C & C HYDRAULICS LTD

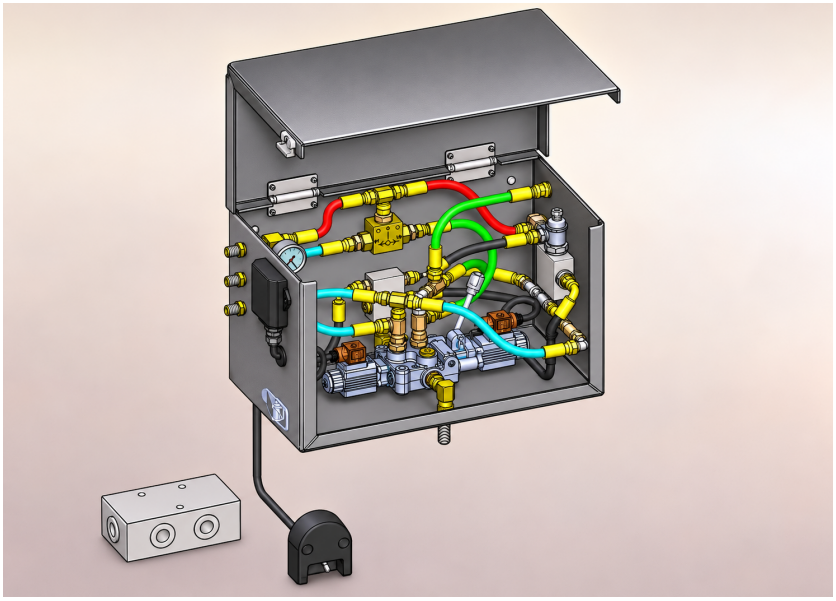
Chassis Conversion Specialists

PRODUCT DATASHEET

W.F.S.S. SHEETING & BULKHEAD

Hydraulic auto-sheet and Clean Sweep bulkhead for walking floor trailers — powered from the walking floor supply, so no power pack is needed.

The W.F.S.S. (Walking Floor Sheeting System) combines a hydraulic auto-sheet and a hydraulic bulkhead to save time and improve loading and unloading. It can be fitted during the trailer build or retro-fitted. A 15:1 flow divider takes a small share of the walking floor supply into a compact valve module, which opens and closes the sheet and, on the Clean Sweep version, runs and rewinds the bulkhead winch. Control is by Bluetooth remote, toggle switch or manual lever.



W.F.S.S. HYDRAULIC POWER SUPPLY MODULE IN ITS HOUSING, WITH FLOW DIVIDER

6–8 L/min	140 bar	15:1	24 V DC
Flow into the sheet and bulkhead circuit	Maximum working pressure	Flow divider ratio from walking floor	Solenoid valve with manual lever

KEY FEATURES

- Runs from the walking floor hydraulic supply – no separate power pack
- Clean Sweep version adds a hydraulic bulkhead winch with friction brake
- Bulkhead can be interlocked so it only runs once the sheet is open
- Centre pole motor opens the sheet; combined motor/brake closes and holds it
- Bluetooth remote, toggle switch and manual lever override
- Pre-assembled valve module and colour-coded 1/4" hose kit for quick fitting

Ready to spec your system?

Talk to us about sizing, PTO fitment, lead times and pricing.

CALL 01535 617880
EMAIL sales@cchydraulics.co.uk
WEB www.cchydraulics.co.uk

PRODUCT DATASHEET

Range Overview

Two versions: sheeting only, or sheeting with the Clean Sweep hydraulic bulkhead.

VERSION COMPARISON

	W.F.S.S. In A Box	W.F.S.S. + CS In A Box
Functions	Auto-sheet open / close	Auto-sheet + Clean Sweep bulkhead
Directional valve	1-spool, 24 V DC + lever	2-spool monoblock, 24 V DC + lever
Valve part number	MB-3/1S-3/18ES3LES/G3/M3-24VDC	MB-3/2S-3/020246/G3/M3-24VDC
Bulkhead winch	–	Winch with friction brake
Rewind speed control	–	FRV10 flow regulator
Solenoid coils	2 (A, B)	4 (A, B, C, D)
Module housing	Enclosed box	Angled base with lid
Hose kit	1/4" two-wire, 1/4" BSP	1/4" two-wire, 1/4" BSP

HYDRAULIC SUPPLY

Parameter	Value	Notes
Walking floor supply	100 – 120 L/min, 250 bar	From the tractor unit
Flow divider	Bucher 15:1 (100044954)	Main flow continues to the walking floor
Flow to W.F.S.S.	6 – 8 L/min (8 L/min max.)	Varies with tractor flow rate
Relief setting	140 bar	Adjustable relief in the directional valve

SHEETING ONLY

W.F.S.S. In A Box. For walking floor trailers that need an automatic sheet. The centre pole drive opens the sheet and the webbing strap drive closes it and holds it in place.

SHEETING + BULKHEAD

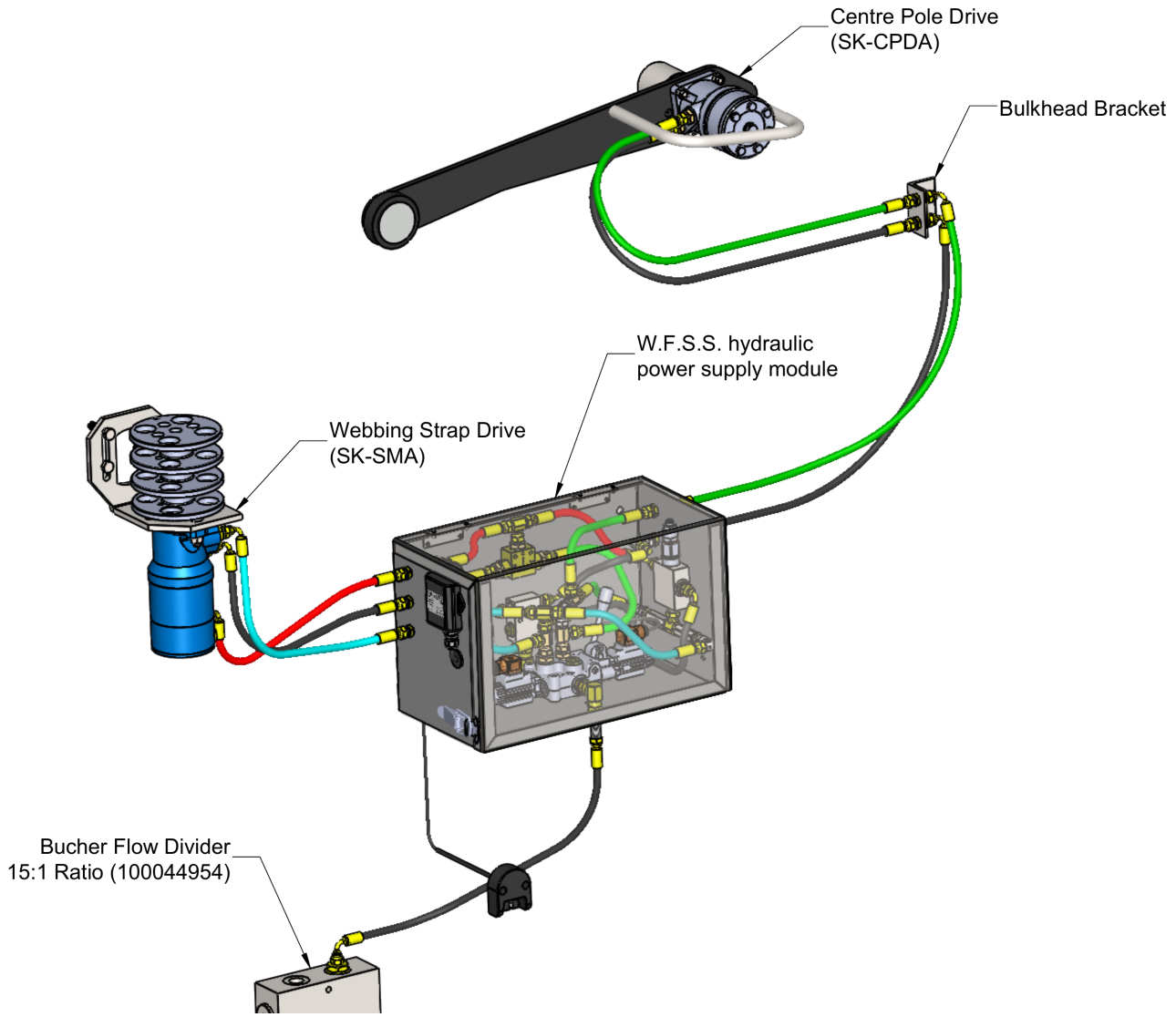
W.F.S.S. + CS In A Box. Adds the Clean Sweep hydraulic bulkhead, which follows the walking floor during discharge and is rewound by the winch afterwards.

PRODUCT DATASHEET

W.F.S.S. In A Box

System layout for the sheeting-only version — centre pole drive, webbing strap drive, valve module and flow divider.

W.F.S.S. IN A BOX — SYSTEM LAYOUT



COLOUR-CODED PIPING

- Black — low-pressure tank lines
- Red — pilot pressure to release the brake
- Green — pressure to open the sheet
- Blue — pressure to close the sheet

HOW IT WORKS

The centre pole motor opens the sheet and the combined motor/brake closes it. A shuttle valve and SQCOM220Y pilot-operated valve release the brake whenever either line is pressurised, and let it re-engage to lock the sheet when the valve returns to centre.

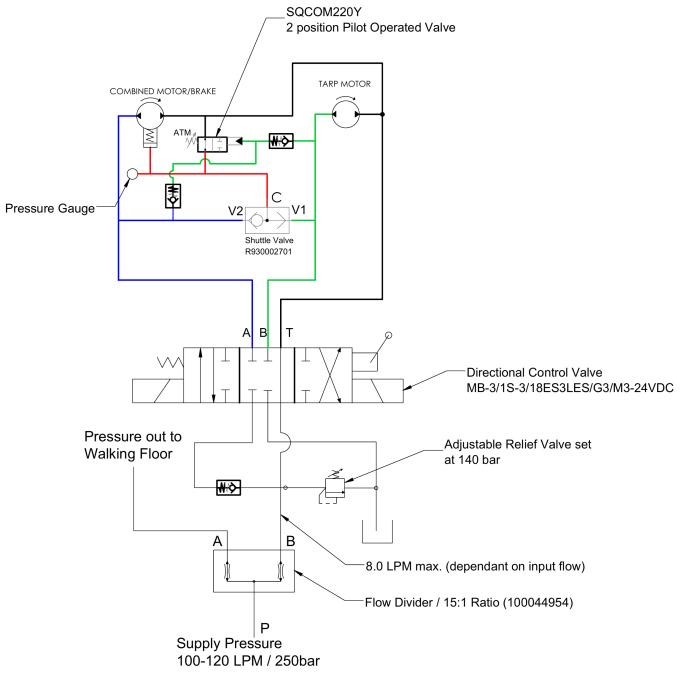
PRODUCT DATASHEET

W.F.S.S. Specification

Hydraulic schematic, components and wiring for W.F.S.S. In A Box.

6–8 L/min	140 bar	1 spool	2 coils
Flow required	Max. working pressure	Directional valve	24 V DC, A and B

HYDRAULIC SCHEMATIC



WIRING

Cable	From junction box	To
1	8-pin connector	R820 receiver
2	2-pin connector	Coil A
3	4-pin connector	Manual override toggle switch
4	6-pin connector	Coil B + supply

CONTROLS

R820 receiver (90021033) and junction box (90360015) for the Bluetooth remote, plus a toggle switch (80360057). The valve lever gives full manual override.

MAIN COMPONENTS

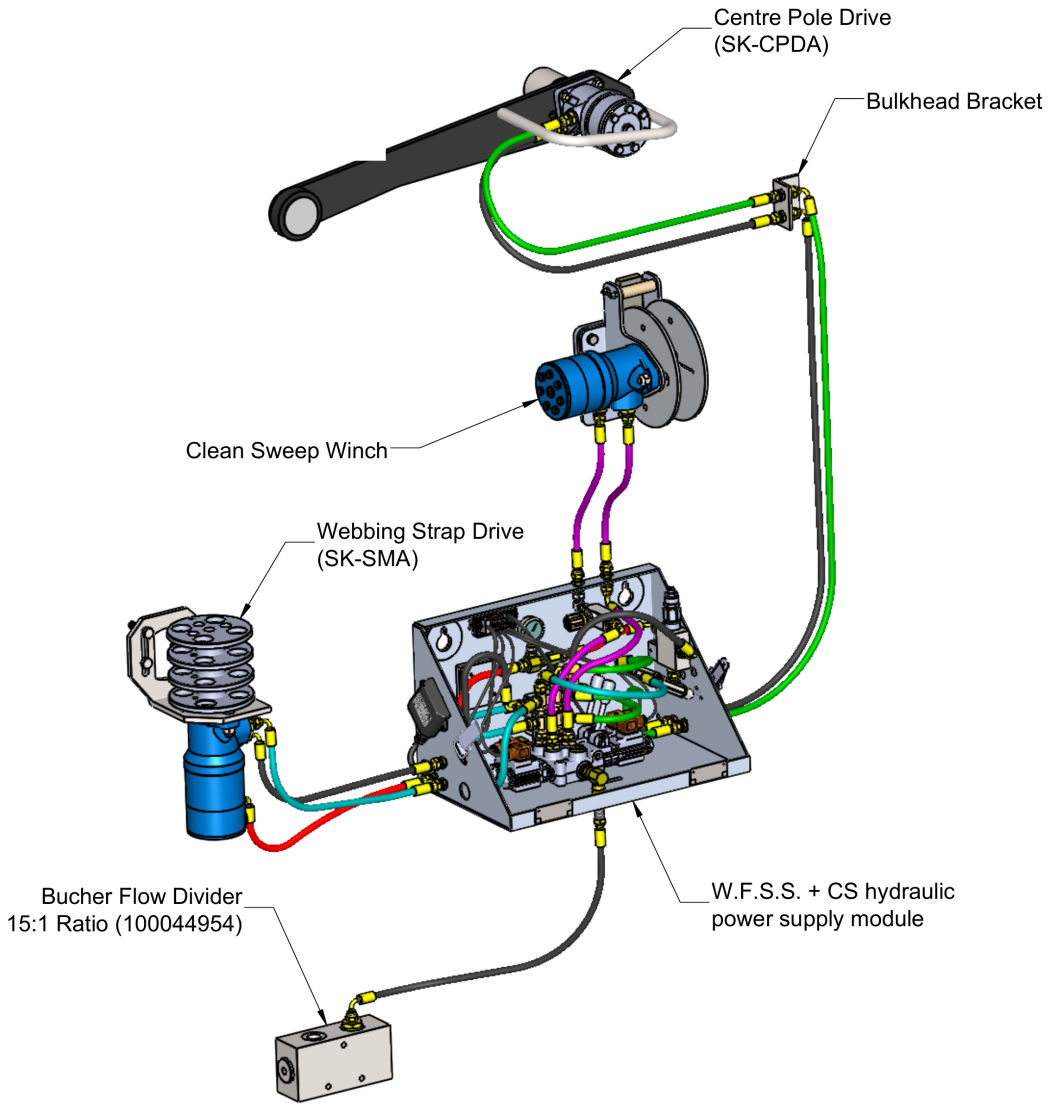
Component	Part number	Notes
Directional control valve	MB-3/1S-3/18ES3LES/G3/M3-24VDC	1 spool, 24 V DC, manual lever, relief
Pilot-operated valve	SQC0.M22 in HCVBM22.338A	SQCOM220Y, 2-position, releases the brake
Shuttle valve	R930002701	Selects pilot pressure from A or B
In-line check valves (×2)	HVUR140	
Return manifold	MB-1-4 × 5 ST	1/4" BSP 5-port
Pressure gauge	0 – 250 bar, 48 mm	On the brake pilot line
Flow divider	Bucher 100044954	15:1 ratio
Centre pole drive / strap drive	SK-CPDA / SK-SMA	Opens / closes and holds the sheet

PRODUCT DATASHEET

W.F.S.S. + CS In A Box

System layout with the Clean Sweep hydraulic bulkhead — the winch is added to the sheeting circuit on the second spool.

W.F.S.S. + CS IN A BOX — SYSTEM LAYOUT



COLOUR-CODED PIPING

- Black — low-pressure tank lines
- Red — pilot pressure to release the brake
- Green — pressure to open the sheet
- Blue — pressure to close the sheet
- Purple — Clean Sweep winch supply

HOW IT WORKS

Spool 1 runs the Clean Sweep winch, letting the bulkhead follow the walking floor as it discharges, then rewinding it. **Spool 2 opens and closes the sheet.** The winch is held by a friction brake, and the FRV10 sets the rewind speed.

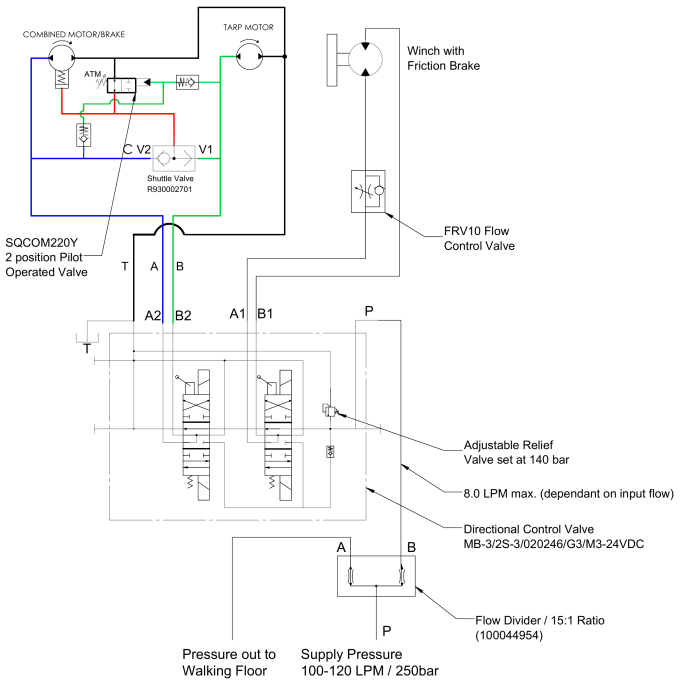
PRODUCT DATASHEET

W.F.S.S. + CS Specification

Hydraulic schematic, operating sequence and components for W.F.S.S. + CS In A Box.

6–8 L/min	140 bar	2 spools	4 coils
Flow required	Max. working pressure	Monoblock directional valve	24 V DC, A to D

HYDRAULIC SCHEMATIC



OPERATING SEQUENCE

1. Energise coil 1 to let the winch free-wheel with the walking floor.
2. Energise coil 2 to rewind the bulkhead.
3. Energise coil 3 to open the sheet.
4. Energise coil 4 to close the sheet.

INTERLOCK

The bulkhead can be interlocked through the Bluetooth control system so it cannot run until the sheet is open.

ADDITIONAL COMPONENTS

Component	Part number	Notes
Directional control valve	MB-3/2S-3/020246/G3/M3-24VDC	2-bank electric monoblock, manual lever
Flow regulator	FRV10	Sets the winch rewind speed
Clean Sweep winch	–	Hydraulic winch with friction brake
Junction box / receiver	90360015 / 90021033 (R820)	12-pin receiver lead, 4 coil outputs
System power	Flying lead	Waygo connector

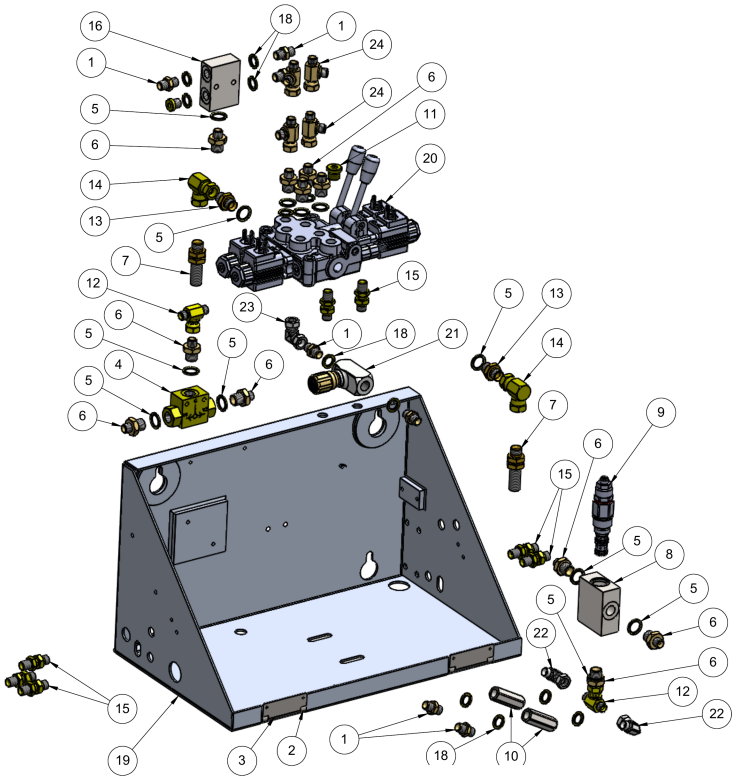
Pilot-operated valve, shuttle valve, check valves, return manifold, pressure gauge and flow divider are as W.F.S.S. In A Box (page 4). Full parts list and hose kit on pages 7 and 8.

PRODUCT DATASHEET

W.F.S.S. + CS Assembly

Valve module assembly (Stage 1) for W.F.S.S. + CS In A Box — exploded view and parts list.

VALVE MODULE — EXPLODED VIEW (STAGE 1)



PARTS LIST

No.	Description	Part no.	Qty
1	1/4" BSP straight adaptor	1/4 × 1/4	7
3	Hinge, male	HFV06-76	2
4	Shuttle valve	R930002701	1
5	3/8" Dowty washer		13
6	3/8" × 1/4" adaptor		11
7	3/8" BSP bulkhead adaptor with locknut		2
8	Manifold	HCVBM22.338A	1
9	Pilot-operated cartridge valve	SQC0.M22	1
10	In-line check valve	HVUR140	2
11	3/8" hex socket blanking plug		1
12	1/4" M.F.M. tee		2
13	3/8" BSP adaptor		2

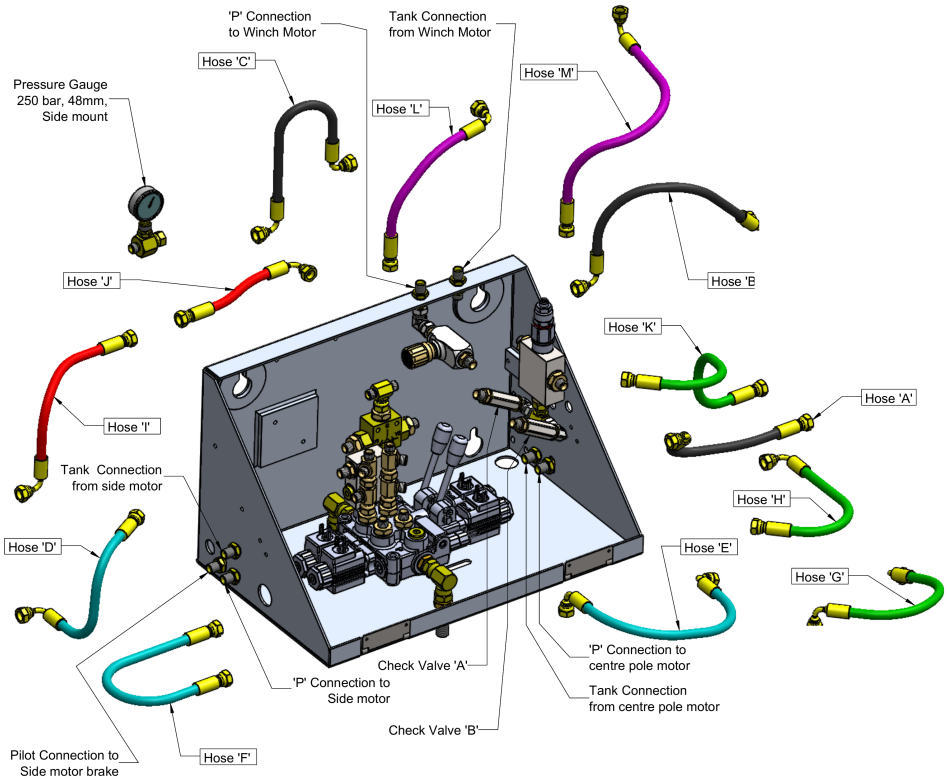
No.	Description	Part no.	Qty
14	3/8" F-F compact 90°		2
15	1/4" bulkhead adaptor with locknut		7
16	1/4" BSP 5-port manifold block	MB-1-4 × 5 ST	1
17	1/4" BSP blanking plug		1
18	1/4" Dowty washer (bonded seal)		11
19	HPU & valve housing, base fabrication		1
20	2-bank electric monoblock valve	MB-3-2S-3-010211 -G3-M324	1
21	Flow regulator valve	FRV10	1
22	1/4" M.F. compact 90°		2
23	1/4" F.F. compact 90°		1
24	1/4" M.M.F. tee		4
25	HPU & valve housing lid		1

PRODUCT DATASHEET

W.F.S.S. + CS Hose Kit

Hose kit (Stage 2) for W.F.S.S. + CS In A Box — where each hose goes and how it is made up.

HOSE KIT — STAGE 2



HOSE KIT SCHEDULE

Hose	Purpose	Type	Cut length (mm)	Fitting 1	Fitting 2
A	Return, centre pole motor to 5-port manifold	2	260	Straight (SC)	Swept 90°
B	Return, P/O cartridge valve to 5-port manifold	3	350	Swept 90°	Swept 90°
C	Return, side motor to 5-port manifold	3	300	Swept 90°	Swept 90°
D	Pressure, valve port A1 to side motor	2	280	Straight (SC)	Swept 90°
E	Pressure, valve port A1 to check valve B	3	380	Swept 90°	Swept 90°
F	Pressure, valve port A1 to shuttle valve V1	1	360	Straight (SC)	Straight (SC)
G	Pressure, valve port B1 to check valve A	3	300	Swept 90°	Swept 90°
H	Pressure, valve port B1 to shuttle valve V2	2	280	Straight (SC)	Swept 90°
I	Pilot, shuttle valve to side motor brake	2	260	Straight (SC)	Swept 90°
J	Pilot, shuttle valve to P/O cartridge valve	2	150	Straight (SC)	Swept 90°
K	Pressure, valve port B1 to centre pole motor	1	380	Straight (SC)	Straight (SC)
L	Pressure, valve port A2 to winch motor	2	230	Straight (SC)	Swept 90°
M	Return, winch motor to valve port B2	2	400	Straight (SC)	Swept 90°

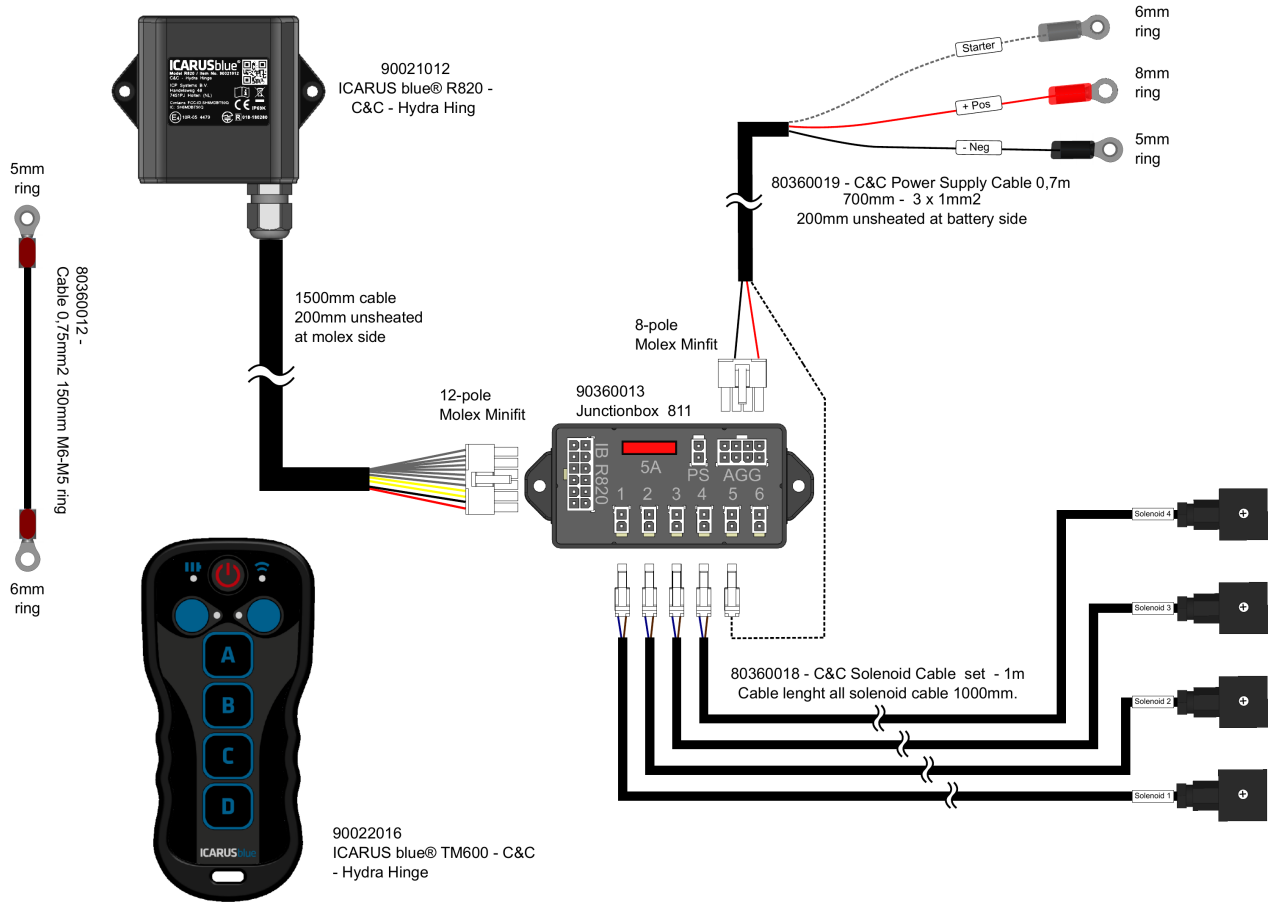
Hose types: 1 = straight / straight, 2 = straight / 90°, 3 = 90° / 90°. All hoses 1/4" two-wire with 1/4" BSP fittings; hose kit system pressure 170 bar. Also fitted: 250 bar, 48 mm side-mount pressure gauge.

PRODUCT DATASHEET

Bluetooth Remote Control

ICARUS blue control set for W.F.S.S. + CS — TM600 hand-held remote, R820 receiver and junction box, pre-wired with Molex connectors.

W.F.S.S. + CS SYSTEM WITH TM600 & R820 (DRAWING 90360012b)



Part number	Item	Notes
90022016	ICARUS blue TM600 hand-held remote	Buttons A – D, approx. 100 m range, USB-C rechargeable
90021012	ICARUS blue R820 receiver	8 outputs, 9 – 36 V DC, 10 A max. total, IP69K
90360013	Junction box 811	5 A fused; solenoid outputs 1 – 4
80360018	Solenoid cable set	4 × 1000 mm leads to solenoids 1 – 4
80360019	Power supply cable	700 mm, 3 × 1 mm²; + (8 mm), – (5 mm), starter (6 mm) rings
80360012	Earth cable	150 mm, 0.75 mm², M6 – M5 rings

PAIRING

Press button 1 on the receiver to enter pairing mode (status LED flashes red/green), then pair the TM600. Pairing should only be done above –10 °C.

SMARTPHONE APP

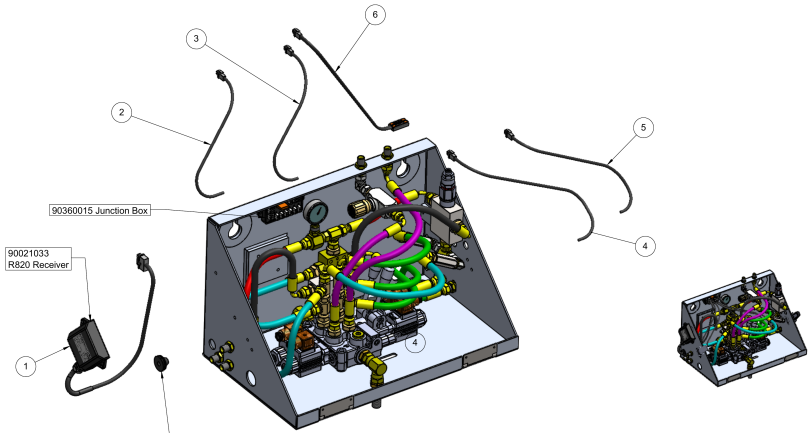
The receiver can also be controlled from the ICARUS blue smartphone app, with a working range of approx. 30 m.

PRODUCT DATASHEET

Setting Up

Wiring, commissioning and installation for both versions.

WIRING (STAGE 3) — R820 RECEIVER, JUNCTION BOX AND COIL LEADS



Cable	Description	From	To	Notes
1	Icarus receiver	Box side	12-pin connector on junction box	Via grommet
2	Output	2-pin connector no.1, junction box	Coil A on valve	
3	Output	2-pin connector no.2, junction box	Coil B on valve	
4	Output	2-pin connector no.3, junction box	Coil C on valve	
5	Output	2-pin connector no.4, junction box	Coil D on valve	
6	System power supply	2-pin connector 'PS', junction box	Flying lead with Waygo connector	

COMMISSIONING

1. Make sure the supply can generate enough pressure to set the relief valves, then set the directional valve relief so the gauge on the brake pilot line reads **no more than 140 bar**.
2. Adjust the SQCOM220Y pilot-operated valve so the brake engages and disengages cleanly. If the system doesn't build enough pressure the valve won't shut off, and the motor/brake won't work correctly.
3. Set the opening and closing speed to **about 10 seconds each way** to avoid overstressing the straps and damaging the tarpaulin.
4. On the CS version, use the FRV10 to slow the bulkhead rewind if it is too fast, and set up the winch friction brake to the bulkhead winch instructions.

HOSE KIT

Supplied as a labelled kit: all hoses **1/4" two-wire** with **1/4" BSP** fittings. 10 hoses for W.F.S.S., 13 for the CS version (see page 8).

INSTALLATION

Fit during the trailer build or as a retro-fit. Plumb the flow divider into the walking floor pressure line; the module needs a P and a T connection to the supply.