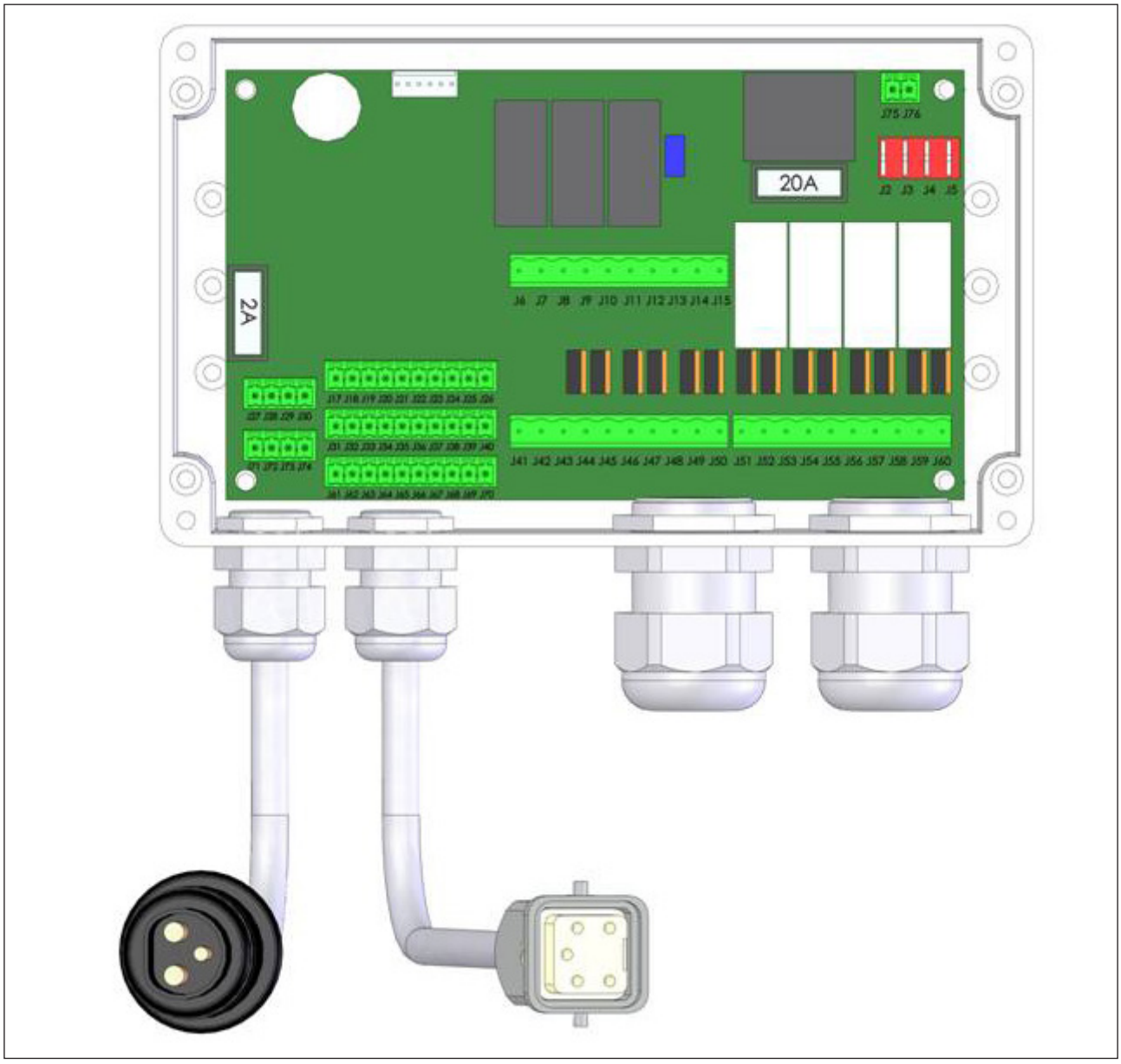
Kabelfärger/Wire Colors		
SB	Svart	Black
W	Vit	White
R	Röd	Red
BL	Blå	Blue
Y	Gul	yellow
GN	Grön	green
GR	Grå	Grey
BN	Brun	Brown
P	Rosa	Pink
VO	Violett	Violet
OR	Orange	Orange



The position lights can be adjusted to different trackwidths. Loosen two screws **A** and adjust the lights so that they reach otuside the outer walls of the wheel.

CONNECTION OF THE POWER FED

- K-Plus is an electronic monitoring and control system.
- The system consists of two units, manoeuver/control unit and one machine/ intelligence unit.
- The monitor is to be mounted in a suitable place in the tractor cabin.
- The communication and power fed between the two units are done through a Comkabel.
- The machine unit is power fed from the tractor.
- The printed circuit board is protected by two fuses placed in the machine unit, one 2A for the electronic and a 20A for the power fed.



WIRING DIAGRAM K-PLUS MACHINE UNIT

Function	+ Color	- Color	In/Output
12V Power	J2 (BL,Y)	J3 (SB, GR)	
12V Electronic	J27 (R)		
Monitor COM-cable			
12V	J29 (BN)	J30 (W)	
CAN H			J32 (Y)
CAN L			J31 (GN)

Blower	J62 (BN)	J67 (BL)	J34 (SB)
Speed	J61 (BN)	J68 (BL)	J36 (SB)
Level sensor	J64 (BN)	J69 (BL)	J35 (SB)
Diverter valve	J53 (GR)		J51 (SB)
Actuator	J56 (GR)	J57 (SB)	
Feedshaft sensor*	J64 (BN)	J70 (W)	J21 (Y)
Horizontal sensor*			

*Option

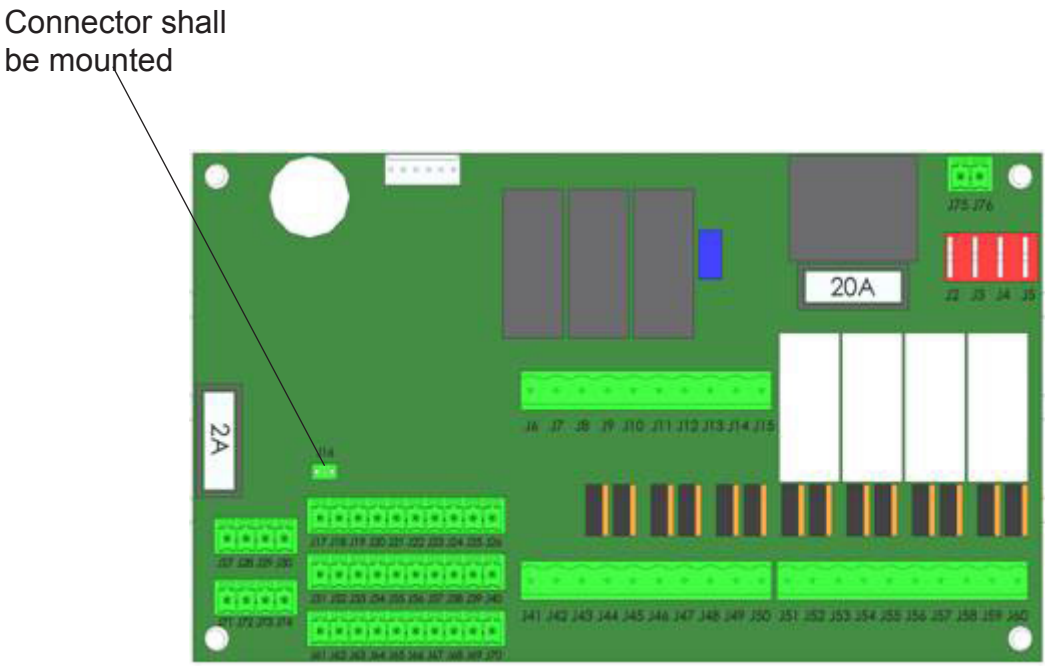
1/4 Closure, 18/24 m

Left rear			
Coupling	J43 (BN)		J42 (BL)
Rotation sensor		J67 (SB)	J19 (W)
Left front			
Coupling	J43 (BN)		J44 (BL)
Rotation sensor		J69 (SB)	J20 (W)
Right front			
Coupling	J46 (BN)		J47 (BL)
Rotation sensor		J70 (SB)	J22 (W)
Right rear			
Coupling	J46 (BN)		J50 (BL)
Rotation sensor		J67 (SB)	J33 (W)

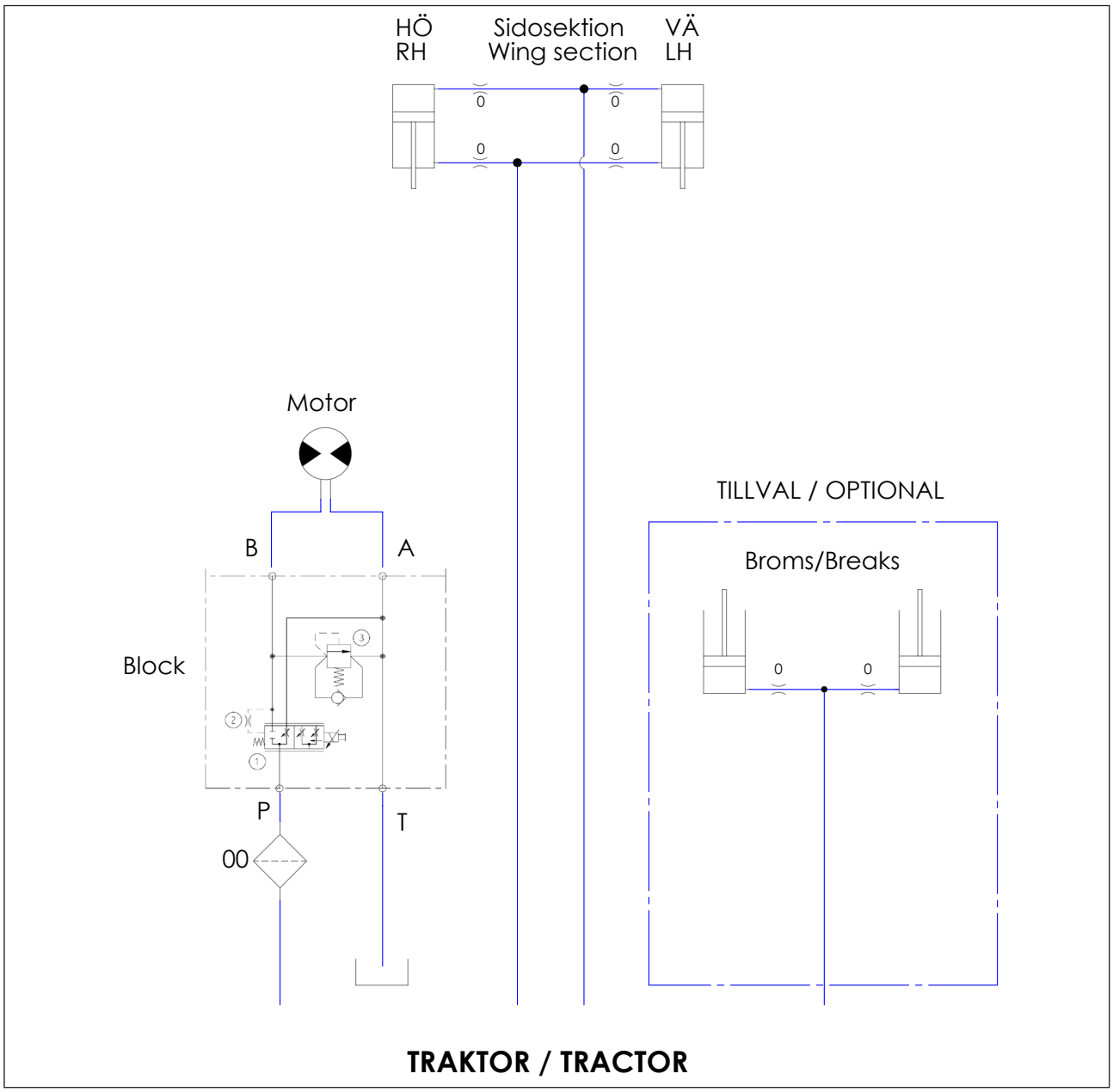
Wire Colours	
SB	Black
W	White
R	Red
BL	Blue
Y	Yellow
GN	Green
GR	Grey
BN	Brown
P	Pink

1/4 Closure, 12 m

Left rear			
Coupling	J43 (BN)		J44 (BL)
Rotation sensor		J69 (SB)	J20 (W)
Left front			
Coupling	J46 (BN)		J50 (BL)
Rotation sensor		J68 (SB)	J33 (W)
Right front			
Coupling	J46 (BN)		J47 (BL)
Rotation sensor		J70 (SB)	J22 (W)
Right rear			
Coupling	J43 (BN)		J42 (BL)
Rotation sensor		J67 (SB)	J19 (W)



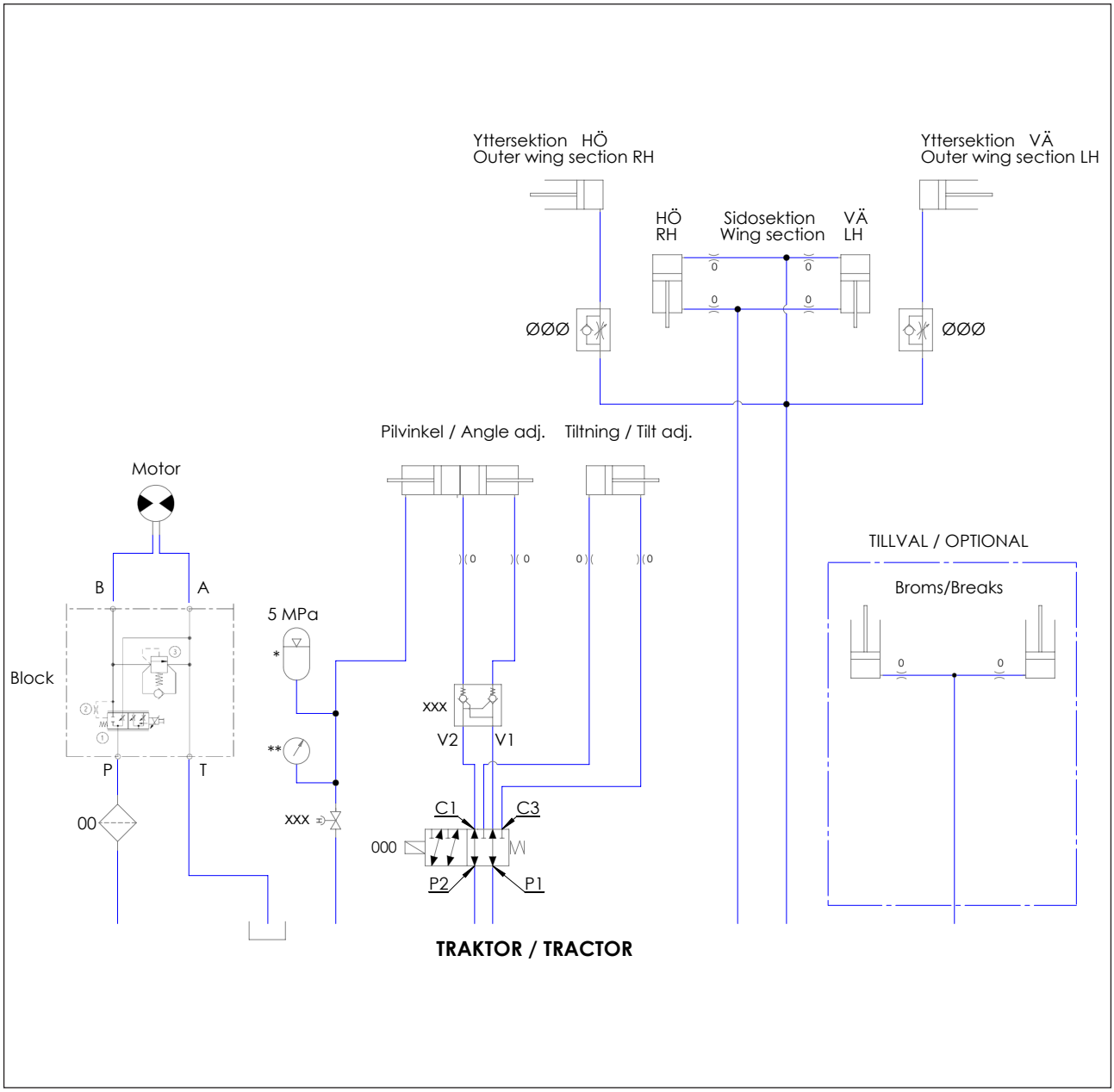
HYDRAULIC DIAGRAM S4812



FUNCTIONAL DESCRIPTION

o **Fixed restrictor:** Reduce the speed of the side sections and the brakes.

HYDRAULIC DIAGRAM S4818-4824



FUNCTIONAL DESCRIPTION

o **Fixed restrictor:** Reduces the speed of the side sections.

øøø **Adjustable restrictor no return valves:** Adjusts the speed of the outer side wings.

*** **Pilot operated check valve:** Locks the lift cylinder for the height of the outer wings.

* **Accumulator:** Protects the spreader boom and works as suspension.

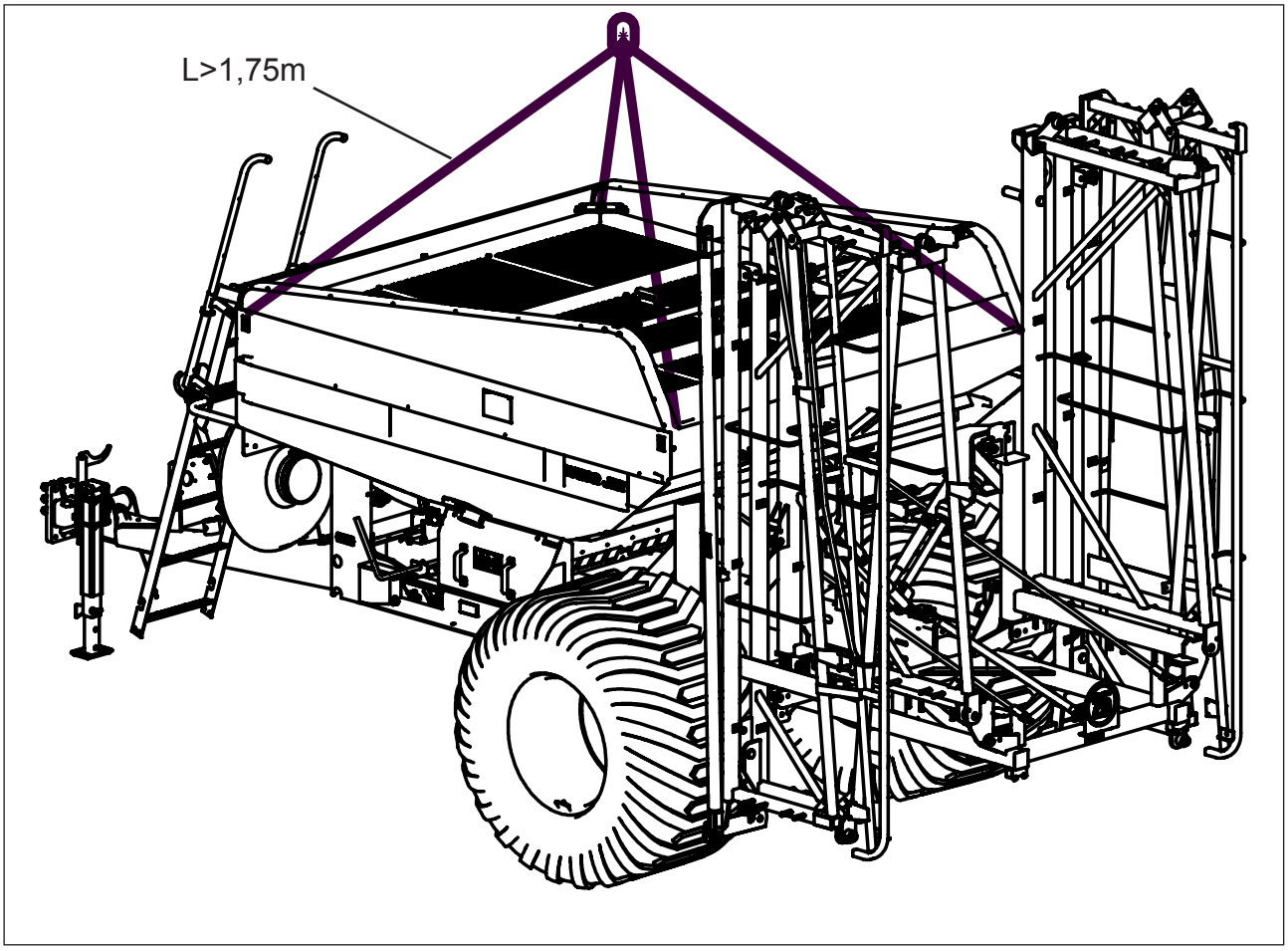
** **Pressure gauge:** Shows the pressure in the accumulator suspension
Pressure 8 – 12 MPa.

ooo **Diverter valves:** Is used to switch function, between angle of side wings and the horizontal adjustment cylinder.

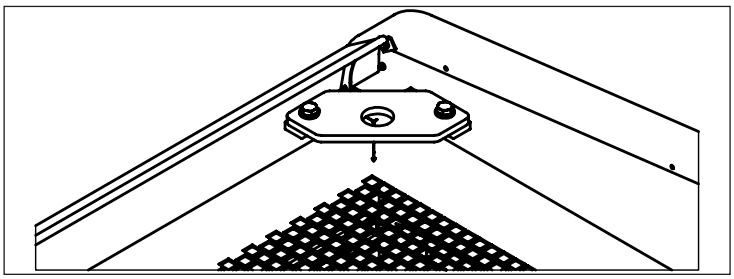
xxx **Shut off valve:** Block the filling hose to the accumulator.

11. LIFTING POINTS

Loading and unloading the machine.
Only use lifting equipment in good condition that comfotably hold the wheight.



The machine may only be lifted in the marked lifting points.



It is förbidden to be under or near the machine when it is lifted.

12. TECHNICAL DATA

Model	Working width (m)	Hopper volume (liter)	Number of out-lets		Recom-mended tractor size (hk)	Machine weight* (kg)	
S4812	12	4800	20		80	1800	
S4818	18	4800	18		90	2450	
S4824	24	4800	20		100	3550	