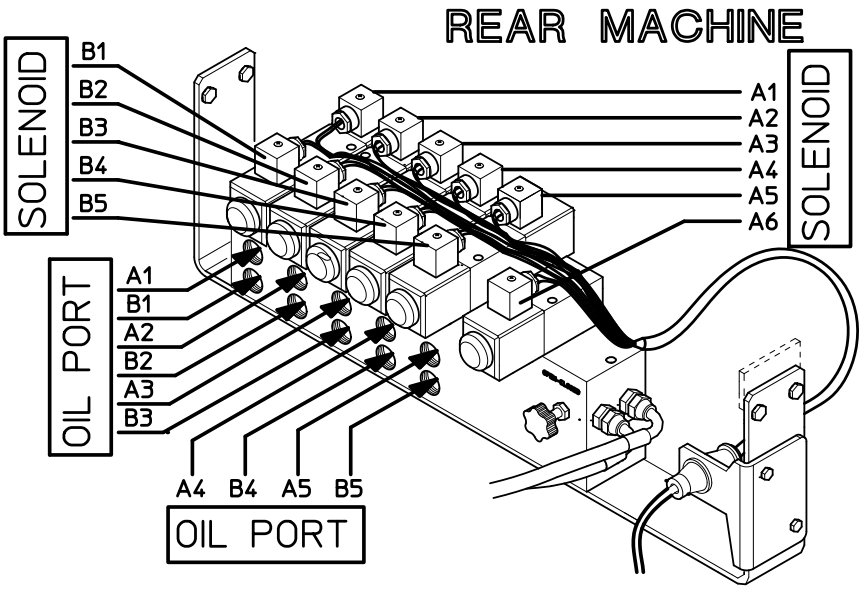
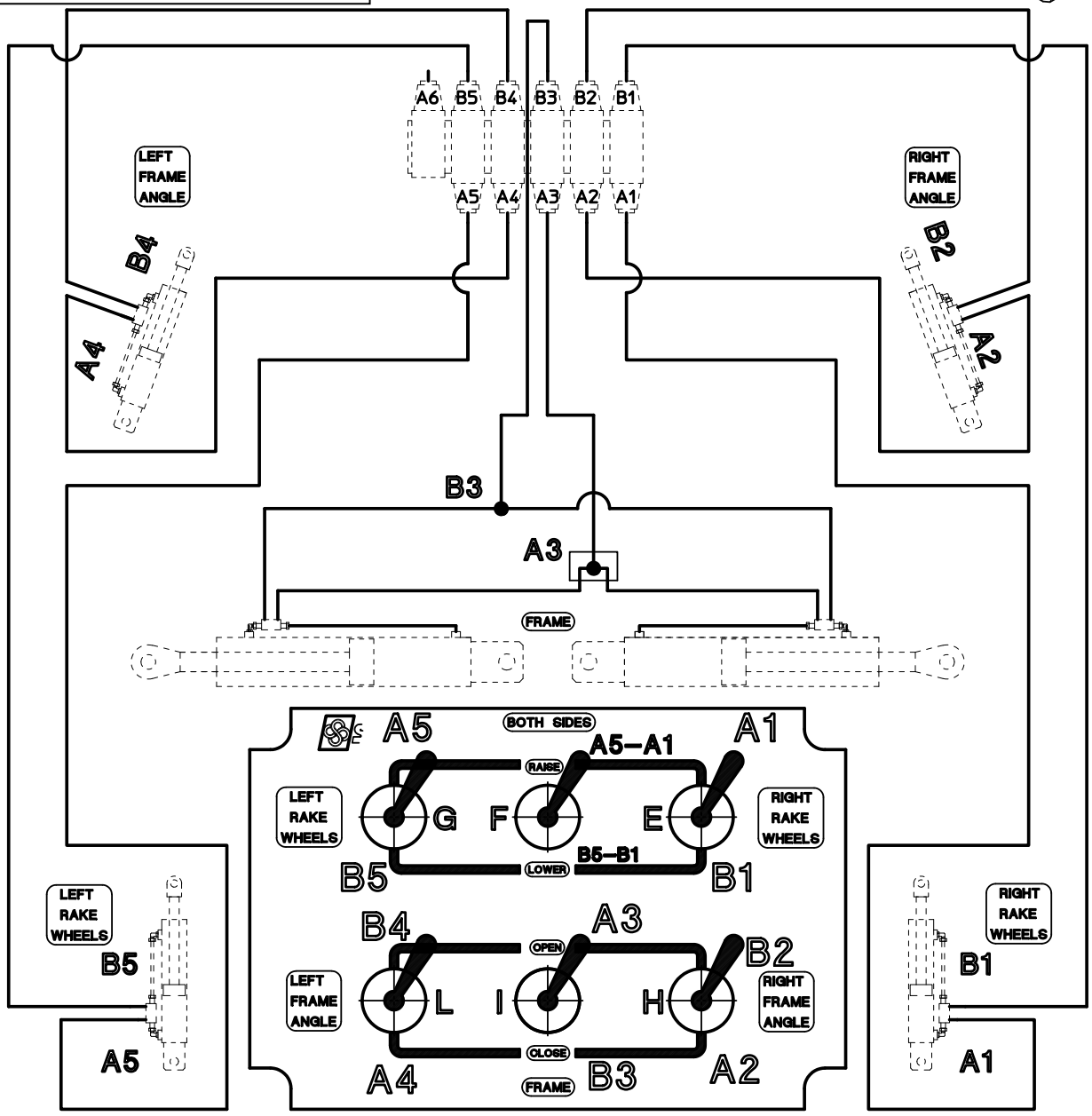
Point 16

Wiring diagram of the electric-hydraulic system

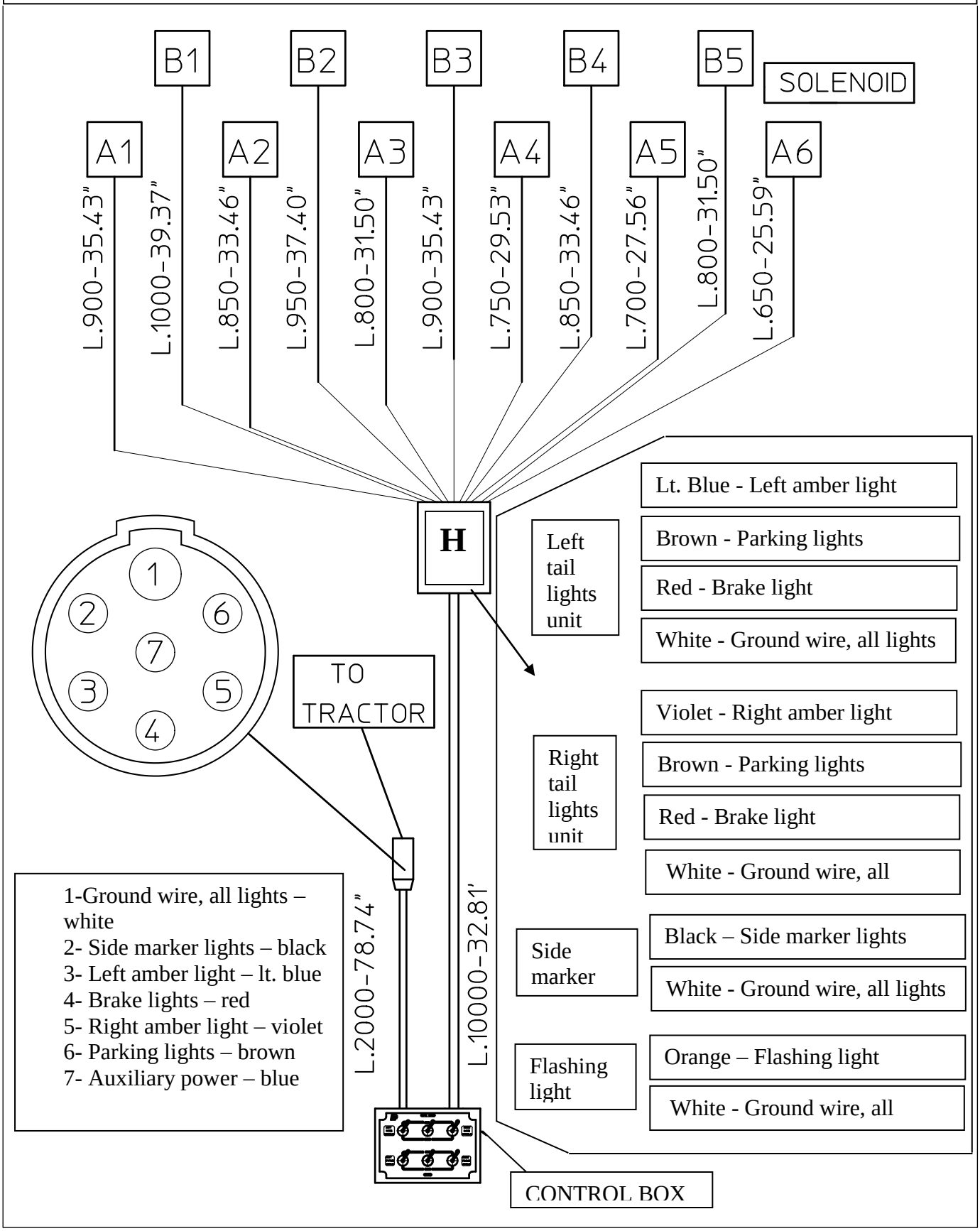
Characteristics of electric components:
Power supply: 12 V DC
Characteristics of solenoid valve coils: 12 V DC– 30 Watt – 2,5 A
Characteristics of hydraulic components:
Working pressure of hoses, fittings, cylinders etc. : 200 bar – 2800 psi
Type of fittings, joints etc.: gas BSPP 60° cone and jic 37°



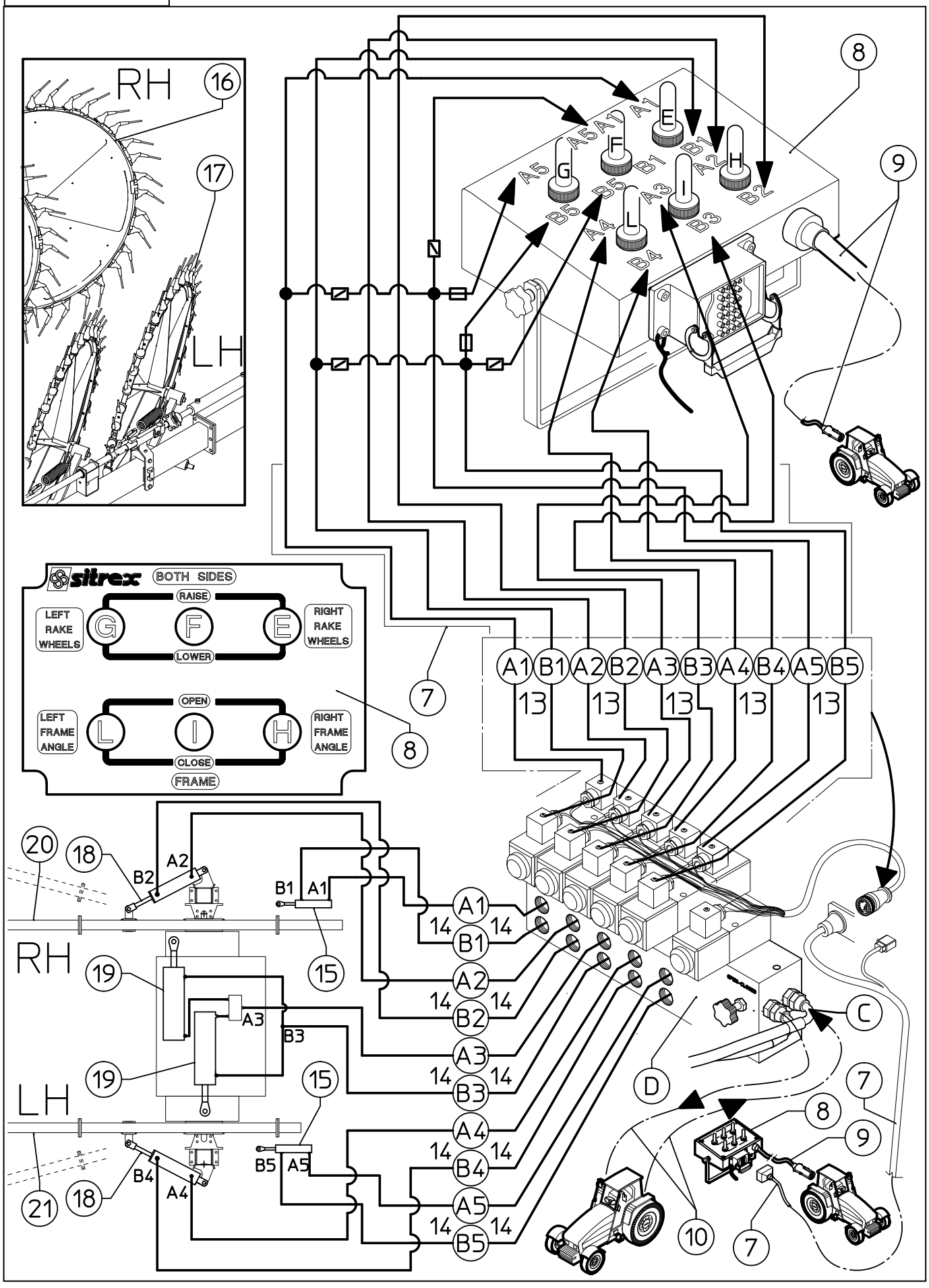


Point 16 ELECTRICAL DIAGRAM

Characteristics of electric components:
Power supply: 12 V DC
Characteristics of solenoid valve coils: 12 V DC– 30 Watt – 2,5 A
Note: Box "H" contains not only the connections to the solenoids in the valve assembly, but also the wiring that makes it possible to apply the lights to the machine for road use. See diagram.



Point 17


RH
16
17
LH
8
9
A1
A5
F
E
B1
A5
G
B1
A2
H
B5
B5
A3
I
B2
A4
L
B3
B4
sitrex
BOTH SIDES
RAISE
LEFT RAKE WHEELS
G
F
E
RIGHT RAKE WHEELS
LOWER
OPEN
LEFT FRAME ANGLE
L
I
H
RIGHT FRAME ANGLE
CLOSE
FRAME
7
8
A1 B1 A2 B2 A3 B3 A4 B4 A5 B5
13 13 13 13 13
20
18
A2
B2
B1
A1
15
RH
19
A3
B3
19
15
LH
21
18
B4
A4
B5
A5
14 A1 14 B1
14 A2 14 B2
14 A3 14 B3
14 A4 14 B4
14 A5 14 B5
C
D
7
8
9
10
7

Point 17

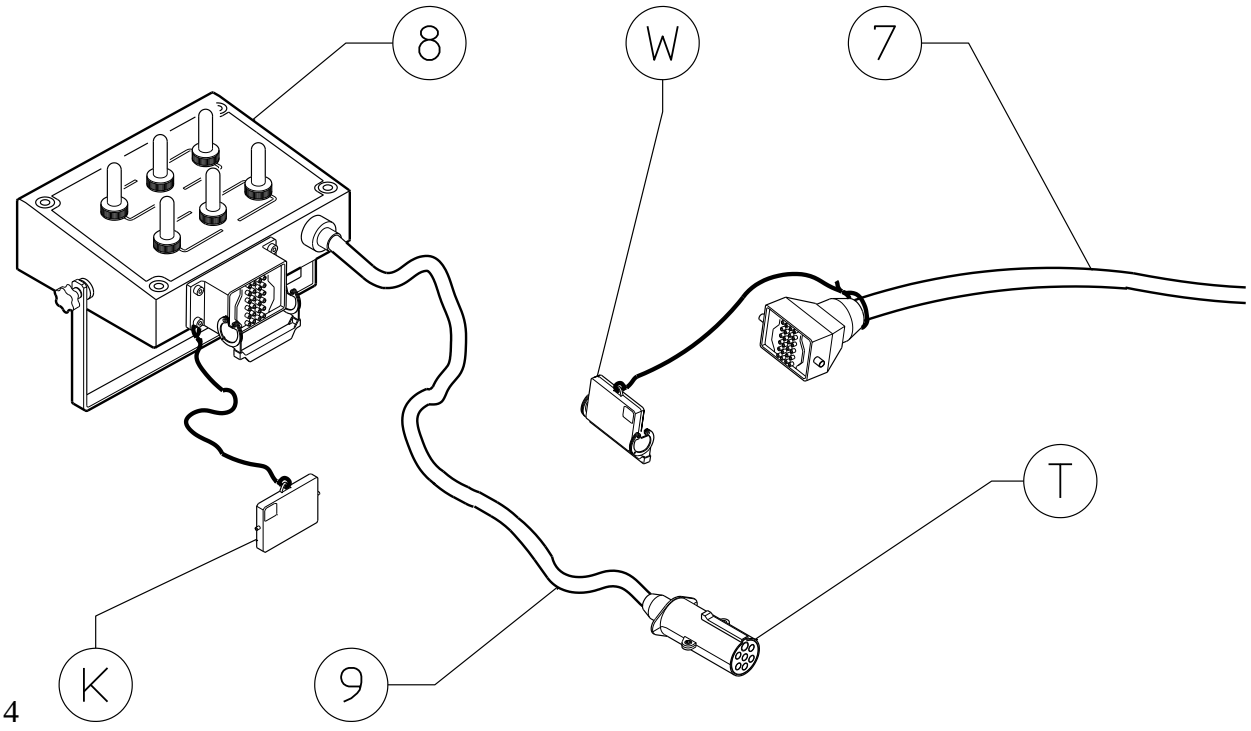
Wiring diagram of the electric-hydraulic system

Characteristics of electric components:
Power supply: 12 V DC
Characteristics of solenoid valve coils: 12 V DC– 30 Watt – 2,5 A
Characteristics of hydraulic components:
Working pressure of hoses, fittings, cylinders etc. : 200 bar – 2800 psi
Type of fittings, joints etc.: gas BSPP 60° cone and jic 37°

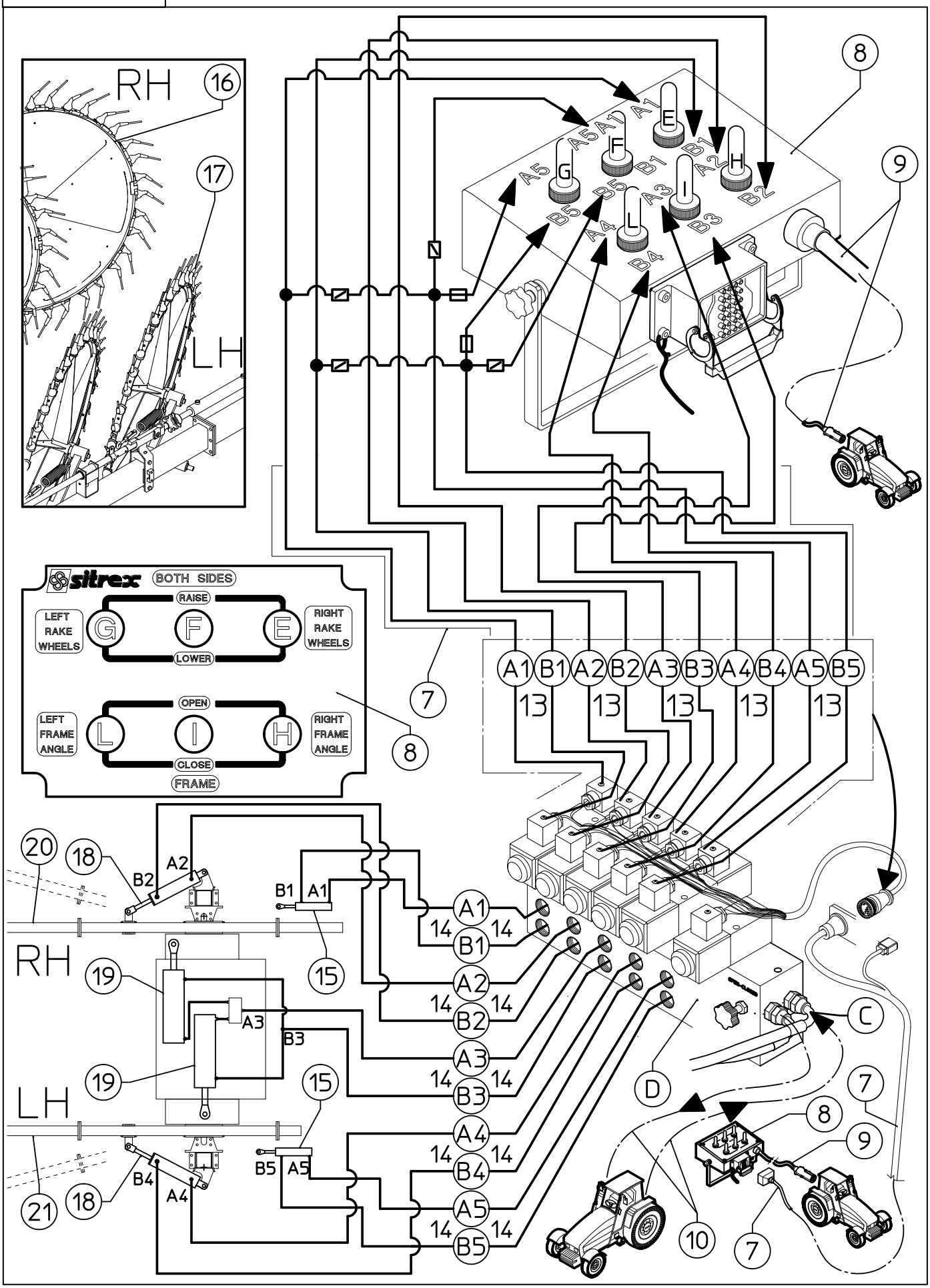
At this time, the machine may be connected to the tractor for a testing of all working elements, because the brackets, stars and accessories are not yet assembled and it is still possible to make any correction, if required. If however it is necessary to assemble stars and accessories, please proceed to the next point.
Connect electric cable 7 to control box 8 using the respective plug.

The power cable 9 for the control box 8 must be plugged into the connector on the tractor.
If the tractor being used does not have a connector or if it has one that is not compatible with that of the machine, replace and/or make the necessary modifications to the machine plug. Have the replacement and/or modifications done by a qualified person, because a connection error could cause significant damage to the electrical system.

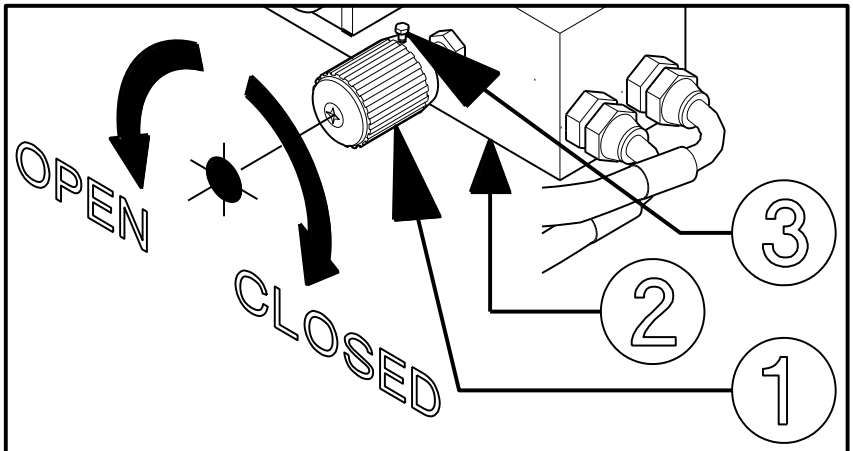
Note: to avoid damage and/or dirt from entering the multiple connector on box 8 and on cable 7, cover them with covers “K” and “W” when they are not connected to each other. Pay attention also to the multiple connector “T” on cable 9.



Point 17


RH
LH
16
17
8
9
sitrex
BOTH SIDES
RAISE
LOWER
LEFT RAKE WHEELS
RIGHT RAKE WHEELS
G
F
E
OPEN
CLOSE
FRAME
LEFT FRAME ANGLE
RIGHT FRAME ANGLE
L
I
H
A1 B1 A2 B2 A3 B3 A4 B4 A5 B5
13
7
8
20
18
21
19
15
A1
B1
A2
B2
A3
B3
A4
B4
A5
B5
14
C
D
10

At this point connect hoses to the tractor oil intakes. The machine's hydraulic system allows working with any type of tractor, as it has a knob for opening or closing the hydraulic circuit. Read carefully the notice below, which is also applied to the machine in the form of a sticker (for location of the sticker, see pages 8-9 of this manual).



IMPORTANT NOTICE:

KNOB 1 IN OPEN POSITION:

OPEN CIRCUIT. (Oil sent from the tractor without using any machines' cylinders flows into base 2 and goes back to tractor).

KNOB 1 IN CLOSED POSITION:

CLOSED CIRCUIT. (Oil sent from the tractor without using any machines' cylinders does not flows into base 2 and therefore, the pressure raises in the hydraulic circuit).

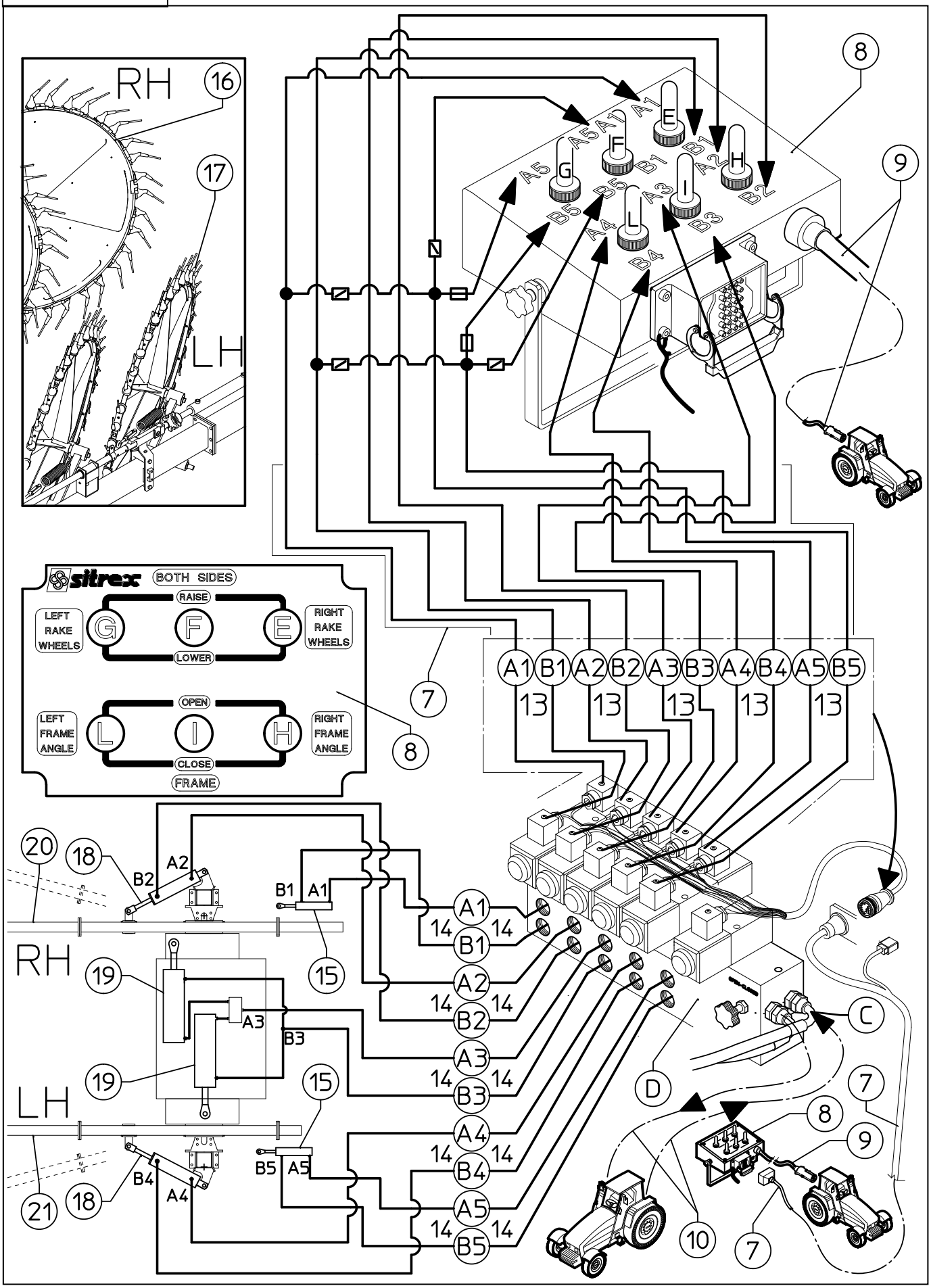
Choice open-closed depends on type of hydraulic system installed in the tractor used.

Once selected the suitable working position lock the knob 1 with setscrew 3.

Machine is supplied with knob 1 in closed position.

Now you can start introducing oil into the hydraulic circuits. Note: hose 10 in which the oil must enter is the one that is connected to point "C" of the valve assembly "D" whereas in the other hose 10 the oil returns to the tractor.

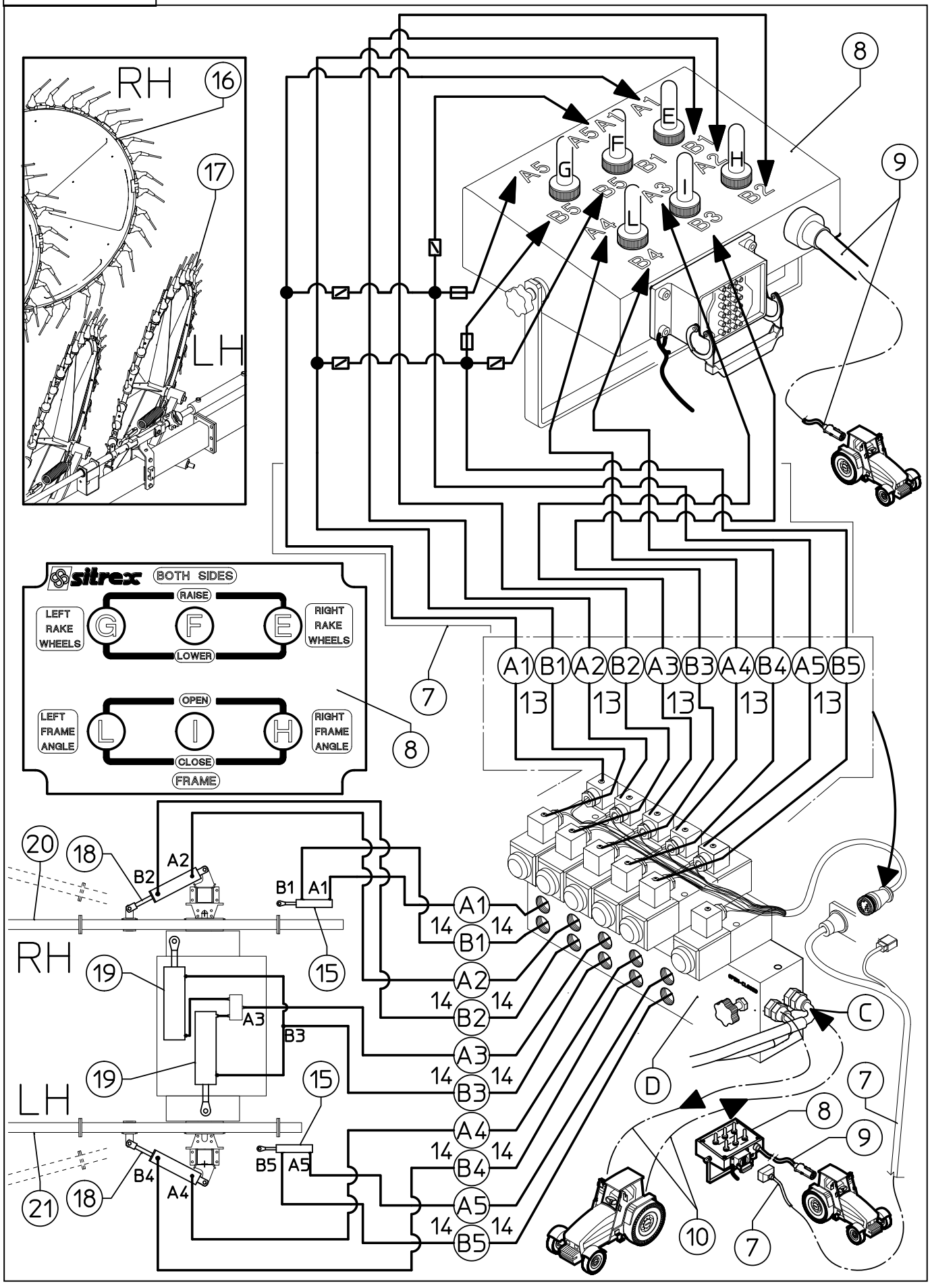
Point 17


RH
LH
16
17
8
9
E
F
G
H
I
L
A1
A2
A3
A4
A5
B1
B2
B3
B4
B5
sitrex
BOTH SIDES
RAISE
LOWER
LEFT RAKE WHEELS
RIGHT RAKE WHEELS
OPEN
CLOSE
FRAME
LEFT FRAME ANGLE
RIGHT FRAME ANGLE
7
8
13
14
15
18
19
20
21
C
D
10

If the joint of hoses 10 is inverted, the elements of the tractor will not work. However no damage may occur, because the hydraulic system has been designed to avoid this. In this case, it will be sufficient to re-invert the position of hoses 10 on the brackets of the tractor. Be very careful once oil has entered the circuit, because machine parts will start moving and will become dangerous for anyone within their range.

While keeping oil flowing from the tractor to the valve assembly "D", press the buttons "E-F-G-H-I-L" of the control box 8 in a sequence in both directions. They will control the solenoid valves (13 A1-B1, 13 A2-B2 and next) so that oil may go through the hoses (14 A1-B1, 14 A2-B2 and next) up to cylinders 15 (RH and LH), 18 (RH and LH) and 19 (RH and LH). Open and close the cylinders 15-18-19 several times, in order to bleed air from circuit. First of all the crosspieces must be opened to the maximum width of 4' to avoid having the rake sections knock against each other at the rear of the machine when they are moved with the H-L buttons. Do several open/close cycles – if possible with the machine in movement or in any event on a surface that allows the transversal movement of the wheels – using button I in the A3 and B3 position, so as to correctly fill the cylinders 19, then carry out the same procedures with the other buttons to set up the other cylinders.

Point 17


RH
LH
16
17
8
9
E
F
G
H
I
L
A1
B1
A2
B2
A3
B3
A4
B4
A5
B5
sitrex
BOTH SIDES
RAISE
LOWER
LEFT RAKE WHEELS
RIGHT RAKE WHEELS
OPEN
CLOSE
FRAME
LEFT FRAME ANGLE
RIGHT FRAME ANGLE
7
8
13
20
18
21
19
15
14
C
D
10

While operating the system, keep the following in mind:

1) When button “E” (the one bearing the caption “RIGHT RAKE WHEELS” in control box 8) is pushed towards A1, it acts on coil 13 A1which – through hose 14 A1 (actually through a set of hoses and fittings that will be referred to as 14 A1 for simplicity and this applies to all) sends oil to the back side A1 of RH cylinder 15, making it go up. The resulting effect is the rising of stars 16 on the RH side of the machine, shifting from working mode to transport mode.

2) When button “E” (the one bearing the caption “RIGHT RAKE WHEELS” in control box 8) is pushed towards B1, it acts on coil 13 B1which – through hose 14 B1 – sends oil to the front side B1 of RH cylinder 15, making it lower. The resulting effect is the lowering of stars 16 on the RH side of the machine, shifting from transport mode to working mode.

3) When button “F” (the one bearing the caption “BOTH SIDES RAISE/LOWER” in control box 8) is pushed towards A1-A5 (raise), it acts on coils 13 A1-A5 which – through hoses 14 A1-A5 – send oil simultaneously to the back sides A1-A5 of cylinders 15 (RH and LH) making them go up. The resulting effect is the simultaneous rising of stars 16 and 17 on the RH and LH sides of the machine, shifting from working mode to transport mode.

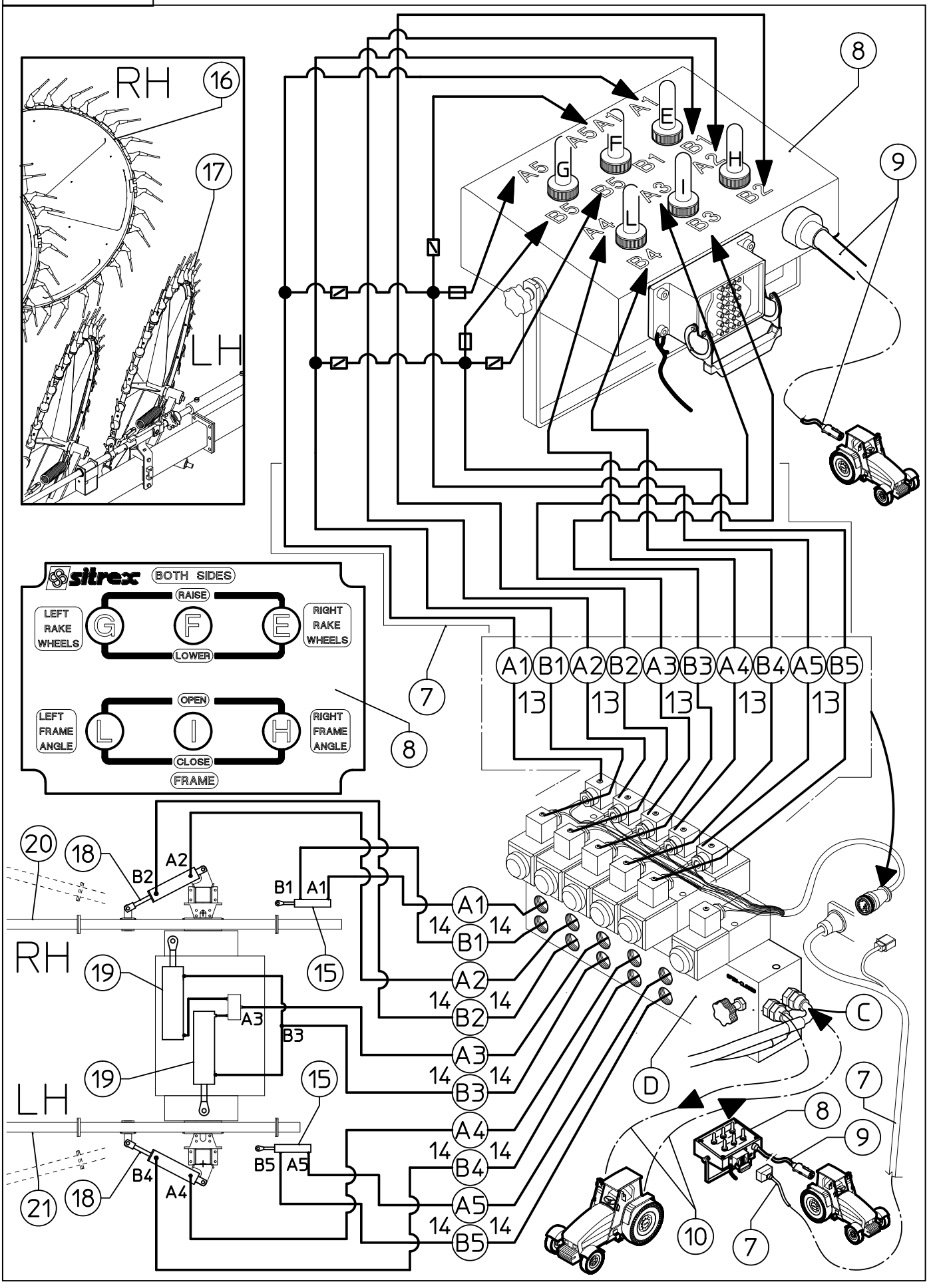
4) When button “F” (the one bearing the caption “BOTH SIDES RAISE/LOWER” in control box 8) is pushed towards B1-B5 (lower), it acts on coils 13 B1-B5 which – through hoses 14 B1-B5 – simultaneously send oil to the back sides B1-B5 of cylinders 15 (RH and LH) making them lower. The resulting effect is the simultaneous lowering of stars 16 and 17 on the RH and LH sides of the machine, shifting from transport mode to working mode.

5) When button “G” (the one bearing the caption “LEFT RAKE WHEELS” in control box 8) is pushed towards A5, it acts on coil 13 A5 which – through hose 14 A5 – sends oil to the back side A5 of LH cylinder 15, making it go up. The resulting effect is the rising of stars 17 on the LH side of the machine, shifting from working mode to transport mode.

6) When button “G” (the one bearing the caption “LEFT RAKE WHEELS” in control box 8) is pushed towards B5, it acts on coil 13 B5 which – through hose 14 B5 – sends oil to the front side B5 of LH cylinder 15, making it lower. The resulting effect is the lowering of stars 17 on the LH side of the machine, shifting from transport mode to working mode.

7) When button “H” (the one bearing the caption “RIGHT FRAME ANGLE” in control box 8) is pushed towards A2, it acts on coil 13 A2 which – through hose 14 A2 – sends oil to the back side A2 of RH cylinder 18, making it rise. The resulting effect is the transition of RH section 20 from the open working position to the closed transport position.

Point 17


RH
16
17
LH
8
9
A1
B1
A2
B2
A3
B3
A4
B4
A5
B5
E
F
G
H
I
L
sitrex
BOTH SIDES
RAISE
LOWER
LEFT RAKE WHEELS
RIGHT RAKE WHEELS
OPEN
CLOSE
FRAME
LEFT FRAME ANGLE
RIGHT FRAME ANGLE
7
8
13
20
18
21
19
15
14
C
D
10

8) When button “H” (the one bearing the caption “RIGHT FRAME ANGLE” in control box 8) is pushed towards B2, it acts on coil 13 B2 which – through hose 14 B2 – sends oil to the front side B2 of RH cylinder 18, making it lower. The resulting effect is the transition of RH section 20 from the closed transport position to the open working position.

9) When button “I” (the one bearing the caption “FRAME CLOSE/OPEN” in control box 8) is pushed towards A3 (open), it acts on coil 13 A3 which – through hose 14 A3 – simultaneously sends oil through special joints to the back sides A3 of cylinders 19 (RH and LH), making them go up. The resulting effect is the simultaneous opening of RH and LH sides of the machine, shifting from the closed transport position to the open working position.

10) When button “I” (the one bearing the caption “FRAME CLOSE/OPEN” in control box 8) pushed towards B3 (close) acts on coil 13 B3 which – through hose 14 B3 – simultaneously sends oil through special joints to the front sides B3 of cylinders 19 (RH and LH), making them lower. The resulting effect is the simultaneous closing of RH and LH sides of the machine, shifting from the open working position to the closed transport position.

11) When button “L” (the one bearing the caption “LEFT FRAME ANGLE” in control box 8) is pushed towards A4, it acts on coil 13 A4 which – through hose 14 A4 – sends oil to the back side A4 of LH cylinder 18, making it go up. The resulting effect is the transition of LH section 21 from the open working position to the closed transport position.

12) When button “L” (the one bearing the caption “LEFT FRAME ANGLE” in control box 8) is pushed towards B4, it acts on coil 13 B4 which – through hose 14 B4 – sends oil to the front side B4 of LH cylinder 18, making it lower. The resulting effect is the transition of LH section 21 from the closed transport position to the open working position.

BACK LIGHTS CONNECTION KIT

The envelope contains 12 male pins that will be used to link an optional PRO/17 backlight bar.

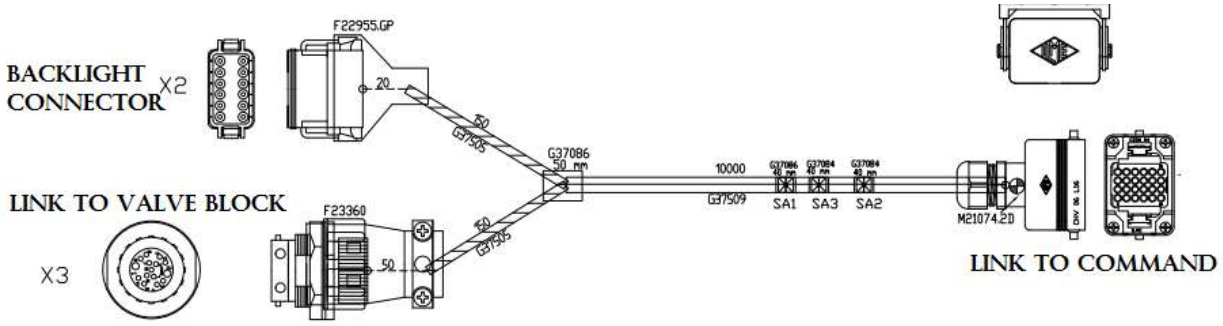
Read the USER MANUAL to know how to use the connection kit for PRO 17 backlights bar.

Rear lights bar – Connection kit

Inside the box that will be delivered with the machine, you will find two objects:
1) lock service electric control;
2) bag with Duetsch DT series terminals to connect the rear lights bar.

FIG 1

Attention: the bag contains 12 Deutsch DT series males pins that are an integral part of the system and are used to connect the machine with the rear lights bar, through a X2 CONNECTOR of the PRO17 system.
The connectors X2 and X3 are available close to the valves lock.



How to connect the rear lights bar:
Remove the backlights connector from the X2 connector (fig 2) and disassemble the components (fig 3).
Crimp the deutsch terminals of the connection kit (1) as showed on figure 4.
Enter terminals respecting the sequence (pin layot) of the table 1 (tab 1).
Once the terminals have been entered, you must lock them with the DEUTSCH MALE HOLDER (fig 3 e fig 6)

FIG 2

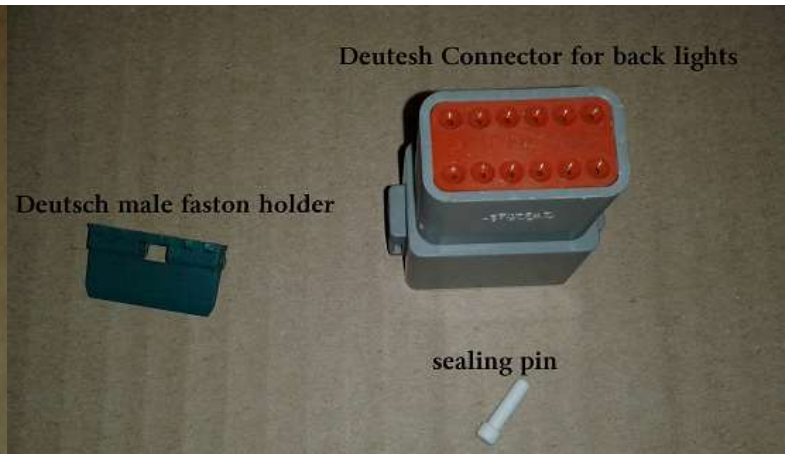


FIG3

FIG 4

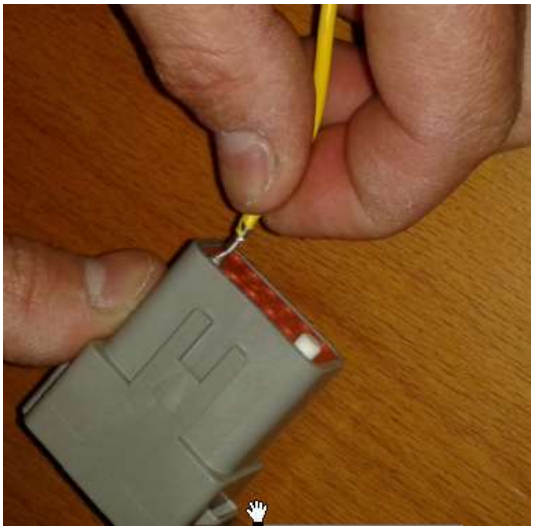


FIG 5

FIG 6

TABLE 1 (tab 1)				
Connettor X2 Pin layout	**POSITION**	**ID**	**WIRE COULOR**	**FUNCTION**
	1	M	MARRONE-BROWN	LIGHTS
	2	R	ROSSO-RED	BRAKE LIGHTS
	3	L	BLU-BLUE	LEFT BLINKING LIGHT
	4	Z	VIOLA-VIOLET	RIGHT BLINKING LIGHT
	5	C	CAROTA-ORANGE	
	6	N	NERO-BLACK	
	7	B	BIANCO-WHITE	GROUND (-)
	8	B	BIANCO-WHITE	GROUND (-)
	9	B	BIANCO-WHITE	GROUND (-)
	10	M	MARRONE-BROWN	LIGHTS
	11	R	ROSSO-RED	BRAKE LIGHTS
	12	B	BIANCO-WHITE	GROUND (-)