



USER MANUAL

Installation and Operating Instructions



Envirosys® Automatic Bar & Chain Grease System for Logging Equipment

- Increase Productivity
- Reduce Operating Costs
- Complete Elimination of Chain Oils



SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE!

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INTRODUCTION

CONGRATULATIONS! You have just invested in the next generation of lubricating technology for your logging equipment. Your purchase ensures years of clean, reliable and highly cost-effective operations. We trust that you will appreciate the quality of our **ENVIROSYS®** Automatic Bar & Chain Grease System.

Please read this manual in its entirety. Its purpose is to familiarize you with your **ENVIROSYS®** system, safe installation, proper operation and maintenance. It contains information that is useful to you now, and in the years to come. So keep it handy and refer to it as needed.

The performance of your **ENVIROSYS®** system depends of many variables. Since all installations are unique, the general information and operating procedures presented here can only serve as useful guidelines rather than hard and fast rules. Should you have any questions, do not hesitate to contact your dealer for additional information.

The **ENVIROSYS®** Automatic Bar & Chain Grease System is manufactured and warranted by:

STL  **LUBRIFIANTS**

The maker of Envirosys®

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SAFETY INFORMATION

Read and understand this User's Manual thoroughly before installing and using the ENVIROSYS® Automatic Bar & Chain Grease System.

Make sure to install the ENVIROSYS® system:

- According to the manufacturer's recommendations
- In accordance with all applicable codes
- By employing qualified technician

When using your ENVIROSYS® system:

- **Never** modify the ENVIROSYS® system in any way
- **Never** use other grease than the ones recommended by the manufacturer
- Inspect the pump, control unit, pipes and cables as recommended

Other safety guidelines:

- Always use the necessary personal protective equipment
- Install the ENVIROSYS® system in a place where re-filling the reservoir with grease can be done without risk of slipping and/or falling down
- Clean the ENVIROSYS® system as needed

GENERAL DESCRIPTION

The patented ENVIROSYS® system is replacing oil used to lubricate the cutting parts of a harvester head with biodegradable or standard chain grease. Through an ingenious system using an operator interface in the operator cabin, the chain grease is injected under pressure, reaching and protecting the cutting parts up to six times more effectively than with a conventional oil system.

The ENVIROSYS® system consists of an electric pump, a reservoir capable of storing two special chain grease cartridges of 2 kg (approximately 4.4 lbs) each, an operator interface and electrical cables.



SPECIFICATIONS

Weight (empty)	11 kg	24,2 pounds
Dimensions (Height x Diameter)	45 x 30 cm	18 x 12 inches
Operating temperature	-30 °C to + 80 °C	-22 °F to +175 °F
Voltage	12 or 24 Volts DC (specify when ordering)	
Power (maximum)	50 Watts	
Reservoir capacity	Approx. 5 kg	Approx. 11 lbs
Grease characteristics	Standard or Biodegradable <i>See Technical Data Sheet in Appendix</i>	

Principal Components and Features:

Grease Pump

- Available for 12 VDC or 24 VDC electrical systems
- Pistons type activation for highly efficient grease delivery
- Relief and check valves to prevent overpressure and backflows

Grease Reservoir

- Specially designed to connect with our special cartridges (accordion type) to minimize risk of grease contamination when refilling
- Uses grease agitator for maximum efficiency
- Low level sensor to help preventing unexpected shut-downs

Grease Cartridges

- Developed in our laboratories for the sole use of the **ENVIROSYS®** system
- Each cartridge weighs 2 kg (approximately 4.4 lbs) and is available in boxes of four units each
- Available in two types - highly adhesive standard and biodegradable chain greases - for both summer and winter conditions

Operator interface

- Touch screen capability
- Uses to oversee and control the chain grease lubrication process
- Allows flow rate control for optimum lubrication
- Warning light and audible alarm to indicate time for refilling
- Control up to two saws and one roller equipment
- Use to upgrade software version from a SD card

Electronic control unit

- Contains state-of-the-art controller to oversee all operations
- Contains necessary electric protective fuses

Electrical Cables and Converter

- All pre-wired and numbered cables for easy installation
- 12 to 24 VDC converter available upon request (included with 12 VDC system)

INSTALLATION

The ENVIROSYS® system can be installed on all models, types and brands of harvester head and forestry machinery.

The device is completely independent from the existing hydraulic systems and can be removed and re-installed if the machinery is upgraded.

Unpacking

We package your **ENVIROSYS®** system with the greatest care so that it ships safely. Under certain circumstances, however, damage can still occur during transit and handling. When you receive your **ENVIROSYS®** system, unpack it carefully, inspecting it and all parts for damage. Also ensure that all parts are included. If any parts are damaged or missing, please contact your dealer immediately.

WARNING: Before installing the **ENVIROSYS®** system, always **TURN OFF** main power to system.

Installing the **Pump, Reservoir and Electronic control unit**

1. Find a protected area with easy access (e.g.: engine compartment which provide good protection and warmer environment during cold weather)
2. Leave enough space above and around the reservoir to allow refilling
3. Drill two holes of 10mm (3/8") horizontally (center to center distance = 120 mm or 4¾")
4. Secure the pump and reservoir with supplied bolts on a solid surface
5. Secure the electronic control unit nearby the pump and reservoir (less than 1m / 3 feet)

Installing the **Operator interface**

1. Find an appropriate space in the operator cabin
2. Ensure reachable access for the operator to control the various injection parameters during operation
3. Use the bracket provided to support the touch pad display
4. Screw the operator interface in place

CAUTION: Try to stay away from electromagnetic interference (EMI) (e.g.: Radio FM)

Installing the **Grease Conduits** (Not provided)

1. Use existing oil conduit or hose, if any, by simply connecting it to the pump outlet
2. In the absence of oil conduit, use ¼" diameter hydraulic quality hose (approx. 6.35 mm) equivalent to SAE 100 R2AT / DIN EN 853 2SN (400 bar / 5800 psi)
3. Install the conduit along the hydraulic lines on the boom of the harvester machine - from the main unit to the saw bar. The feeding line installation should take into consideration boom configurations (i.e. telescopic or extendable masts)
4. Connect the conduit to the pump unit and to the saw bar using JIC female swivel O4 type fittings whenever possible

NOTE:

A larger hose diameter does not provide any advantages or disadvantages. Each 10-metres (33 feet) length of ¼" diameter hose section corresponds to a volume of 1300 cc or approximately 1.3kg of grease.

Some harvester head models (Supercut) specify a maximum 50 bar pressure in order to avoid gasket damage. In these cases, a pressure-reducing valve has to be installed (from 300 to 50 bars) near the saw block to avoid exceeding the prescribed standard. This pressure reducing valve is available in the **ENVIROSYS®** system parts list.

Installing the **Electrical Cables**

1. Connect the pump unit (#5 and #6) to the electronic control unit (#8) using the pre-assembled cable
2. Connect the operator interface to the electronic control unit using the pre-assembled cable (#1)
3. Identify and connect the saw signal (positive or negative) to the control unit (#3). If no signal is available in the cabin, the signal will have to be brought from the saw unit located on the head. It is recommended that the signal be identified by the manufacturer
4. Connect the electronic control unit to the main power source/ Key Relay (#2)

IMPORTANT NOTE: Your **Envirosys®** system must be ordered adequately to match your available electrical system (i.e. 12 VDC OR 24 VDC).

Note that a 12 to 24 VDC converter unit is available upon request. The attached wiring diagram in appendix can also be used in support to installation

GETTING STARTED

1. Start by manually filling the supply hose with **Envirosys®** grease. Use a manual grease pump, not the **Envirosys®** system for now
2. Fill up the reservoir by adding two **Envirosys®** 2kg chain grease accordion cartridges
3. Power up the **Envirosys®** system by turning ON your equipment start key
 - The right operation of the **Envirosys®** system will be confirmed when the operator interface turn "ON"
4. Press the "Initial Load" button
5. Verify that grease is coming out of the lubrication channel on the saw unit
6. You are now ready to do what you are doing best, harvesting!

NOTE: The **Envirosys®** system comes with factory setting grease injection parameters. All parameters can be modified by the operator at any given time. Please refer to the "OPERATING/Programming" section of this user manual for more detail.

OPERATING

Filling the system with grease



1. Unscrew the reservoir lid
2. Take a 2kg grease accordion cartridge and connect it to the top of the reservoir
3. Press it down to empty the cartridge
4. Put the reservoir lid back in place

Clean prior to refill & do not overfill



Safety advice: We recommend the use of protective gloves & glasses when refilling

Note: Always clean the area around the lid before open to prevent debris from falling into the tank when filling the system.

Programming the Operator interface

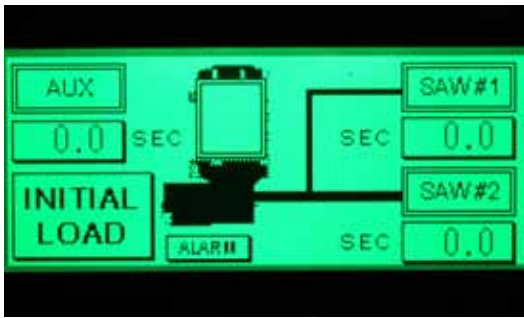


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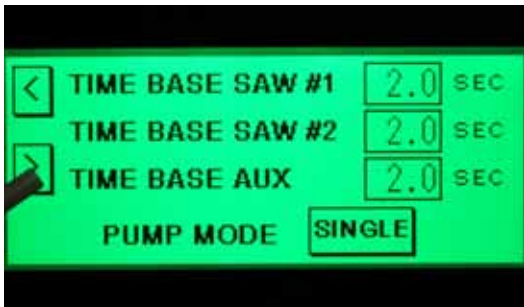
The version of your software appears here

Saw selection screen



Press "SEC SAW #1, #2 and AUX", grease injection settings.

Injection duration screen



Press the desired time button (SEC SAW#1,#2 or AUX)

Select new duration time in seconds

Press the left arrow to confirm and return to the previous screen

Press the right arrow to access the pre-charge injection screen

NOTE: The injection duration period may vary according to operation conditions, type and size of wood, and chain saw types (.404 vs 3/4" pitch)

Pre-charge injection screen



Adjust the time for which the saw can stay inactive without pre-charge

Adjust the pre-charge duration time in seconds

Adjust the start-up pre-charge duration time in seconds

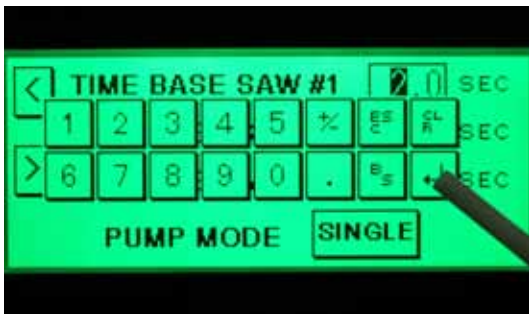
Press twice the left arrow to return to the main screen

NOTE: The pre-charge functions are used to ensure non-interruptible supply of grease to the saw chain unit following grease pressure drop due to idling period of operation.

Factory settings

- 1.75 seconds for the injection duration time
- 30 seconds delay prior to pre-charge
- 2 seconds pre-charge following delay
- 20 seconds pre-charge on initial start-up

Numeric keypad screen



Use this numeric keypad to change settings

Press the arrow button to return to the previous screen

Grease Low Level Alarm screen



Indicates a system fault due to a low level of grease

Note: Adding grease will reactivate the system and this message will disappear.

Please refer to the "Updating the Envirosys® Software" section in Appendix when necessary

MAINTENANCE

Performing routine actions to keep the **Envirosys®** system in working order or prevent trouble from arising is part of a good preventive maintenance plan that will keep your **Envirosys®** system reliable and performant for many years.

Cleaning the **Envirosys®** system

- Always clean the top of the reservoir before filling
- Avoid dirt contamination when manipulating grease cartridges
- Clean the air vent passage underneath the black lid on top of the reservoir to allow free flow of grease
- DO NOT mix other lubricant or products with **Envirosys®** greases

Note: Contamination and non-Envirosys® greases usage will void the system warranty

Replacing a piston

- Remove the bottom part of the pump
- Make sure the eccentric shaft is not facing the piston to ease its insertion (the vertical scraper inside the reservoir must face the piston that will be removed)
- Use the manual override button located on top of the electronic control unit to position the eccentric shaft
- Replace the piston manually in order to avoid damaging threads
- Check for any leak after the installation

Recommended spare parts

- Pistons
- Check and relief valves
- Pressure reducing valve (for some harvester head models)
- Pipes and fittings
- Springs
- Fuses (3A)

TROUBLESHOOTING

Virtually all harvester operators experience basic common problems at one time or another while operating. With the **Envirosys**[®] system, most of them are correctable and generally require only a minor adjustment of the installation, or operation technique. It is important to be aware of the possible causes of problem in order to take the appropriate actions.

PROBLEM	POSSIBLE CAUSE	SOLUTIONS
NO GREASE BEING INJECTED	Power off	Turn power ON to the Envirosys [®] system
		Verify and change fuses
	Insufficient injection duration time settings	Increase the injection duration time period
	Insufficient pre-charge injection duration time settings	Increase the pre-charge injection duration time period
	Conduit or hoses disconnected or leaking	Reconnect conduit and/or hoses
		Identify and fix the leak
	Defective piston	Use manometer to measure pump pressure. Should read 300 bar (4300 psig). Replace defective piston.
	Relief valve settings too low	Adjust relief valve with a grease manometer to 300 bar (4300 psig)
	Contamination	Verify for contaminants and clean the system
Air entered the system	Eject it by disconnecting the "T" connector and bleed the line until grease comes out	
FROZEN GREASE	Improper grade selection (winter vs summer)	Verify for grease hardness and change grade
PUMP RUNNING CONTINUOUSLY	The manual override button on the electronic control unit is ON	Push the manual override button once

WARRANTY

All **Envirosys**[®] system components are guaranteed for a two-year (2) period, only if the following rules are applicable:

- System cleanliness. If solid contaminants are found inside the system, no warranty can be applied
- Mixing other products, different from **Envirosys**[®] greases. Since the system has been tested and validated with our **Envirosys**[®] greases, any use of other products voids the warranty
- Any misuse of the system is not covered by the warranty
- If the system is returned to the purchase location for repair; no labour costs will be charged
- All new **Envirosys**[®] parts are warranted for a period of three (3) months from the date of delivery;

Note: Contamination and non-Envirosys[®] greases usage will void the system warranty

Model number:

Unit serial number:

Operator interface serial number:

Date manufactured:

Date purchased:

Technical Support Division

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CONTACT YOUR DEALER FOR MORE INFORMATION

APPENDIX

DECLARATION OF INCORPORATION

According to directive 2006/42/EG, Annex 2B

S.T.L. Lubrifiants
208 Rue de Parc Industriel
St-Prime, Québec, Canada
G8J 2B1

Declare under our sole responsibility that the products:

Grease lubrication equipment for saw chain cutting attachments, **Envirosys**® 12 VDC or 24 VDC from year of manufacture 2010 and onwards following the provisions of Directives:

2006/42/EC, Machinery
2004/104/EC, Electromagnetic compatibility (EMC)

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

EN ISO 12100-1/A1:2009, -2/A1:2009, EN 60204-1:2006, EN 61000-6-2, EN 55011, EN 61000-6-4

The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC.

04 October, 2010

Robert Soucy, chemist
President



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GREASE TECHNICAL DATA

BIO LUBRICANTS

BIO lubricants are a family of biodegradable and non-toxic fluids. They were especially formulated to offer optimal performance for any lubricating application, i.e., hydraulic systems, industrial gears, slide ways, pneumatic and percussion tools. These lubricants are manufactured with biodegradable vegetable oils and provide optimal protection for forestry equipment's, sawmills, slide ways, pneumatic tools and jack drills. The additive package used is ash less and approved for incidental contact with food (H-1 and H-2). These lubricants do not affect yellow metals; moreover, they offer superb performance under the most adverse operating conditions.

All BIO lubricants from **S.T.L. LUBRIFIANTS** offer the following characteristics:

1. Superior load carrying capacity and resistance to abrasion
2. Superior protection against rust and corrosion
3. Outstanding anti-wear properties and,
4. Higher resistance to oxidation than most conventional biodegradable lubricants. In addition, these lubricants form a highly adherent and tenacious film which increases metal surface protection while reducing stray-mist.

CHARACTERISTICS

All BIO fluids possess the following characteristics:

- Virtually no toxicity.
- Biodegradability higher than 97 %.
- Exceptional anticorrosion, antirust, extreme-pressure and anti-wear properties.
- Excellent oxidation stability and high adherence to surfaces.
- Good low temperature properties.
- Excellent anti-foam properties.

These will be approved by organizations such as NSF and CFIA. Other viscosity grades will also be available in a near future. Clearly, these lubricants are ideal for industries to which the environment and the welfare of employees are a concern.

ENVIROSYS® BIO EP GREASE

Envirosys® BIO EP GREASE winter & summer grades are high temperature, multi-purpose greases with low coefficient of friction. **Envirosys**® BIO EP GREASE is ideal for applications where there is constant environmental exposure due to pass through lubrication, unsealed bearings or similar open design.

Envirosys[®] BIO EP GREASE is an industrial grease that is not just rapidly biodegradable and operator safe but environmentally safe. **Envirosys**[®] BIO EP GREASE is made from a vegetable oil carrier. The risk of both water and soil contaminants is reduced and risk of long and short term liability is minimized. Use **Envirosys**[®] BIO EP GREASE where grease is entering the environment.

ADVANTAGES

- **Envirosys**[®] BIO EP GREASE contains no petroleum oil carriers; petroleum based additive packages or metal additives such as lead or zinc.
- **Envirosys**[®] BIO EP GREASE can be used in centralized dispensing system applications where the potential for environmental contamination is a concern.
- **Envirosys**[®] BIO EP GREASE continues to lubricate in the presence of water.
- **Envirosys**[®] BIO EP GREASE has an exceptional low coefficient of friction
- **Envirosys**[®] BIO EP GREASE has a very high dropping point >343°C (>644°F).

ENVIROSYS[®] ALC GREASE

Envirosys[®] ALC winter & summer grades are premium quality, extreme pressure multi-purpose greases and heavy-duty applications that have a smooth and tacky consistency and is amber in color, up to 325°F in plain, anti-friction bearings, slides and way with frequent resupply.

Special extreme pressure additives provide a high load carrying capacity and anti-wear protection. Excellent water resistance provides bearing protection when water wash-out or leaching conditions are encountered. Excellent dispensability and pumpability properties make this grease suitable for various methods of dispensing, including centralized lubrication systems.

Applications and Recommendations:

Excellent shear or mechanical stability, excellent oil retention and good thermal stability make this grease a prime choice in such applications as: plain and anti-friction bearings - especially where high temperatures occur; roller and needle bearings; flexible couplings; automotive disc brakes; water pumps; fan bearings, electric motors, slides and ways where excellent adhesiveness is required.

Envirosys[®] ALC greases deliver almost as much advantages as our **Envirosys**[®] Bio version for the environment since the volume of lubricant consumed is reduced drastically compared to the old method of using chain oils.

UPDATING THE ENVIROSYS® SOFTWARE

Step 1: Take off the left side-panel (star-screwdriver)

Step 2: Simply slide the face cover to the left on display.

Step 3: Put the power on

Step 4: Insert the SD card into the slot and push it down until you hear a clic

Step 5: Go to the page setting mode

Step 6: Installing the new program , Select SD → PLC , you should see the program on the SD card (FP-V9.1). Press download and then OK to confirm that you really want to overwrite the current program.
Next : Change mode from RUN to PROG sure? Press OK. Impossible to write PCE file, no area for PCE file, Press OK. Completed, Press OK. Change mode from PROG to RUN Sure? Press OK.

Step 7: Back on the screen setting mode

Step 8: Chose SD→GT , you'll see (GT-V.9.1) press on thas and confirm that you want to copy this / really download ? OK / Copied 100% Press OK

Step 9: Press ESC to come back to the main screen.

Step 10: Remove the SD card and close everything in the reverse order it has been dismanteled



STEP 1



STEP 1 (2)



STEP 1 (3)



STEP 2



STEP 3



STEP 4



STEP 4 (2)



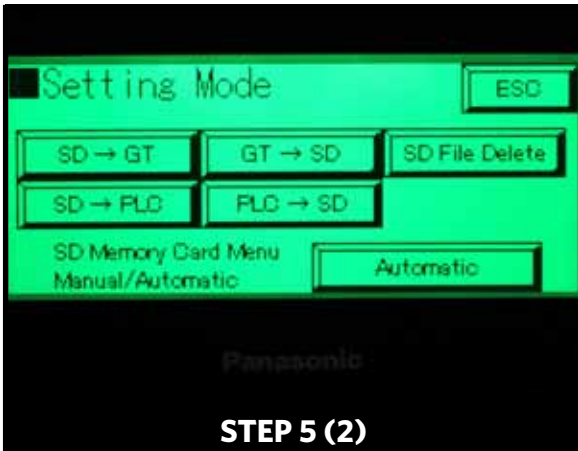
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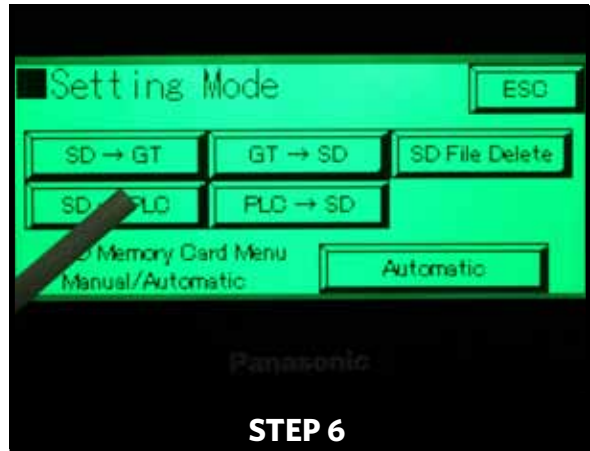
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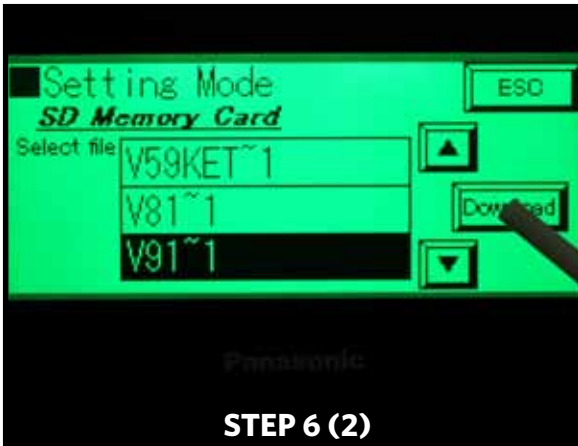
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STEP 5 (2)



STEP 6



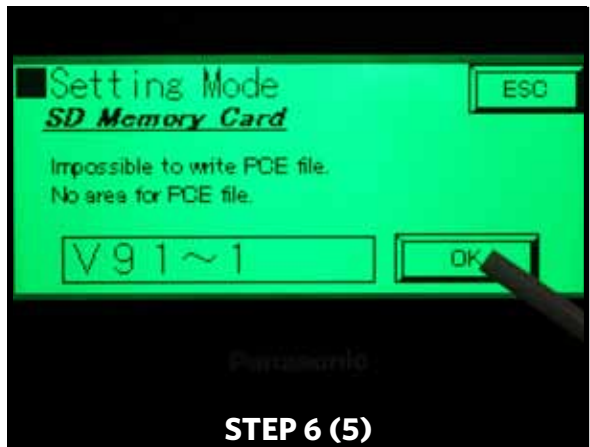
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STEP 6 (4)



STEP 6 (5)



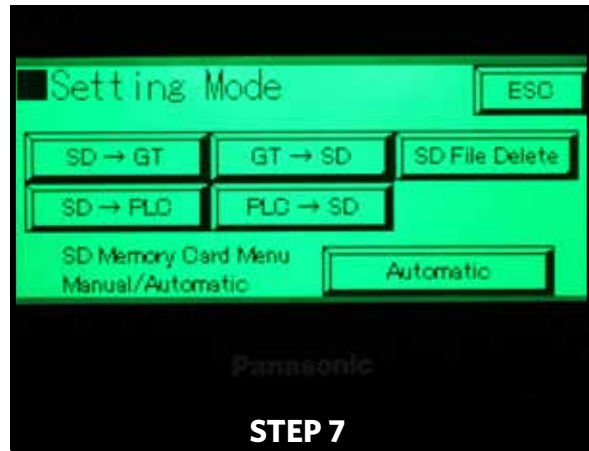
STEP 6 (6)



STEP 6 (7)



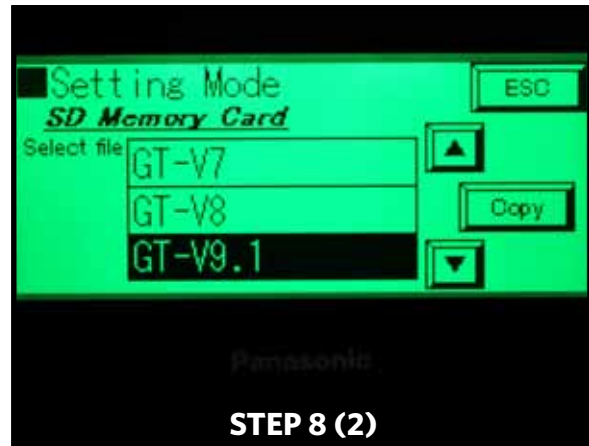
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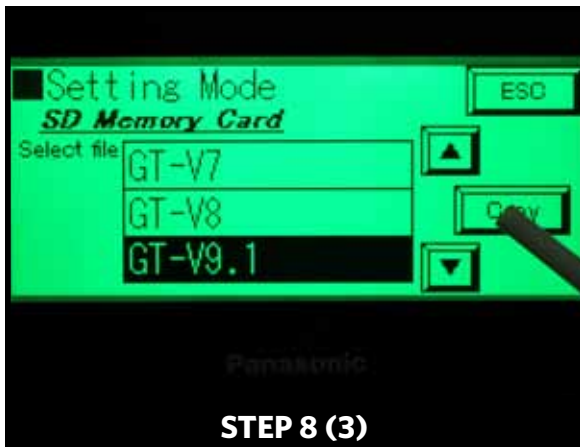
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STEP 8



STEP 8 (2)



STEP 8 (3)



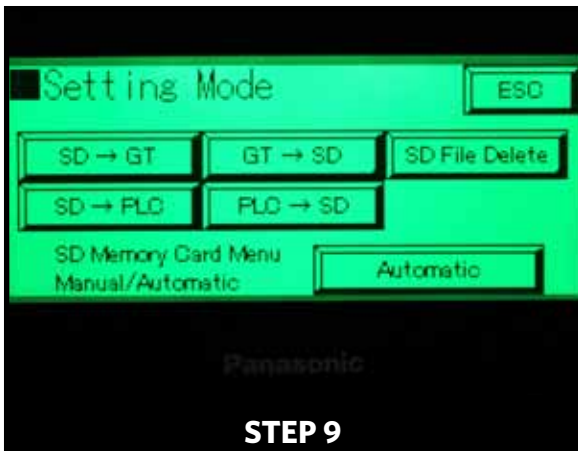
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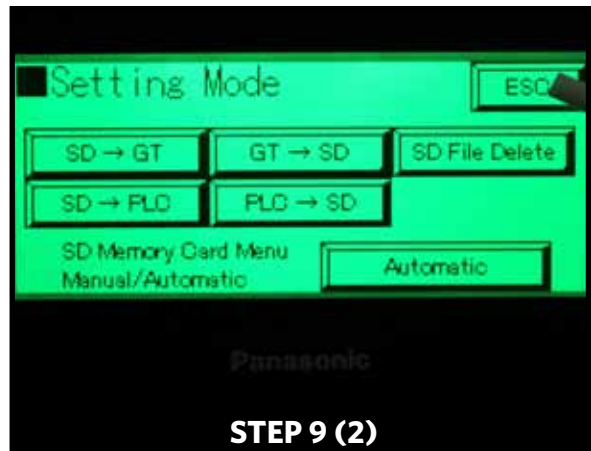
STEP 8 (5)



STEP 8 (6)



STEP 9



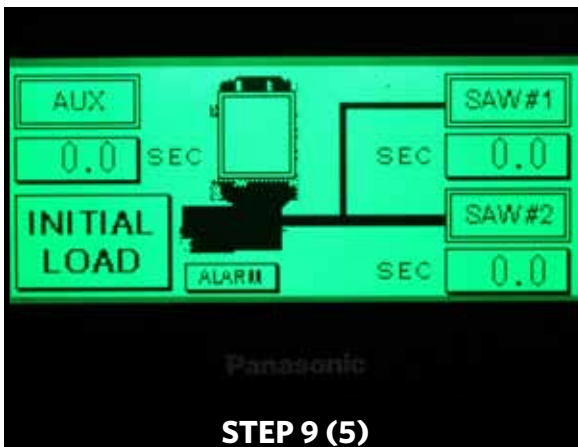
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STEP 9 (3)



STEP 9 (4)

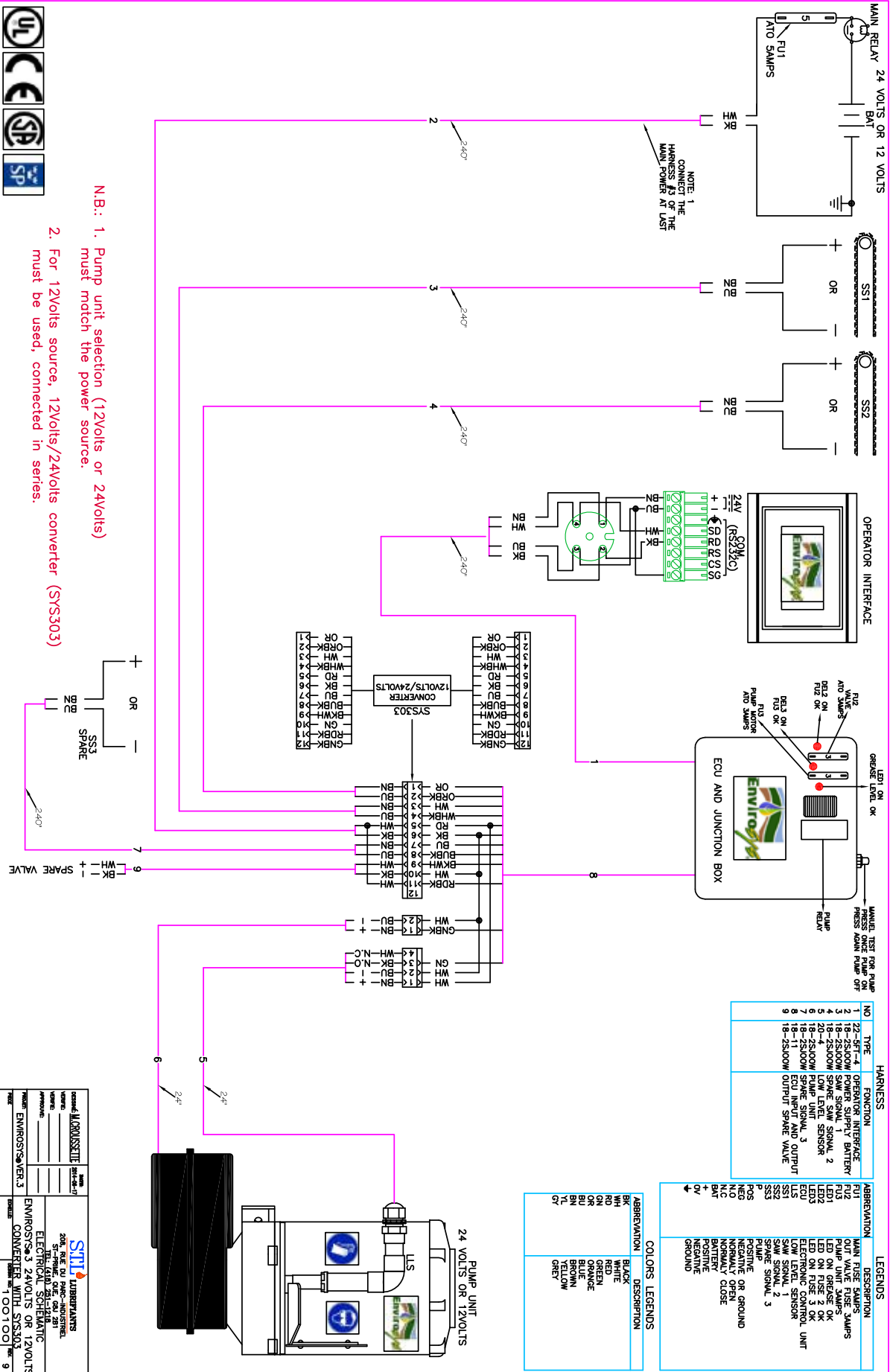


STEP 9 (5)



STEP 10

Wiring diagram



- N.B.:**
1. Pump unit selection (12Volts or 24Volts) must match the power source.
 2. For 12Volts source, 12Volts/24Volts converter (SYS303) must be used, connected in series.



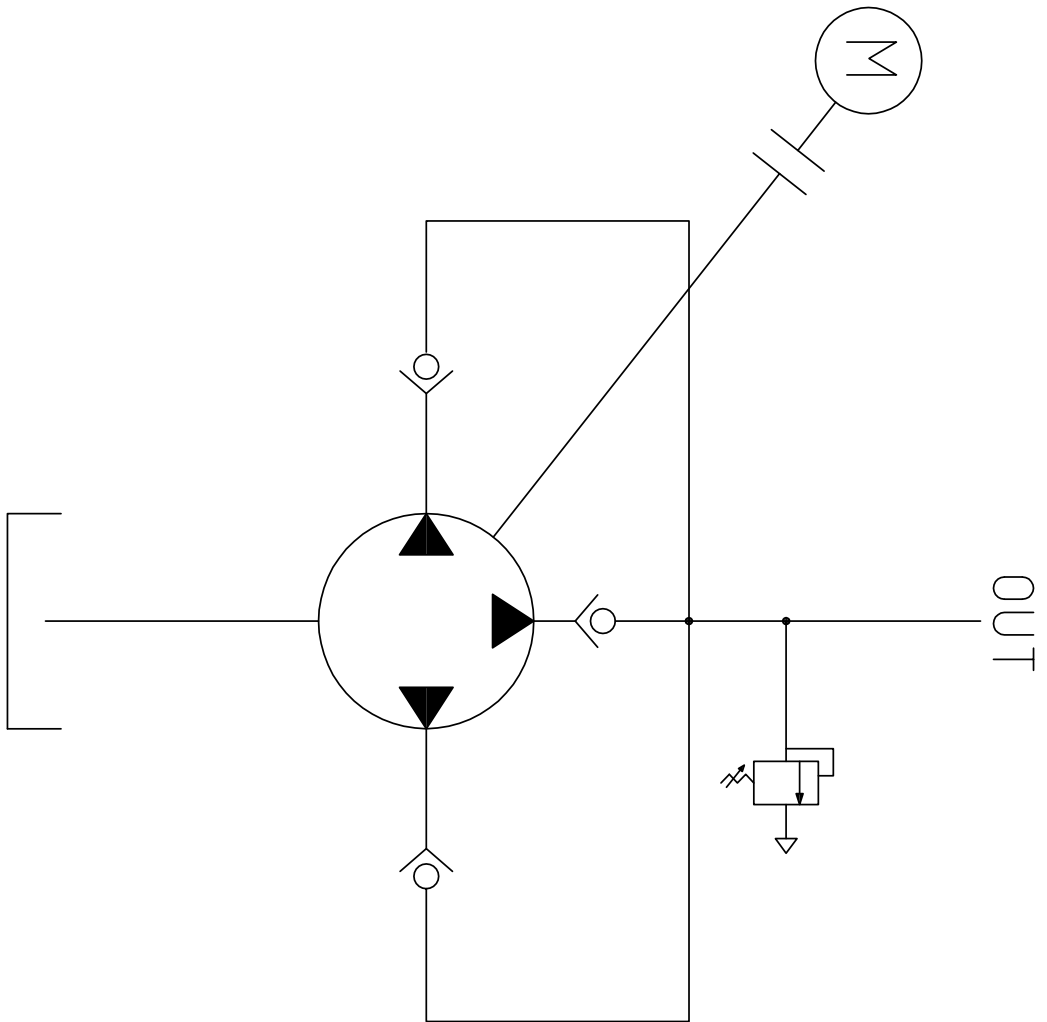
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ENVIROSTA 3 24VOLTS OR 12VOLTS CONVERTER WITH SYS303

100100 9

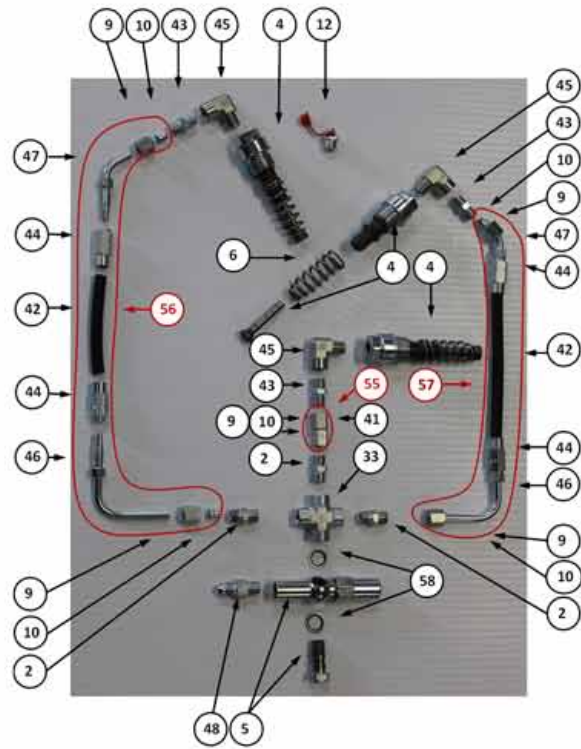
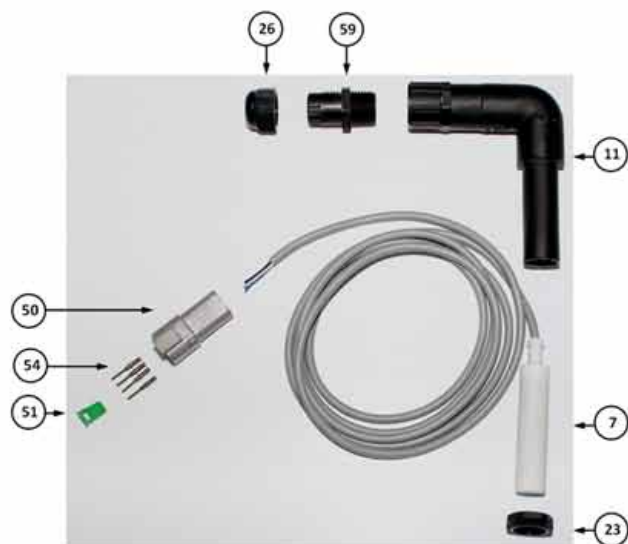
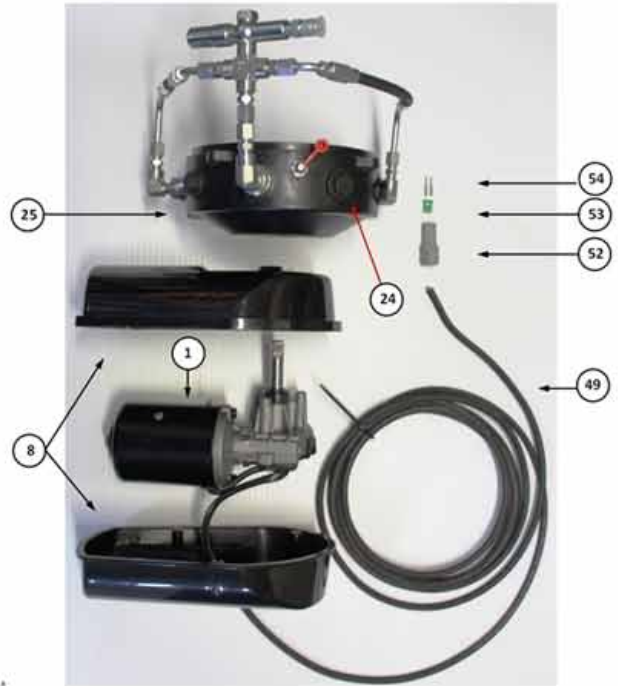
Hydraulic diagram



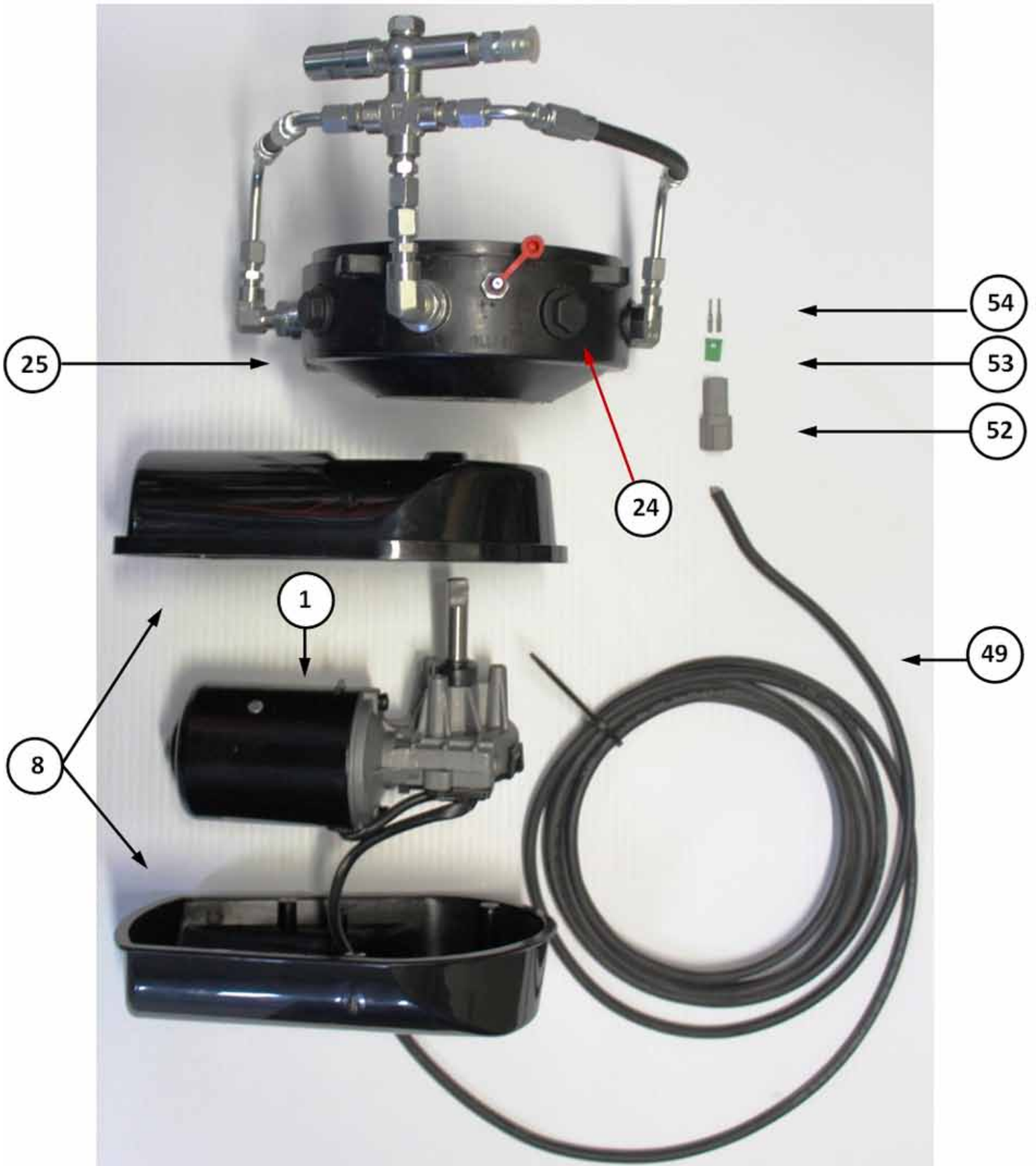
DESIGNÉ: M. CROUSSETTE	DATE: 2014/06/16	STIL LUBRIFIANTS ZONE DU PARC INDUSTRIEL S1 - PRIME, OUE, 683 281 TEL: (418) 251-1218
VERIFIÉ: _____	_____	
APPROUVÉ: _____	_____	
PROJETÉ: _____	_____	
PIECE: _____	DESIGN NO: 1 000301	REV: 1

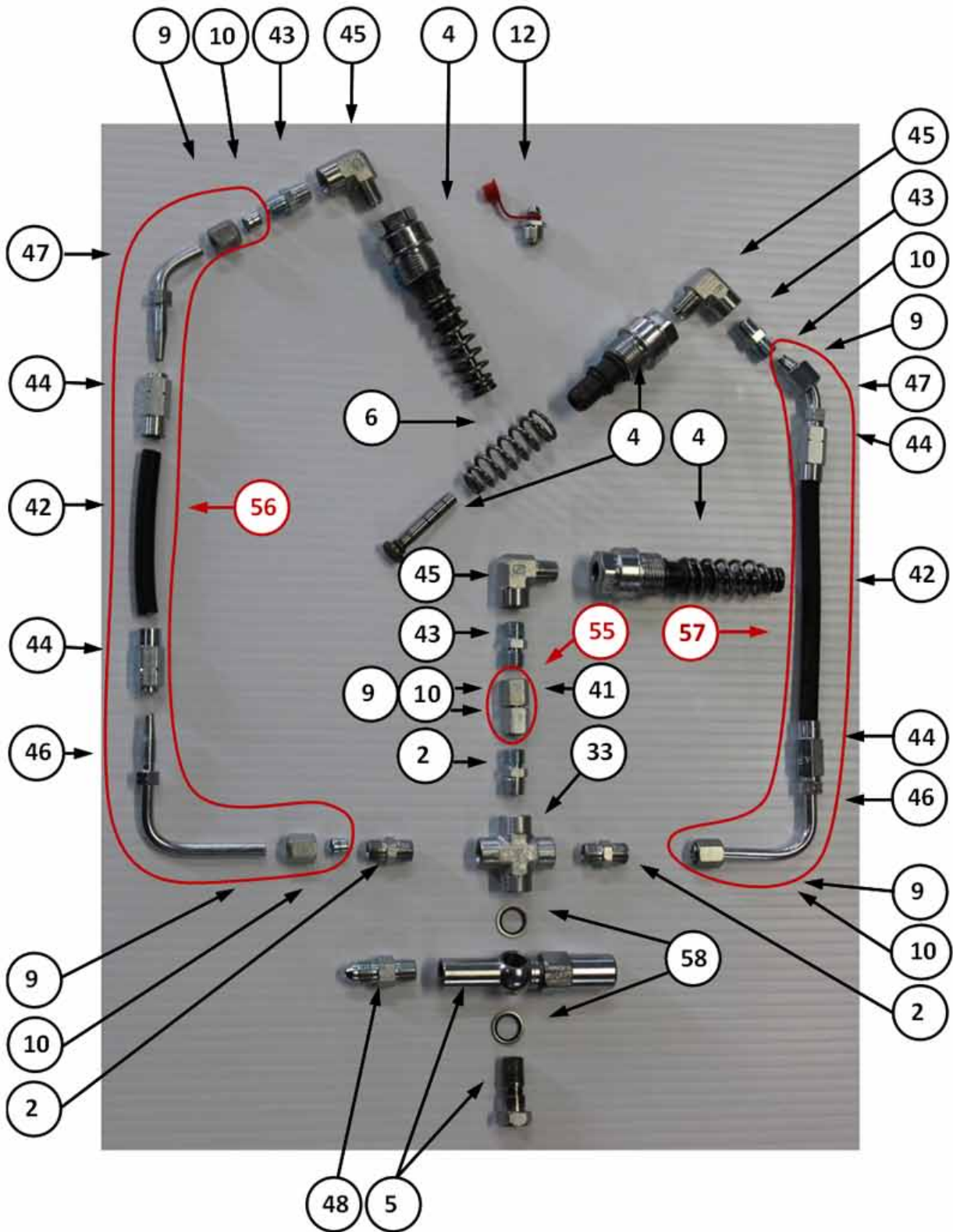
ENVIROSYS® PARTS LIST













Electronic Control Unit Diagram

PUMP MANUAL OVERRIDE
PRESS ONCE PUMP ON
PRESS AGAIN PUMP OFF

LED1 ON
GREASE LEVEL OK

⑥5
FUSE2
VALVE
ATO 3 AMPS

LED2 ON
FUSE2 OK

⑥6
PUMP
RELAY

LED3 ON
FUSE3 OK

⑥5
FUSE3
PUMP MOTOR
ATO 3 AMPS



PARTS LIST

POSITION	PARTS NUMBER	QTY	DESCRIPTION
1	SYS001-12	1	MOTOR 12 VDC
1	SYS001-24	1	MOTOR 24 VDC
2	SYS002	3	ADAPTOR
3	SYS003	2	BEARING
4	SYS004	3	PISTON
5	SYS005	1	RELIEF VALVE
6	SYS008	3	SPRING
7	SYS009	1	LOW LEVEL SENSOR
8	SYS010	1	MOTOR COVER
9	SYS011	6	NUT
10	SYS012	6	SLEEVE
11	SYS013	1	HOLDER SENSOR
12	SYS014	1	GREASE FITTING
13	SYS015	3	BOLT
14	SYS016	1	SNAP RING
15	SYS017	1	BUSHING
16	SYS018	2	ALLEN SCREW
17	SYS019	1	RESERVOIR
18	SYS020	8	NUT
19	SYS021	8	WASHER
20	SYS023	4	ANCHORING NUT
21	SYS024	4	THREADED ROD
22	SYS025	1	RESERVOIR LID
23	SYS026	1	NUT
24	SYS027	3	PISTON PLUG
25	SYS028	1	FRAME
26	SYS029	1	NUT
27	SYS302	1	OPERATOR INTERFACE
28	SYS303	1	12VDC TO 24VDC CONVERTER ENVIROSYS®
29	SYS032	2	SNAP RING
30	SYS033	1	BEARING
31	SYS035	1	O RING
32	SYS301	1	CONTROLLER ENVIROSYS®
33	SYS037	1	CROSS ADAPTER
34	SYS039	1	STRAINER
35	SYS042	1	AGITATOR
36	SYS043	1	GROMET
37	SYS045	1	NUT
38	SYS046	1	CAM
39	SYS047	1	FILLING CAP
40	SYS304	1	HARNESS KIT

PARTS LIST

POSITION	PARTS NUMBER	QTY	DESCRIPTION
41	SYS048	1"	STEEL TUBE
42	SYS055	9"	HIGH PRESSURE HOSE 6 MM I.D. X 8.3 MM O.D.
43	SYS050	3	CHECK VALVE SHORT
44	SYS051	4	SLEEVE 6mm
45	SYS052	3	ELBOW 90° 2FP-2MP
46	SYS053	2	ADAPTER FOR SLEEVE 6mm 90° LONG
47	SYS054	2	ADAPTER FOR SLEEVE 6mm 45° SHORT
48	SYS056	1	HYDRAULIC ADAPTOR
49	SYS057	72"	WIRING PUMP 18/2 SJOOW
50	SYS058	1	CONNECTOR PIN 4
51	SYS059	1	LOCK CONNECTOR PIN RECEPTACLE 4
52	SYS060	1	CONNECTOR PIN 2
53	SYS061	1	LOCK CONNECTOR PIN RECEPTACLE 2
54	SYS062	6	CONTACT PIN 16-18 AWG
55	SYS063	1	ADAPTOR
56	SYS064	1	SHORT HOSE ASSEMBLY
57	SYS065	1	LONG HOSE ASSEMBLY
58	SYS066	1	BONDED SEAL
59	SYS067	1	ELECTRIC ADAPTER
60	SYS068	1	OPERATOR INTERFACE HARNESS
61	SYS006	1	PRESSURE REDUCING VALVE
62	SYS007	1	HYDRAULIC BLOCK
63	SYS099	1	GREASE MANOMETER
64	SYS305	1	SD CARD
65	SYS308	2	FUSE 3AMPS TYPE ATO
66	SYS309	1	PUMP RELAY 8AMPS