



CLP

Operators Manual

Cartridge Lube Pump

36917 r#2



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Manufacturer's Statement

The manufacturer and/or distributor has provided the parts list and assembly diagram in this manual as a reference tool only. Neither the manufacturer or distributor makes any representation or warranty of any kind to the buyer that he or she is qualified to make any repairs or replace any parts to the product. In fact, the manufacturer and/or distributor expressly states that all repairs and parts replacements should be undertaken by certified and licensed technicians, and not by the buyer. The buyer assumes all risk and liability arising out of his or her repairs to the original product or replacement parts thereto, or arising out of his or her installation of replacement parts thereto.

General

Bijur Delimon's Cartridge Lube Pump (CLP) is an electrically driven, single outlet, pump designed for use with the universal grease cartridges widely available in industry today. The lubricator is available with 12 or 24 VDC or 115 or 230 VAC power making it ideal for use in a range of industrial and mobile applications. An integrated controller enables seamless operation and external communication to host machine.

This pump was developed to meet a growing demand for replacing bulk grease lubricators with a system that could handle the more convenient cartridge greases. The benefits of the cartridge system are as follows: convenience of refilling, clean, virtually zero waste, contamination free, easy to transport, and no requirement for support equipment to assist in handling and filling bulk grease.

Features

- Multiple Cartridge options
- Multiple Voltage options
- Compact, rugged design
- Minimal maintenance required
- 120 bar (1740 psi) operating pressure with internal relief valve
- Low Level Switch
- User friendly Integrated Controller available
- Extremely silent in operation
- SS External hardware for durability

Operation

A combined motor/gearbox unit drives an eccentric mechanism, which in turn operates a reciprocating piston. This action creates a suction and a pressure stroke, displacing a fixed volume of lubricant on every cycle of the piston, through an outlet check valve. An integrated, internal relief valve prevents excess system pressure, while a pressure gauge, fitted as standard, provides real-time feedback of the operating pressure.

The Cartridge Lube Pump may be used in conjunction with lubrication divider valves to progressively apply grease to individual lube points. For details on how to configure such a system please refer to the section on "Configuring a System".

Refer to the following:

- + DataSheet #36916:
CLP Lubricator
- + DataSheet #35635:
PVBM Divider Valves
- + DataSheet #35426
U-Blocks
- + Catalog # SL2800
Singline Systems

Technical Data - General

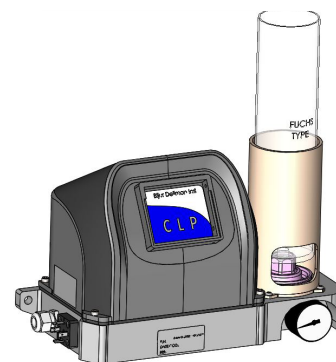
Cartridge Type	Option A	Type A - 400g Universal Cartridge (14 ounce cartridge)
	Option B	Type B - 400g Threaded Cartridge
	Option C	Type C - 500g Threaded Cartridge
Lubricant	Up to NLGI #2	
Max working Pressure	120 bar (1740 psi)	
Flow Rate	8cc/min	
Outlet Port	G1/4 (right hand side of pump, 1 alternate outlet bottom of pump)	
Operating temperature	-20°C to +50°C (-4°F to 122°F)	
Humidity	30...95%	
Approvals	CE	
Surface Finish	Standard	Cast Aluminium (Option N)
	Mobile	Black Powder Coat Polyester Paint (Option M)

Technical Data - Electrical

Operating Voltage		12 VDC / 24 VDC or 115 VAC / 230 VAC		
Current	12VDC	Max 4A	115VAC	Max 2.0A
	24VDC	Max 2.8A	230VAC	Max 1.0A
Degree of Protection		IP67		
Electrical Controls	Option G	On Board Controller		
	Option F	Terminal Strip		
Controller		Microprocessor Based c/w 4 digit Octal Display		
Controller Inputs		4 x Push-Button Keys for Programming/operating		
		Low Level Switch		
		Divider Cycle switch		
Controller Outputs		Fault Contact - Configurable N/O or N/C		
		Fault Contact Rating - 1A @ 24VDC & 115VAC / 0.5A @ 230VAC		
Low Level switch	Option A & B	Microswitch		
	Option C	Capacitive Switch		
Microswitch		SPDT 5A 125/250VAC (Data for option F)		
Capacitive Switch		10...36V DC NPN 100mA max (Data for Option F)		
Electrical Connections	Power	Cable Gland or DIN Connector		
	Fault Output	Cable Gland or DIN Connector or M12 Connector		
	Cycle Switch Input	Cable Gland or M12 Connector		
	Other	PG7 Port		

Technical Data - Physical Dimensions

Width (mm)	324			
Depth (mm)	140			
Mounting (mm)	2 x 8.5 Dia. holes, 306 center dimension			
	Option A	Option B	Option C	
		Option M	Option N	
Height (mm)(loaded condition)	390	360	305	325
Weight (excluding cartridge)	4.7 kg (10.4lbs)	4.4 kg (9.7lbs)	3.9 kg (8.6lbs)	4.0 kg (8.8 lbs)
Overhead Clearance (mm)	250	612	30	30



P.N. CLP-C2FYN

Refer to the following:

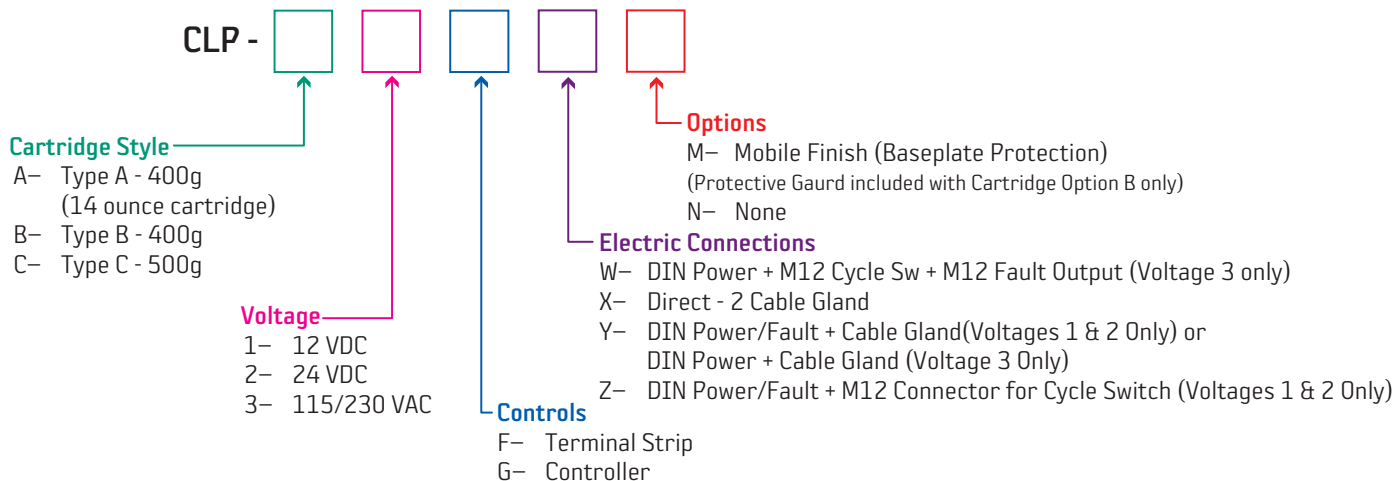
- + Datasheet #36916:
CLP Cartridge Lube Pump

Note:

- + For all "Option" references:
Refer to the **How to Order** section on page 4



How to Order CLP



Example: To order a Cartridge Lube Pump 24VDC that uses standard 14oz. grease cartridges, controller with cable gland connectors and a Mobile Finish, use Part #CLP-A2GXM.

Pump Cartridge Styles

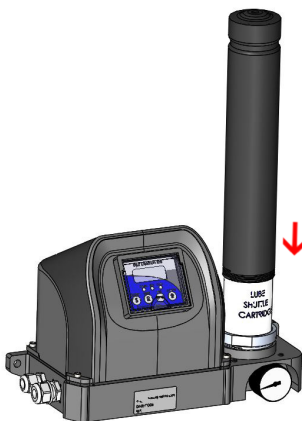
OPTION A



Cartridge Lube Pump with
Type A - 400g
(14 ounce cartridge)

P.N. CLP-A2GZN

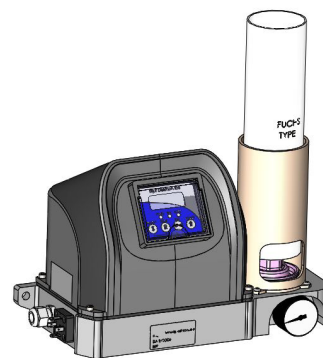
OPTION B



Cartridge Lube Pump with
Type B - 400g
& Mobile Finish

P.N. CLP-B2GXM

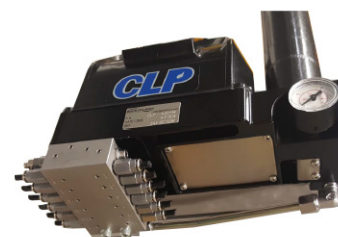
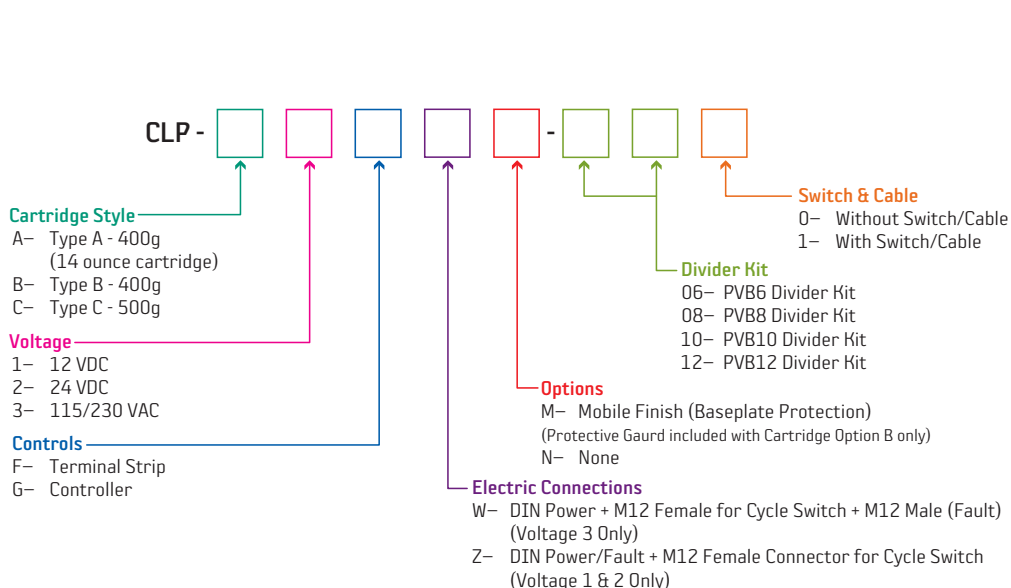
OPTION C



Cartridge Lube Pump with
Type C - 500g

P.N. CLP-C2GYN

How to Order CLP Kits



Cartridge Lube Pump
with PVB Kit

Example: To order a Cartridge Lube Pump Kit with a CLP-A2GZM & PVB 6 outlet divider, you would use Part #CLP-A2GZM-060.

ATTENTION:

The CLP w/PVB KITS include the following additional parts, see chart below:

- + 6mm HP O.D. Secondary Tubing
- + 6mm PVB HP PTC Outlet Fittings
- + 1/8NPT Straight HP PTC Lube Point Fittings
- + C & B Style PVB Plugs

note: C-Plugs cannot be used on outlets 1 or 2 of PVB Divider

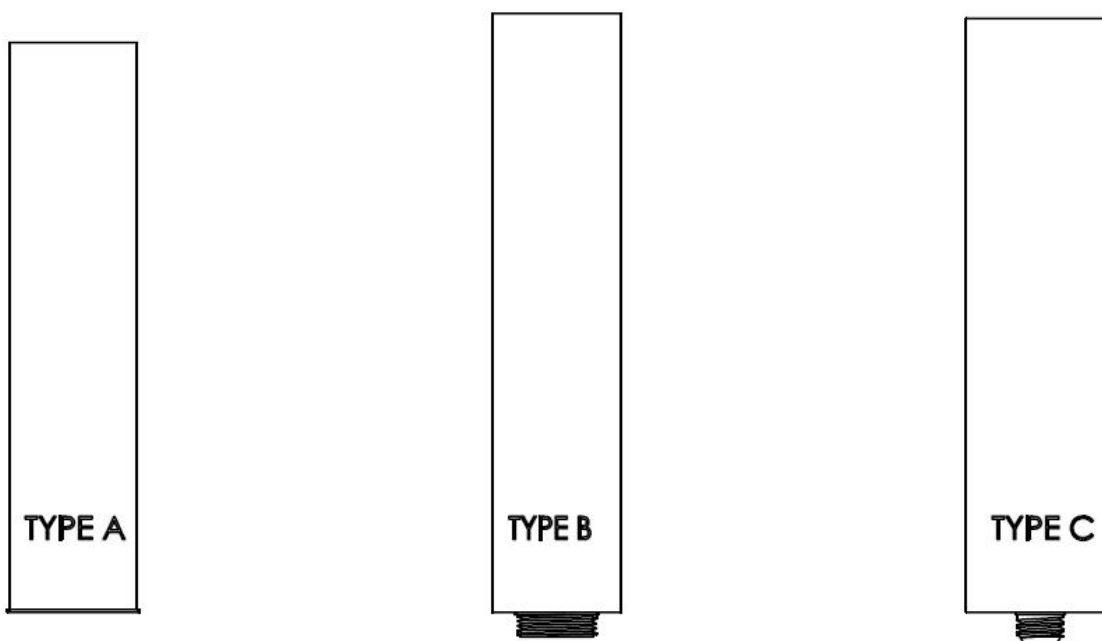
To use B-Plugs internal set screw and ball must be removed from outlet. (ref data sheet 35635 for more information)

Divider Kit Code	Outlet Fittings	6mm O.D. HP Tubing	Lube Point fittings	PVB C-PLUG	PVB C-PLUG WASHER	PVB B-PLUG	PVB B-PLUG SLEEVE
06	6	18 Meters	6	4	4	3	3
08	8	24 Meters	8	4	4	3	3
10	10	30 Meters	10	4	4	3	3
12	12	36 Meters	12	4	4	3	3

Cartridge Types

There are three cartridge options available with the CLP.

Type A – DIN 1284, 400g (14 oz. cartridge)	Type B – Lube Shuttle, 400g	Type C – Reiner System (Fuchs), 500g
235mm(L) x 53mm(Dia)	248mm(L) x 53mm(Dia) + Threaded End 11mm(L) x 33mm (Dia of Thread)	242mm(L) x 61mm(Dia) + Threaded End 14mm(L) x 19.5mm(Dia of Thread)
Ring Pull on outlet	Threaded Cap on Outlet	Threaded Cap on Outlet
Open Cap on Inlet (to be removed)	Follower Cap on Inlet (remains in cartridge)	Follower Cap on Inlet (remains in cartridge)



The table below summarizes the benefits of each of these cartridges, when used in the CLP and should assist in deciding which type of cartridge to use for your particular application.

	Type A	Type B	Type C
Global Availability	Yes	Yes in EU, Not so popular in US as yet	Popular in EU. Not in US as yet
In-built Protection of Cartridge	Yes	No	No
Speed of Replacement	Quick (30...40 seconds)	Instant (10 seconds)	Instant (10 seconds)
Effort of replacement	Mechanical Effort- Required to withdraw rod	Minimal Effort – Screw-In by hand	Minimal Effort – Screw-In by hand
Grease Feed	Spring assisted Follower	Atmospheric Pressurised Follower	Atmospheric Pressurised Follower
Installed Height of Unit	390mm	305mm	322mm
Overhead Clearance Necessary	250mm	30mm	30mm
Min Operating Temperature	-20°deg C (grease dependant)	0°deg C (grease dependant)	0°deg C (grease dependant)
Environment	Industrial / Mobile (Robust)	Industrial (Less Robust)	Industrial (less robust)

Mounting & Installation/Start-up

Mounting

CLP should be mounted horizontally, via the 2 mounting lugs on the baseplate of the pump.

Mounting Centers: 306 mm

Mounting Bolts: M8 or 5/16" (Lengths dependent on the specific installation)

Use of flat & locking washers is also recommended.

Mounting hardware/brackets is not provided.

In identifying the appropriate location for the CLP, care should be given to:

1. Overhead clearance necessary for replacement of cartridges, particularly of the Type A cartridge. Refer to the Technical Data section for clearance dimensions necessary for the various cartridge types.
2. Ease of Access to cartridge for regular replacement
3. Access to venting screw. Refer to Pump Connections Section.
4. Proximity to Divider valve and lubrication points. Refer to Configuring the System section for recommendations on lengths of lubrication lines.
5. Electrical Connections
6. Access to Controller on Motor Cover (under the flap) for programming the CLP.

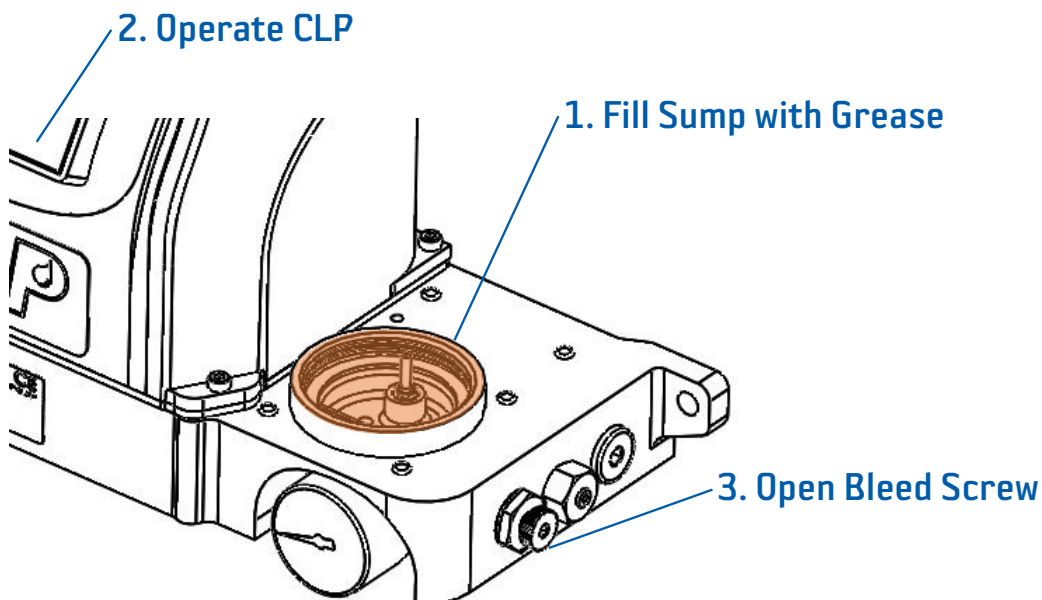
Preparing CLP for start-up

Ensure sump is completely free from any contamination.

Apply grease into the sump of the CLP and operate the CLP.

Observe the suction action of the pump on the grease. Open bleed screw and allow grease to run through using 3mm hex key.

Completely fill the sump of the CLP and pause operation of the CLP.



Loading a Cartridge (Initially)

Type A

1. Retract rod of Grease Gun Assy fully. Rod will stay in withdrawn position.
2. Remove protective cap on Inlet end of cartridge and discard carefully.
3. Remove ring tab on outlet end of cartridge and discard carefully.
4. Slide cartridge fully into tube of grease gun assembly.
5. Thread full assembly into baseplate of CLP. Holding the assembly in a dead vertical position, **Carefully** thread full assembly..., to avoid any risk of cross-threading.
6. With approximately 1/2 turn left, unlatch the lever, allowing the spring loaded follower onto the grease.
Note: It may be necessary to pull gently on the rod handle to unlatch the lever.
7. Finish threading the assembly fully home. Orientation of grease gun cartridge assembly is not important for the proper function of the CLP.
8. Push rod handle fully down. **THIS IS CRITICAL AS** failure to do so, may cause the rod to latch while dropping under normal operation, and this will result in malfunction of the CLP.

Type B

1. Ensure the appropriate thread adaptor is threaded tight to the base of the CLP to provide the necessary seal on the gasket underneath. Orientation of the thread adaptor after installation is not important.
2. Unscrew outlet cap from Lube Shuttle cartridge and discard cap carefully.
3. Gently apply pressure to the follower cap to bring grease out flush to the head of the cartridge.
4. Invert the cartridge and carefully thread into adaptor of CLP.
5. Continue threading by hand, until significant resistance is met.
Do NOT use any mechanical tool to further tighten the cartridge. This is not necessary and will damage the cartridge and possibly the adaptor.
6. Cartridge is now ready for operation.

Type C

1. Ensure the appropriate thread adaptor is threaded tight to the base of the CLP to provide the necessary seal on the gasket underneath. Orientation of the thread adaptor after installation is not important.
2. Unscrew outlet cap from cartridge and discard cap carefully.
3. Gently apply pressure to the follower cap to bring grease out flush to the head of the cartridge.
4. Invert the cartridge and carefully thread into adaptor of CLP.
5. Continue threading by hand, until significant resistance is met.
Do NOT use any mechanical tool to further tighten the cartridge. This is not necessary and will damage the cartridge and possibly the adaptor.
6. Cartridge is now ready for operation.

Replacing a Cartridge

Activation of low level switch indicates that the cartridge is empty and must be replaced.

For controller models (Option G), this activation will sound a buzzer, will illuminate the yellow Led on the front panel, will energise the fault contact and will display EELL on the controller.

For terminal strip models (Option F), the low level switch should be wired into the controls of the host machine in order to inform the user that the cartridge is empty and needs replacing.

Type A

1. Unscrew the gun barrel assembly from the CLP.
2. Retract rod fully.
3. Withdraw empty cartridge and discard carefully.
4. Carry out the steps outlined in "Loading a Cartridge" for Type A.
5. For Controller models, the "R" button must be pressed to resume CLP operation.

ATTENTION:

+ This sequence of steps is of paramount importance.

Type B

1. Unscrew the cartridge from the CLP.
2. Discard empty cartridge carefully.
3. Carry out the steps outlined in "Loading a Cartridge" for Type B
4. For Controller models, the "R" button must be pressed to resume CLP operation.

Type C

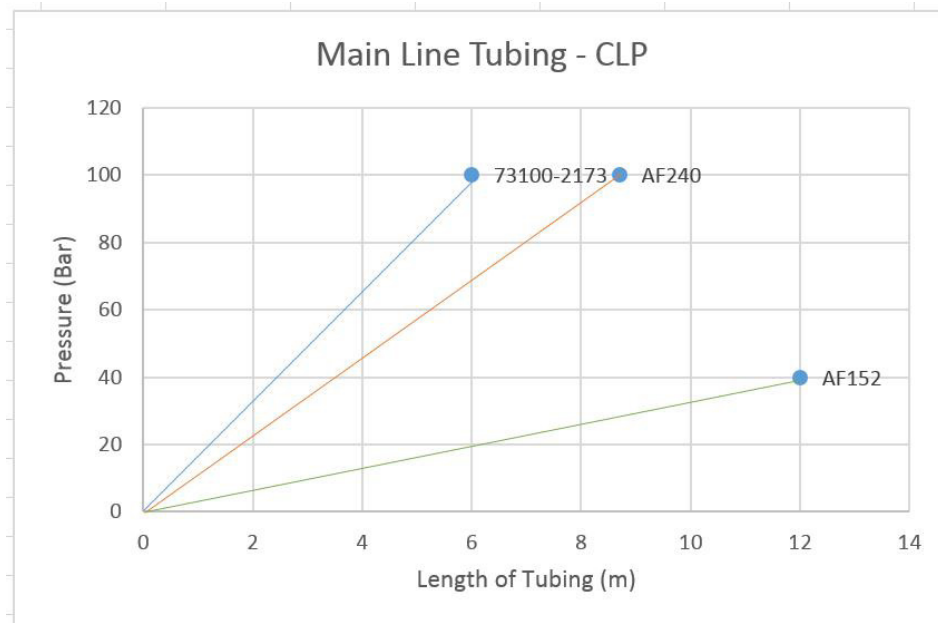
1. Unscrew the cartridge from the CLP.
2. Discard empty cartridge carefully.
3. Carry out the steps outlined in "Loading a Cartridge" for Type C
4. For Controller models, the "R" button must be pressed to resume CLP operation.

Configuring a System

The CLP may be used in conjunction with lubrication divider valves to progressively apply grease to individual lube points. Consideration should be given to the number of lube points, the size and length of the feed tube from the CLP to the divider valve and the size and length of the tubes to the individual lube points. The CLP has a 120bar (1740psi) internal relief valve.

What size tubing to use will be dictated by the overall size of the system, aiming for a maximum 100 bar (1450psi) system operating pressure.

Options for the main line tubing are charted below, along with the pressure drop across them.



For the tail tube (tube from divider valve to the lubrication point), we recommend the p/n 731002173.

As a rule of thumb, you should consider 10 bar (145psi) pressure drop for every meter(3.28'ft) of tail tube. In addition, there will be approx..15bar pressure drop across the progressive divider.

Example:

With a system with 3m (9.84'ft) of main line p/n AF240 (34962), and a 6-outlet divider block where the max tube length is 4m (13.12'ft), you would get :

3m of AF240 : 35bar (507psi)(from chart)

4m of 731002173 : 40bar (580psi)

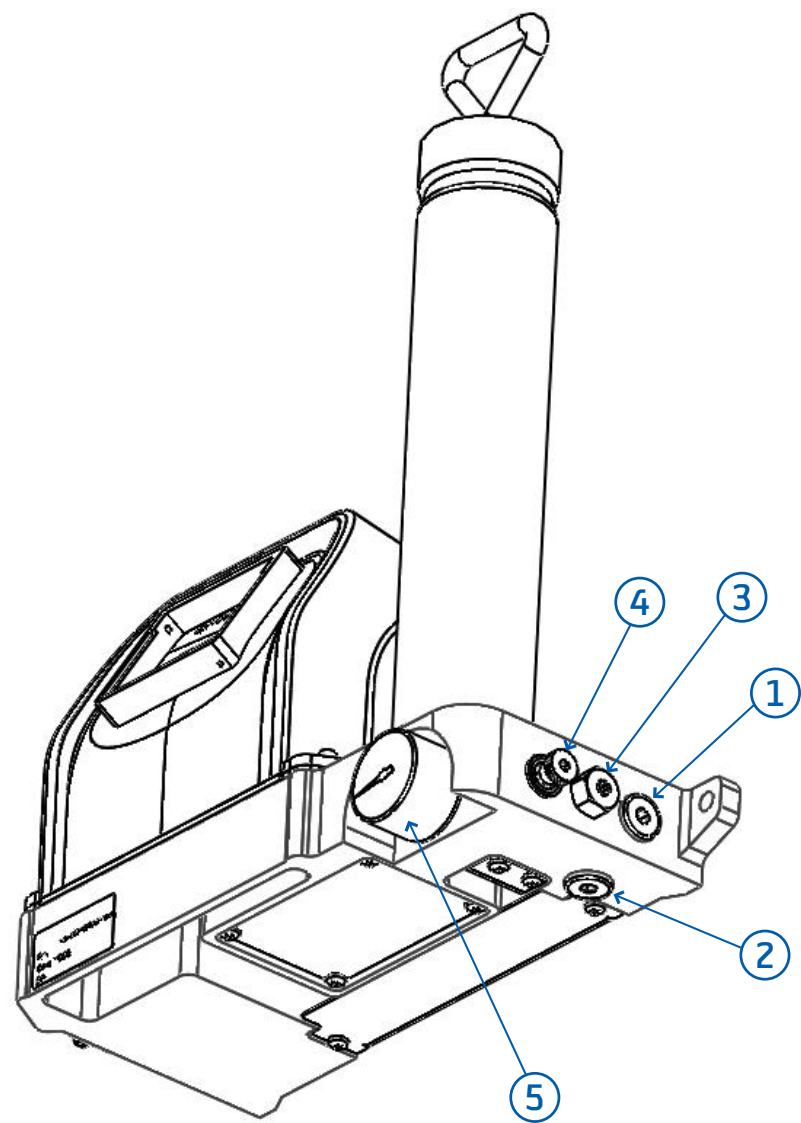
Divider Pressure Drop: 15 bar (217psi)

Total Operating Pressure : 90bar (1305psi)

Using 731002173 as the mainline, the total pressure would increase to 115bar (1667psi) which would still be within the acceptable limits.

Please note this simply a rule of thumb, and these values are subject to deviation, depending on operating temperature and particular grease used.

Pump Connections



Item No.	Description
1	G1/4" Outlet Port (1/4BSPP)
2	G1/4" Outlet Port (1/4BSPP) Alternate location (Only 1 can be used)
3	Relief Valve Assembly (Including Pin)
4	Bleed Valve Assembly
5	Pressure Gauge

Electrical Connections

The electrical connections will be made, based on the configuration of CLP ordered.

Firstly, Options W, X, Y or Z will dictate whether you connect via external connectors or simply run cable through external cable glands and into the pump. The DC supply should be derived from a suitable and safety approved supply.

OPTION	POWER INPUT	CYCLE SWITCH INPUT	FAULT RELAY OUTPUT
W	Use DIN 43650-A Connector for Power	Use M12x1 Connector for Cycle Switch Signal Input (See Accessories, electrical Cords for appropriate connecting cable)	Use M12x1 Connector for Fault Output (See Accessories, electrical Cords for appropriate connecting cable)
X	Wire directly into pump via M18 Cable Glands (Cable used should be of industrial quality of diameter 6...10mm)	Wire directly into pump via M16 Cable Glands (Cable used should be of industrial quality of diameter 4...8mm)	N/A
Y	Use DIN 43650-A Connector for Power + Fault Signal. (See Accessories, electrical Cords for appropriate connecting cable)	Wire directly into pump via M16 Cable Glands (Cable used should be of industrial quality of diameter 4...8mm)	N/A
Z	Use DIN 43650-A Connector for Power + Fault Signal (See Accessories, electrical Cords for appropriate connecting cable)	Use M12x1 Connector for Cycle Switch Signal Input (See Accessories, electrical Cords for appropriate connecting cable)	N/A

Note:

+ Under the **EN60204** standard, an accessible disconnect device must be provided for, when installing this unit. This device should be located between 0.6m and 1.9m above the servicing level of the unit. (The DIN-43650-A connector is not considered such a device) This disconnect device must provide isolation of the live conductor. The off/on positions must be clearly marked on the device. It is further recommended that the device be lockable or rendered safe via a withdrawable fuse or such line to prevent accidental operation during maintenance.

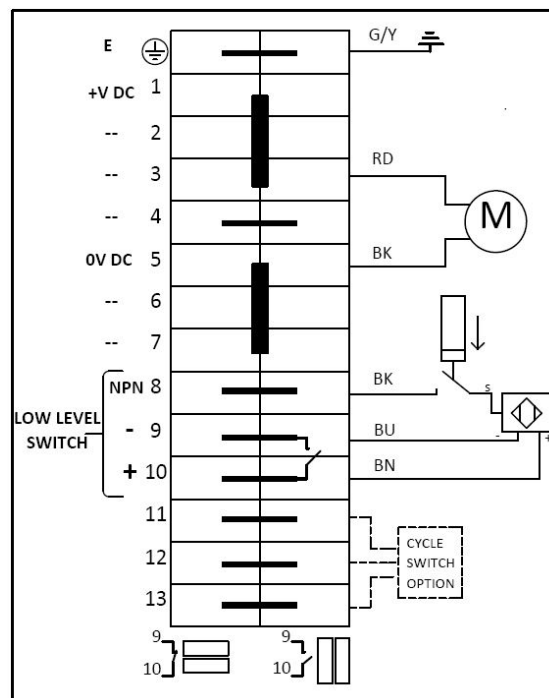
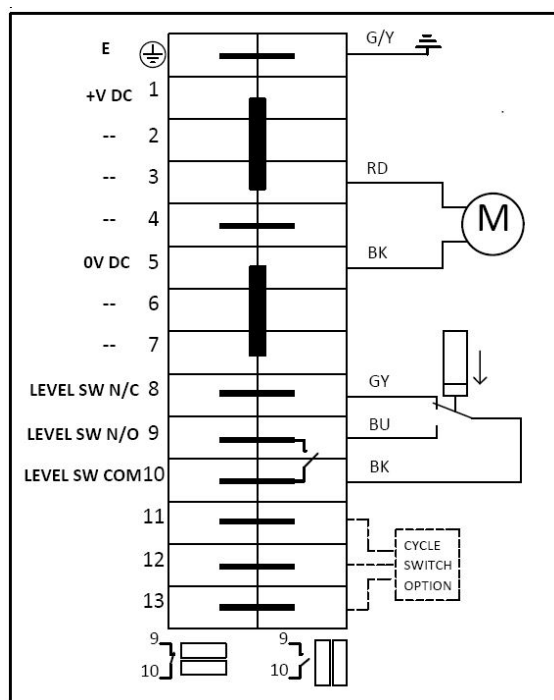
Secondly, Options F and G will dictate whether you are simply connecting to an internal terminal strip or to an integrated controller.

OPTION	DESCRIPTION	DETAILS
F	Internal Terminal Strip	14-way specially designed terminal board. <ol style="list-style-type: none"> 1. Earth + Terminals 1 to 13 clearly marked 2. Terminals 1-3 Connected Internally (+) 3. Terminals 5-7 Connected Internally (-) 4. Terminals 8-13 dedicated to level switch + cycle switch 5. Terminals 9-10 may be connected by re-orientating jumpers on the board (as shown on the board)
G	Integrated Controller	Microprocessor based controller. <ol style="list-style-type: none"> 1. 12-way terminal strip on top, clearly marked 2. Terminals 1-2 for incoming DC power (+ and - respectively) 3. Terminals 3-4 for motor 4. Terminal 5 for Low Level Switch Input 5. Terminal 9 for Cycle Switch Input 6. Terminal 12 for Fault Relay Common 7. Terminal 10 and 11 for N/C and N/O Fault respectively 8. Terminal 7 for +vdc supply to a powered switch 9. Terminal 6,8 for -vdc supply to all switches

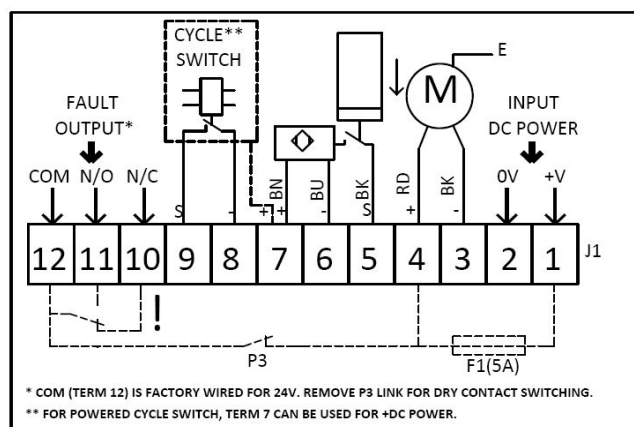
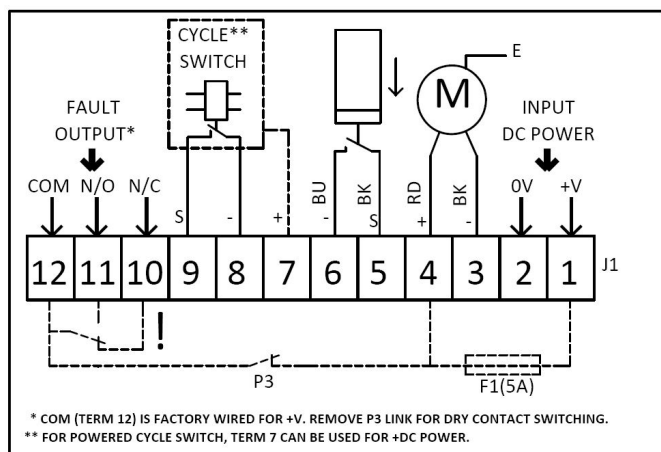
All wiring labels are adhered to the underside of the motor cover of the CLP. For Options W, Y & Z, external labels may be found overhead the connectors. The wiring diagram labels and the external connector labels for all the available options are given in the next section.

Wiring For DC Models

NO CONNECTORS (OPTION X)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A_ F X_ and CLP-B_ F X_	CLP-C_ F X_

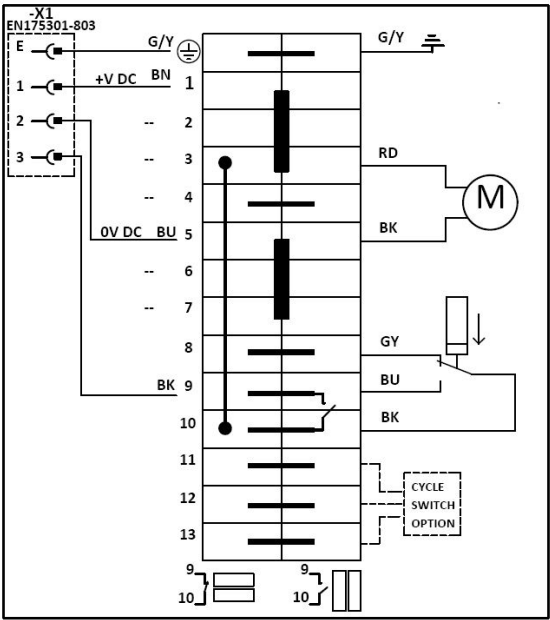


NO CONNECTORS (OPTION X)	
CONTROLLER MODELS (OPTION G)	
CLP-A_GX_ and CLP-B_GX_	CLP-C_GX_

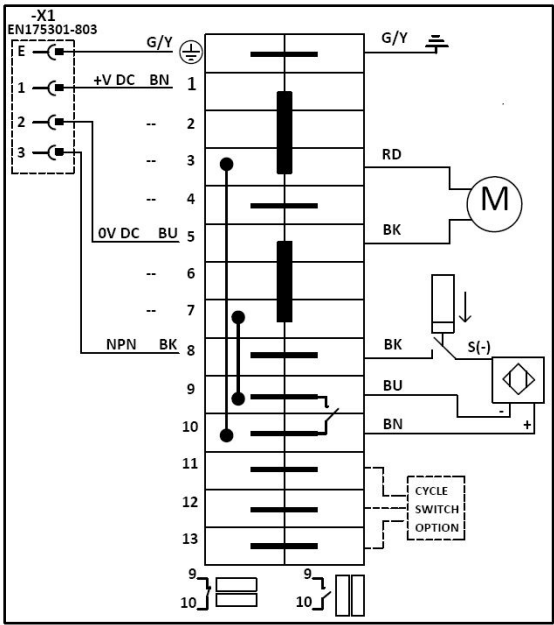


Wiring for DC Models

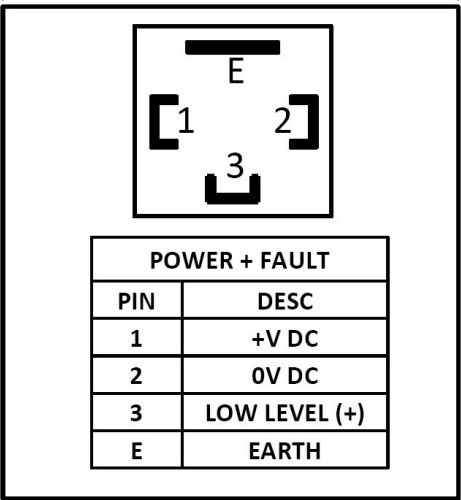
DIN CONNECTOR (OPTION Y)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A_FY_ and CLP-B_FY_	CLP-C_FY_



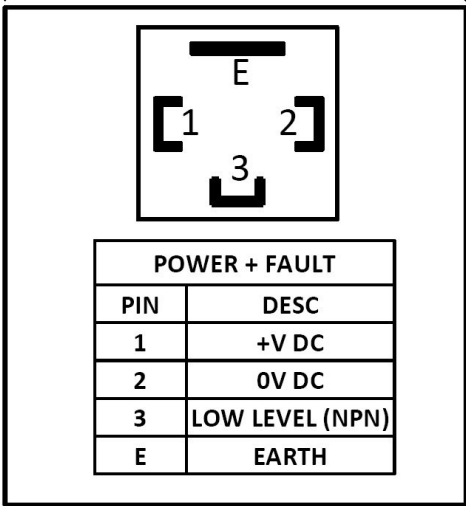
INTERNAL WIRING



INTERNAL WIRING



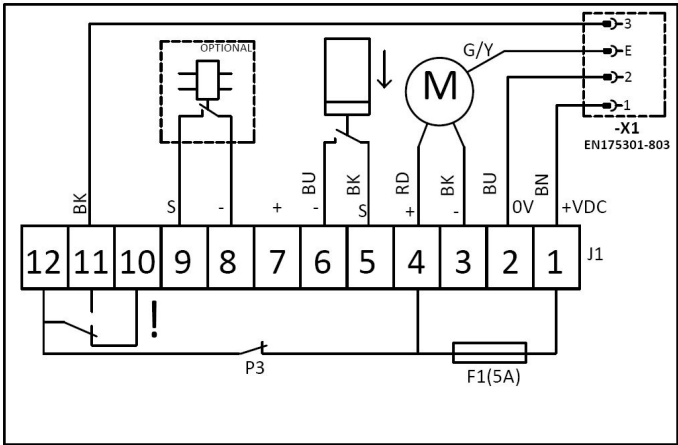
CONNECTOR PIN-OUTS



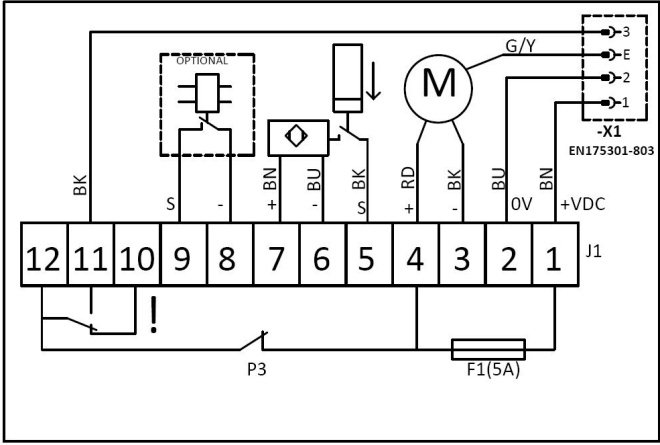
CONNECTOR PIN-OUTS

Wiring for DC Models

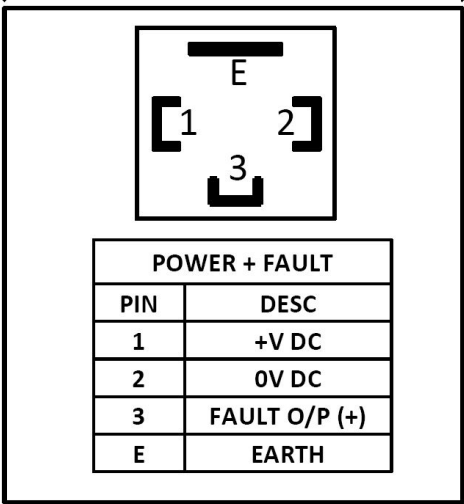
DIN CONNECTOR (OPTION Y)	
CONTROLLER MODELS (OPTION G)	
CLP-A_GY_ and CLP-B_GY_	CLP-C_GY_



INTERNAL WIRING



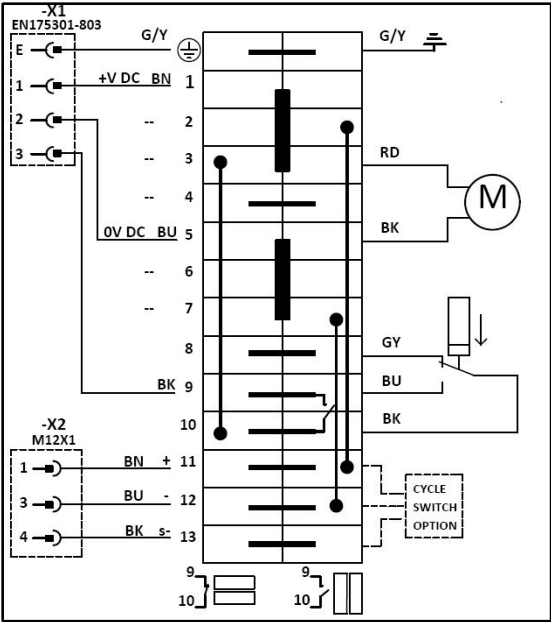
INTERNAL WIRING



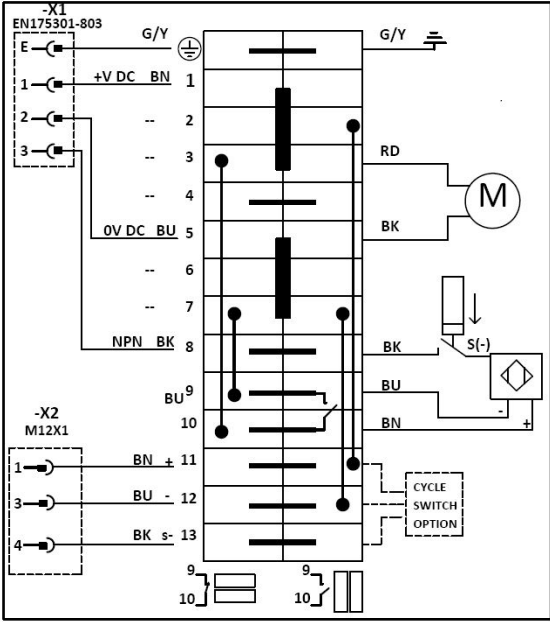
CONNECTOR PIN-OUTS

Wiring for DC Models

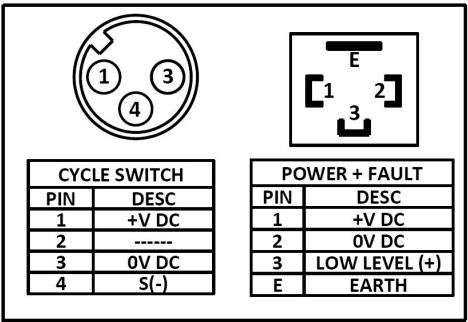
DIN + M12 CONNECTOR (OPTION Z)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A_FZ_ and CLP-B_FZ_	CLP-C_FZ_



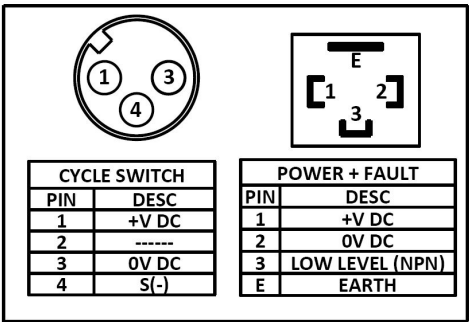
INTERNAL WIRING



INTERNAL WIRING



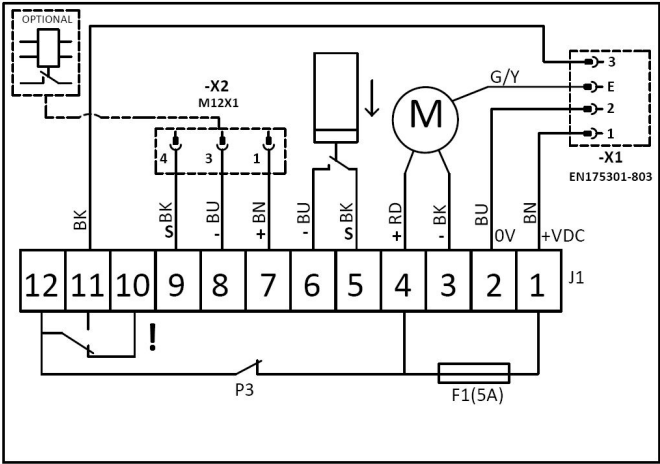
CONNECTOR PIN-OUTS



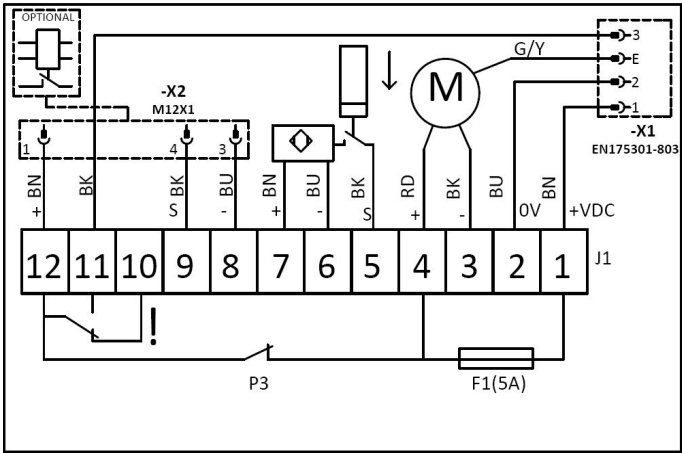
CONNECTOR PIN-OUTS

Wiring for DC Models

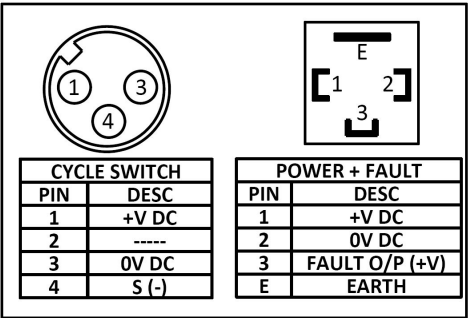
DIN + M12 CONNECTOR (OPTION Z)	
CONTROLLER MODELS (OPTION G)	
CLP-A_GZ_ and CLP-B_GZ_	CLP-C_GZ_



INTERNAL WIRING



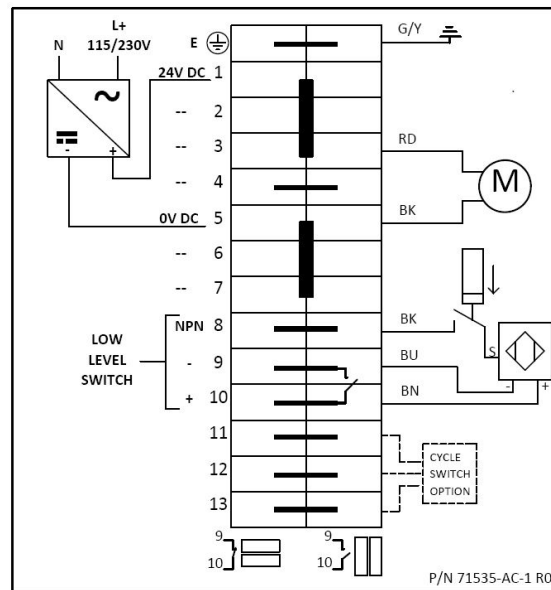
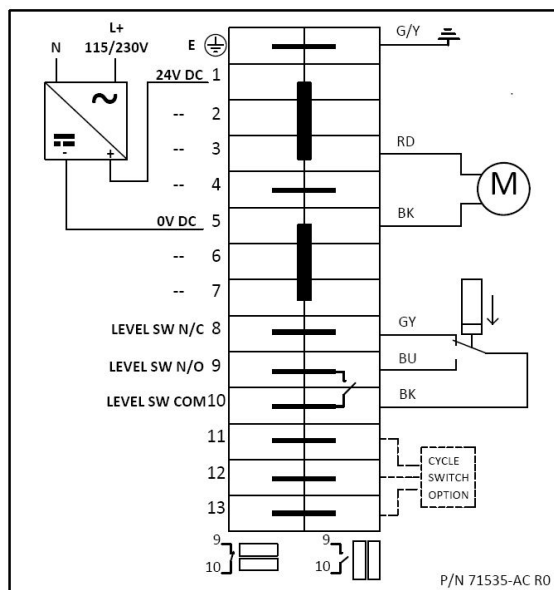
INTERNAL WIRING



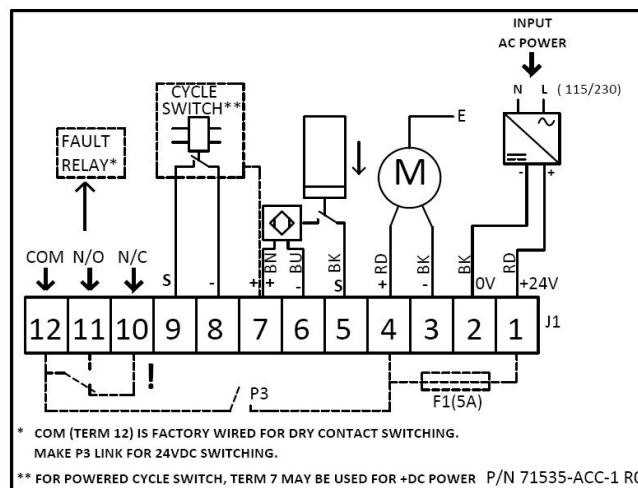
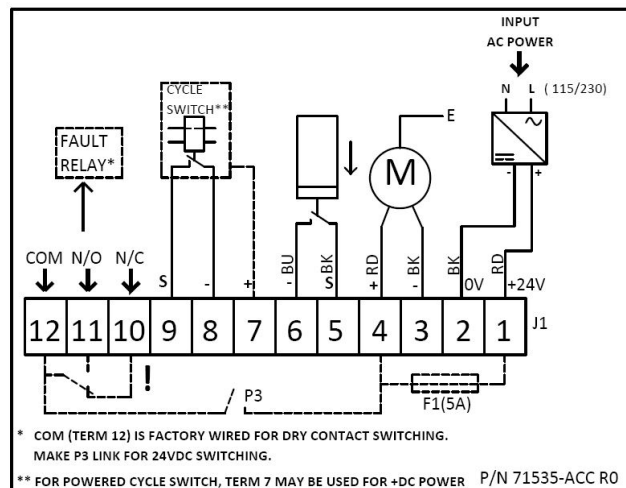
CONNECTOR PIN-OUTS

Wiring For AC Models

NO CONNECTORS (OPTION X)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A3F X _ and CLP-B3F X _	CLP-C3F X _

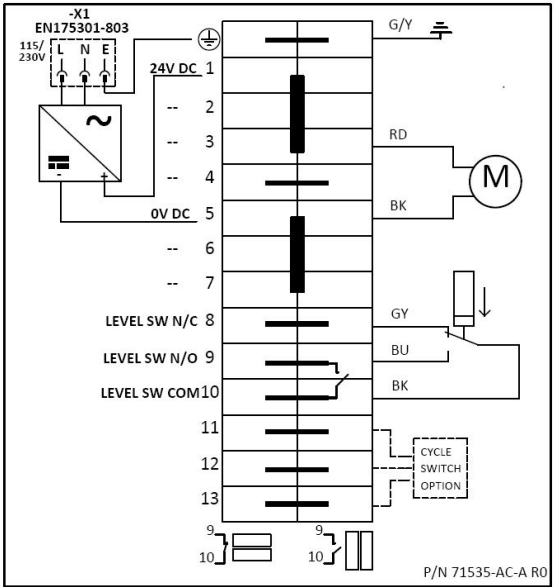


NO CONNECTORS (OPTION X)	
CONTROLLER MODELS (OPTION G)	
CLP-A3GX_ and CLP-B3GX_	CLP-C3GX_

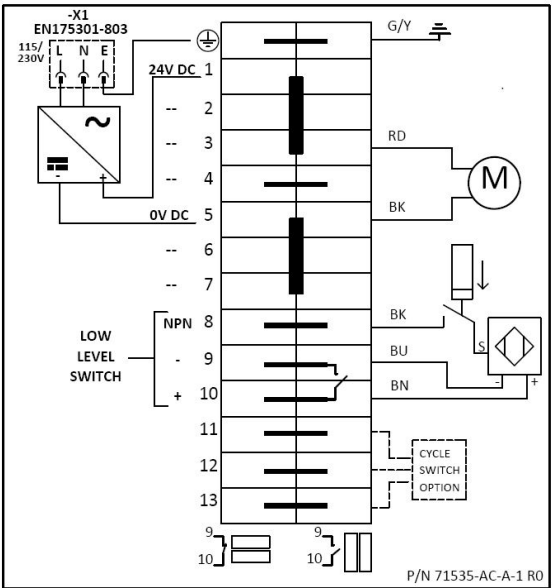


Wiring for AC Models

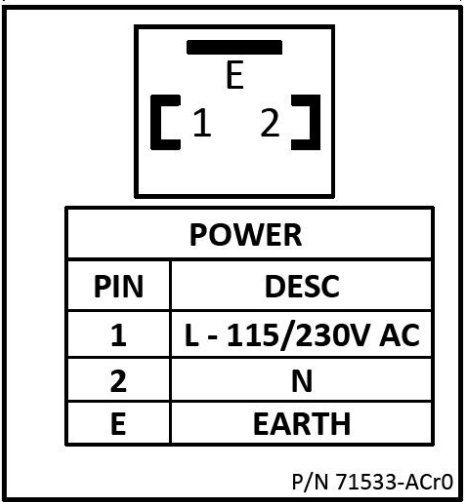
DIN CONNECTOR (OPTION Y)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A3FY_ and CLP-B3FY_	CLP-C3FY_



INTERNAL WIRING



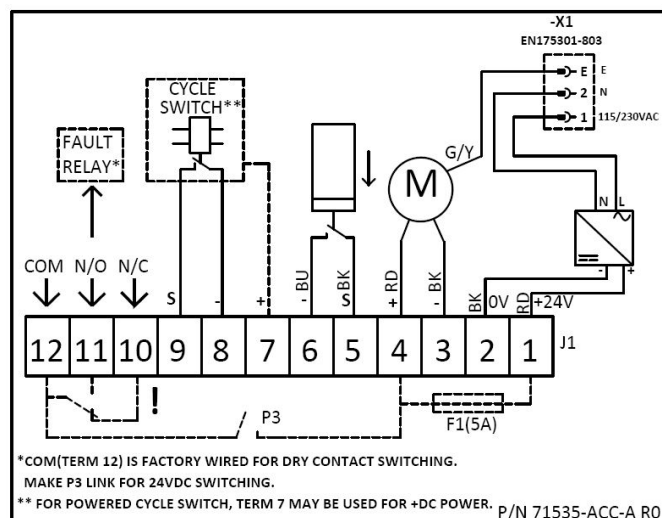
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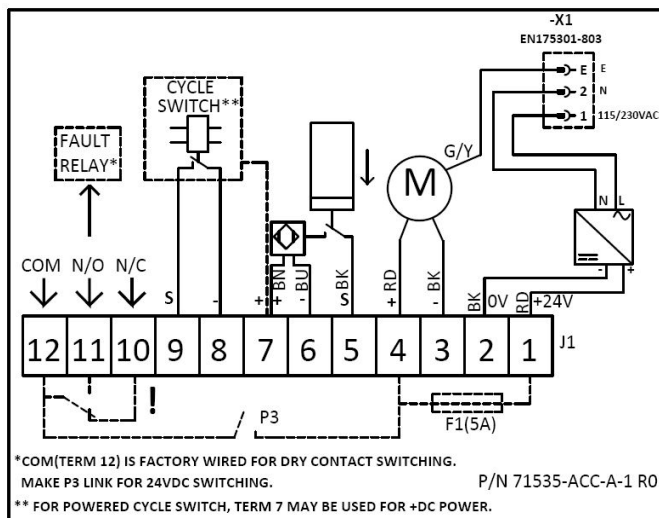
CONNECTOR PIN-OUTS

Wiring for AC Models

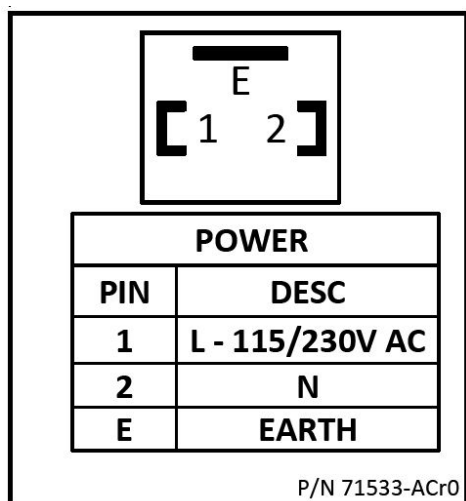
DIN CONNECTOR (OPTION Y)	
CONTROLLER MODELS (OPTION G)	
CLP-A3GY_ and CLP-B3GY_	CLP-C3GY_



INTERNAL WIRING



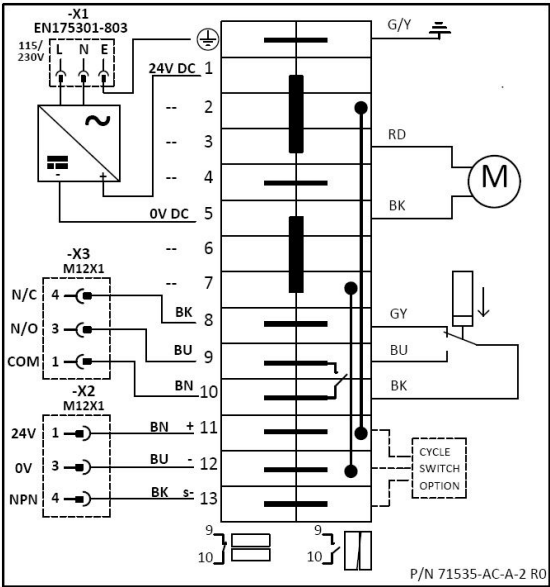
INTERNAL WIRING



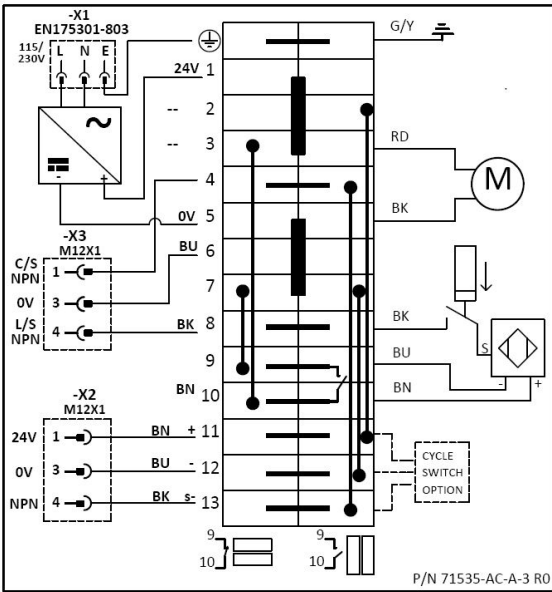
CONNECTOR PIN-OUTS

Wiring for AC Models

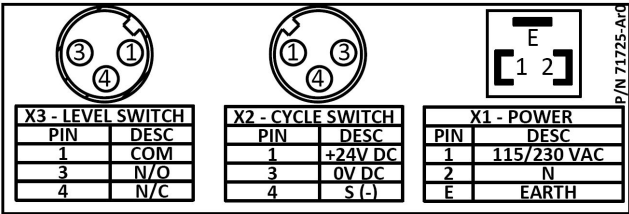
CONNECTORS (OPTION W)	
TERMINAL STRIP MODELS (OPTION F)	
CLP- A3FW_ and CLP-B3FW_	CLP-C3FW_



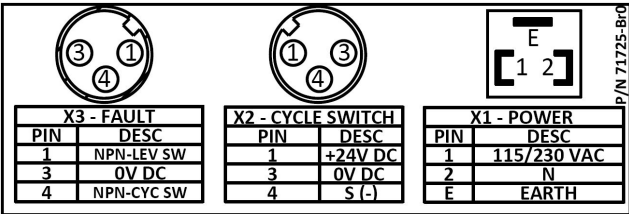
INTERNAL WIRING



INTERNAL WIRING



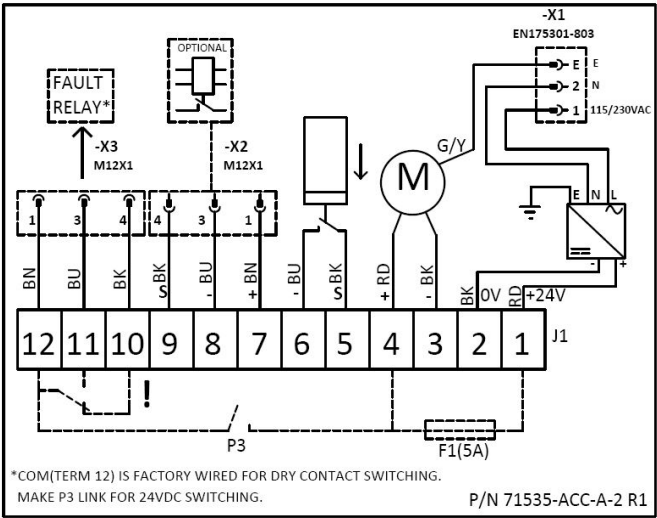
CONNECTOR PIN-OUTS



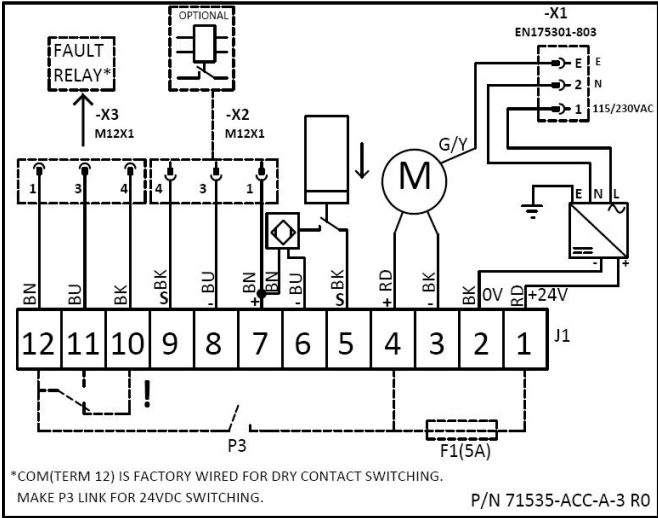
CONNECTOR PIN-OUTS

Wiring for AC Models

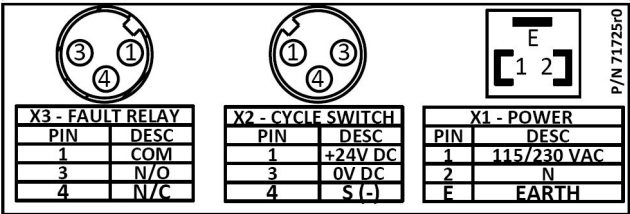
CONNECTORS (OPTION W)	
CONTROLLER MODELS (OPTION G)	
CLP-A3GW_ and CLP-B3GW_	CLP-C3GW_



INTERNAL WIRING

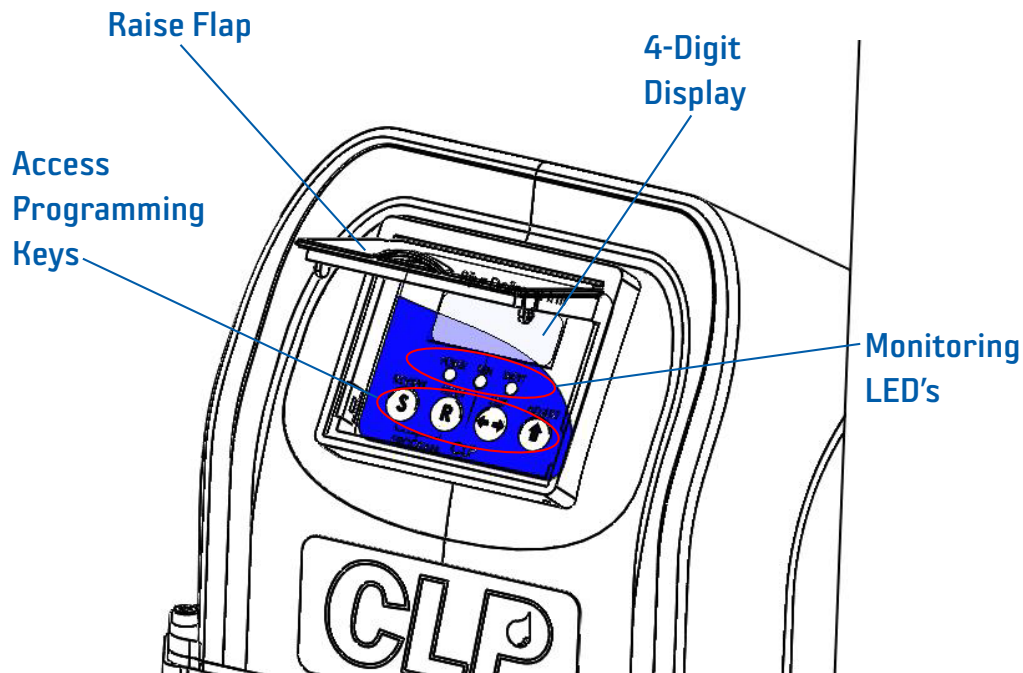


INTERNAL WIRING



CONNECTOR PIN-OUTS

Controller Programming



Flap on motor cover must be raised, in order to access the controller keys.

Keys Description



With the controller energized:

- + Press keys **S** and **R** simultaneously and release to enter control mode.
- + The display panel will now show a fixed letter for the selected mode and a flashing number (1-4).
- + To select the required mode press the **↑** key.
- + Press the **S** key to advance to the next parameter of the selected mode.
- + Repeat steps 3 and 4 above using the **↔** key to move across the digits and the **↑** key to change the value of the selected flashing digit.
- + On completion, press the **R** key to save the data and initiate a lubrication cycle.

Manual Override

- + With the controller energized press the **R** key to initiate a lubrication cycle.

Program Review

- + To review the preset data, press the **S** key repeatedly with the controller energized.
- + To return to operating condition display, press **R** key or release **S** key for 5 seconds.

Fault Alarm

- + In any alarm condition, e.g. low level, low pressure etc., the pump will not be able to operate and the alarm will be displayed. For low level, the level LED will illuminate. The fault condition must be rectified to cancel the alarm and reactivate the system.
- + Furthermore, If a low level fault is signalled, and the cartridge replaced, the "R" button must be depressed, in order to resume operation. (A power reset is not sufficient, as the low level fault is held in memory)

Controller Programming

Operation Mode

Timer Control Mode (d 1)

For Systems without a Cycle Switch

In this mode, the lubricating system runs according to the preset run time and idle time.

Pressure Control Mode (d 2)

CLP is not currently configured for injector systems.
Therefore Mode D2 should not be used.

Cycle Control Mode (d 3)

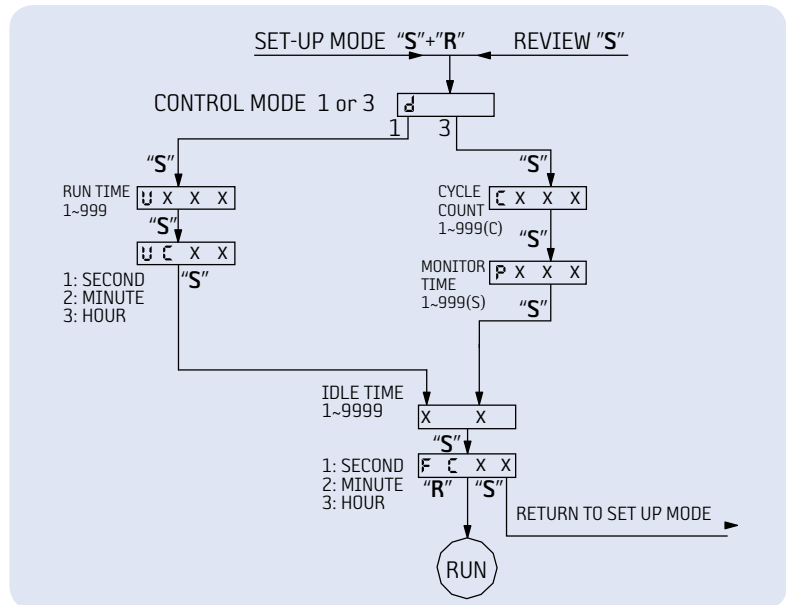
Recommended for Progressive systems

*Cycle switch function enabled/ Low level alarm function enabled**

The cycle switch mounted on a progressive divider valve is the key monitoring device for the entire system. Normally when grease is being discharged from the outlets of the divider valve, a cycle pin engages with the switch, confirming a successful lubrication cycle. The controller can be programmed to allow for a predetermined number of cycle counts (1-999). Once the preset number of counts is obtained the controller will stop the pump and revert back to the idle time setting (1-9999 seconds/minutes/hours). If there is no activity from the cycle switch within a specified period of time (Monitor time: 1-999 seconds), an alarm signal will be displayed (EEcY appears on the digital readout). Possible causes for this type of alarm could be pump malfunction, divider valve malfunction, broken supply line or blocked supply line or feed line.

Example 1 – Configure CLP for Timer Mode 30 seconds on, and 4 hours off

- o Open protective flap on motor cover to access the programming keys.
- o Hold down the S and R keys until the d mode is flashing.
- o Jog the ↑ key until 1 is flashing, and hit the S key to enter U mode.
- o Jog the ↑ key on the flashing digit until 0 is displayed.
- o Hit the ↔ key to move cursor to next digit.
- o Jog the ↑ key on the flashing digit until 3 is displayed.
- o Hit the ↔ key to move cursor to final digit.
- o Jog the ↑ key on the flashing digit until 0 is displayed.
- o Hit the S key (Value of 30 now saved), to enter UC mode.
- o Jog the ↑ key until 1 is flashing, and hit the S key (Units of seconds, now saved)
- o Jog the ↑ key until 4 is flashing, and hit the ↔ key
- o Successively set the next 3 digits to 0.
- o Hit the S key (value of 4 now saved) to enter FC mode
- o Jog the ↑ key until 3 is flashing, and hit the S key (Units of hours, now saved)
- o Finally hit the R key to enter run mode.
- o Close protective flap on motor cover.



Controller Programming

Operation Mode Cont.

Cycle Control Mode (d 3) Continued

Example 2 – Configure CLP for Cycle Switch Mode 5 cycles on, and 60 minutes off (expect cycles to be complete in max. 2 minutes)

- o Open protective flap on motor cover to access the programming keys.
- o Hold down the S and R keys until the d mode is flashing.
- o Jog the ↑ key until 3 is flashing, and hit the S key to enter C mode
- o Jog the ↑ key on the flashing digit until 5 is displayed.
- o Hit the ↔ key to move cursor to next digit.
- o Jog the ↑ key on the flashing digit until 0 is displayed.
- o Hit the ↔ key to move cursor to final digit.
- o Jog the ↑ key on the flashing digit until 0 is displayed.
- o Hit the S key (Value of 5 cycles now saved), to enter P mode.
- o Jog the ↑ key until 0 is flashing, and hit the ↔ key
- o Jog the ↑ key until 2 is flashing, and hit the ↔ key
- o Jog the ↑ key until 1 is flashing, and hit the S key
(Value of “120” seconds now saved for monitor time)
- o Jog the ↑ key until 0 is flashing, and hit the ↔ key
- o Jog the ↑ key until 6 is flashing, and hit the ↔ key
- o Successively set the next 2 digits to 0.
- o Hit the S key (value of 60 now saved) to enter FC mode
- o Jog the ↑ key until 2 is flashing, and hit the S key (Units of minutes, now saved)
- o Finally hit the R key to enter run mode.
- o Close protective flap on motor cover.

ATTENTION:

IF LLPP or HHPP DISPLAYED WHEN REPLACING CONTROLLER:

- + LLPP will be on the display if 12V is applied to a preset 24V controller.
- + HHPP will be on the display if 24V is applied to a preset 12V controller.

To change voltage setting:

Hold the ↔ & ↑ buttons, (and keep holding them), you will see the current voltage setting appear: i.e. L-24.

Then while still holding ↔ & ↑ buttons, hit the **S button** to toggle to the other voltage value i.e. L-12, and then release the ↔ & ↑ .

The new setting is now saved.

Controller Programming

Operation Mode Cont.

Advanced Setup Mode

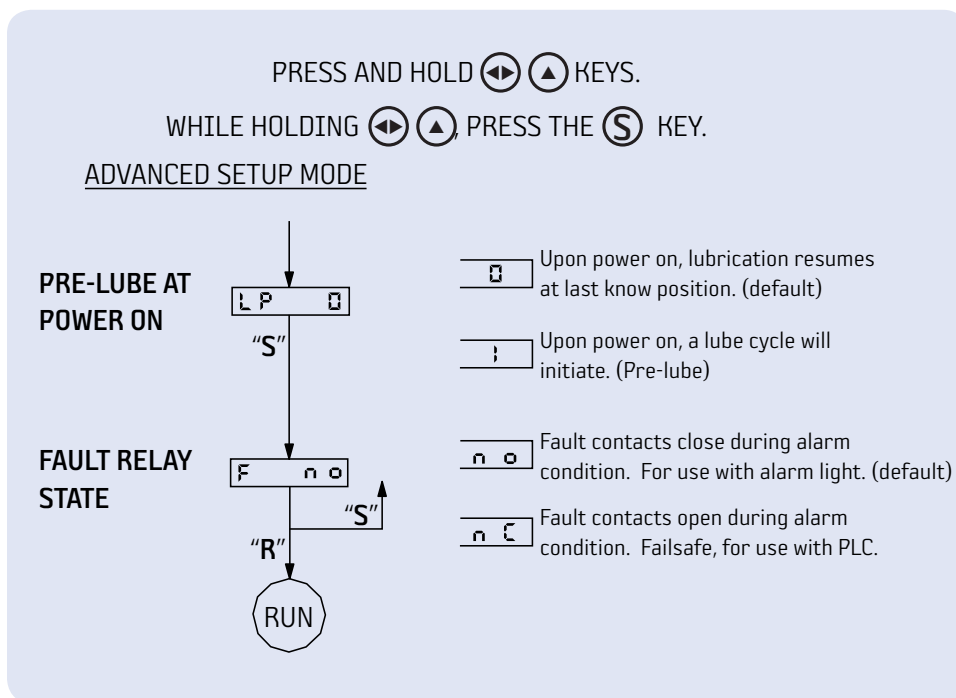
There are 2 additional features which may be accessed through the controller.

1. Memory
2. Fault Contact Configuration

The memory feature allows the user to decide if the controller resumes at the point where it left off (LP 0), after a power reset.

The fault contact feature allows the user to decide if the fault contact signal (Pin 3 on the DIN connector for options Y and Z) normally sits at +vdc, and opens in the event of a fault (F nC) or is normally open and switches to +VDC in the event of a fault (Fn0).

To enter Advance Setup Mode:



Fault Conditions:

- **"EELL"-Low Level Switch activated**

(All Modes) Check and replace cartridge. Hit "R" to resume lubrication once more (see page 8).

- **"EEcY"-Monitor time-out**

(Mode d3 - Progressive) Cycle switch did not activate within monitor time.

- **"EE"-Internal memory failure**

(Checked at power up) No recovery. Turn off power and try again. If problem persists, replace control.

- **"LLPP"-Green LED" -Low Voltage**

Check and apply correct voltage

Accessories

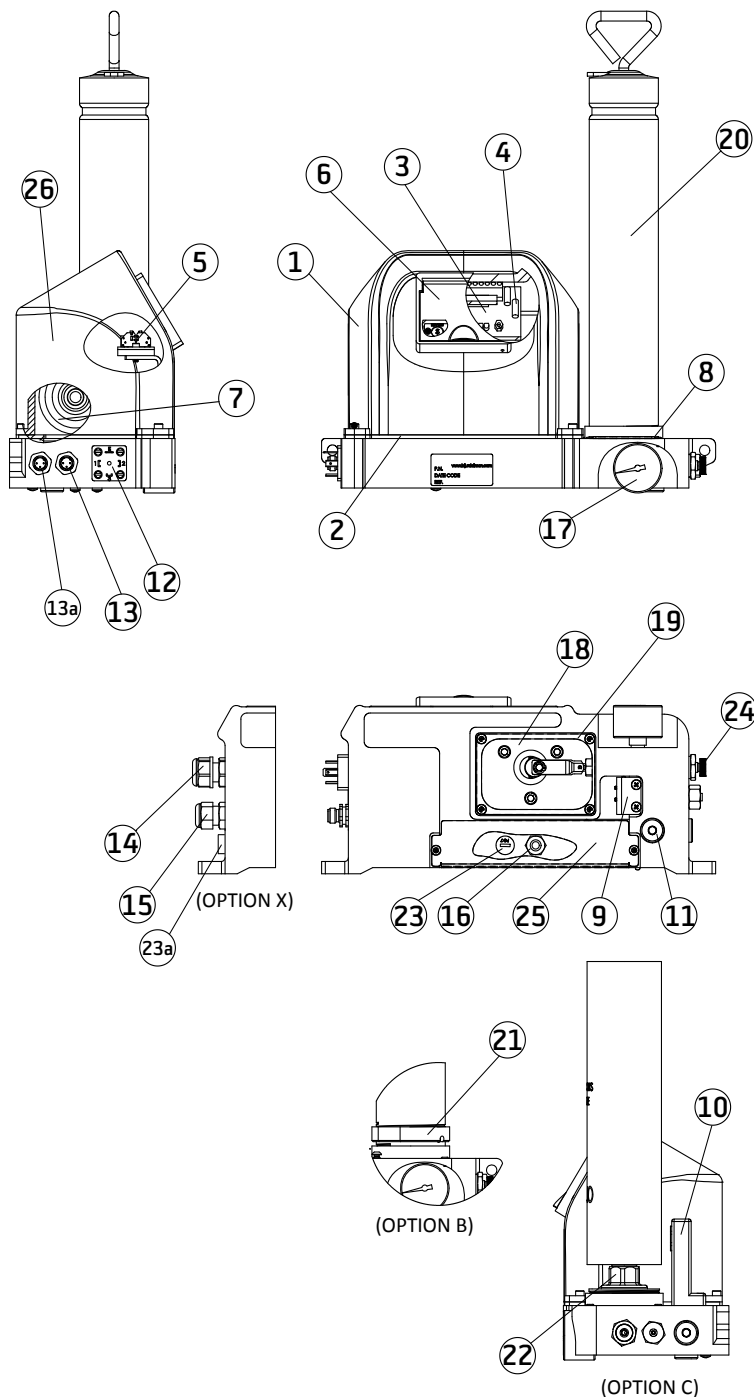
ELECTRIC CORDS			
POWER/SIGNAL (Voltages 1 & 2, Options Y & Z)			
BDI P.N.	DESCRIPTION	LENGTH	
DIN402U75	Cord, Pre-Moulded 4-pin Connector to DIN EN 175301-803	2m	
DIN405U75	Cord, Pre-Moulded 4-pin Connector to DIN EN 175301-803	5m	
DIN410U75	Cord, Pre-Moulded 4-pin Connector to DIN EN 175301-803	10m	
POWER (Voltages 3, Options W & Y)			
BDI P.N.	DESCRIPTION	LENGTH	
DIN302U75	Cord, Pre-Moulded 3-pin Connector to DIN EN 175301-803	2m	
DIN305U75	Cord, Pre-Moulded 3-pin Connector to DIN EN 175301-803	5m	
DIN310U75	Cord, Pre-Moulded 3-pin Connector to DIN EN 175301-803	10m	
CYCLE SWITCH (Options W & Z)			
M123S05U34EXT	M12 Extension Cord, Pre-moulded 3-pin Straight Connector to IEC 61076-2-101 (Connects directly from M12 Conn on Cycle switch 66925-S003 to M12 Conn on Pump)	5m	
M123S003U34EXT	M12 Extension Cord, Pre-moulded 3-pin Straight Connector to IEC 61076-2-101 (Connects directly from Cycle switch 66925-S003 to Pump on PVB Intergrated versions)	30cm	
FAULT (Voltage 3, Option W)			
M123S05U34	M12 Cord, Pre-moulded 3-pin Straight Connector to IEC 61076-2-101	5m	
PUMP OUTLET FITTINGS			
COMPRESSION STYLE			
BDI P.N.	DESCRIPTION	PIPE DIA.	
AR397*	Straight, G1/4, Series L DIN	6mm	
AR493	Straight, R1/4, 6mm, Series L DIN	6mm	
AR916	Straight, R1/4, Series L DIN	8mm	
AR384*	Straight G1/4, Series L	8mm	
AR385*	Straight G1/4, Series L DIN 24deg	10mm	
AR794	Elbow, R1/4, Series L DIN	8mm	
AR5232	Elbow, R1/4, Series L DIN	6mm	
AR5231+	Banjo, G1/8, Series L DIN 24deg	6mm	
AR5233	Banjo, G1/4, Series L DIN 24deg	8mm	
PUSH TO CONNECT STYLE			
AR5066+	Straight, R1/8, PTC, 150 bar	6mm	
AR5074+	Elbow, R1/8, PTC, 150 bar	6mm	
AR5230+	Orientable Elbow, R1/8, PTC, 150 bar	6mm	
*Needs Seal AR5045			
+ Needs Adapter AR351 & Seal AR5045			

Accessories

LUBE POINT FITTINGS			
PUSH TO CONNECT STYLE			
BDI P.N.	DESCRIPTION	PIPE DIA.	
AR5202	Straight 1/8NPT PTC 80 bar	6mm	
AR5114	Straight R1/8 PTC 80 bar	6mm	
AR5203	Straight M10X1T PTC 80 bar	6mm	
AR5194	Elbow Swivel 1/8NPT PTC 80 bar	6mm	
AR5130	Elbow Swivel R1/8 PTC 80 bar	6mm	
AR5222	Elbow Swivel M10X1T PTC 80 bar	6mm	
SUPPLY LINE			
TUBING-HOSE			
BDI P.N.	DESCRIPTION	SIZE	
731002173	Tubing Polyamide, Black, 120 bar	6mm x 3mm	
AF240 (34962)	Hose Thermoplastic, 240 bar	8.4mm x 4mm	
AF152 (34964)	Hose Rubber, Reinforced, 140 bar	14.4mm x 6.2mm	
AF333	Hose Rubber, Reinforced, 200 bar	16mm x 8mm	
HOSE ENDS			
AR1532	Straight (Used with AF240/34962)	6mm	
AR510	Straight (Used with AF152/34964)	8mm	
AR1969	Straight (Used with AF333)	10mm	
AR1532C	Straight (for PTC fitting) (Used with AF240/34962)	6mm	
AR1736	Elbow (Used with AF240/34962)	6mm	
AR1736C	Elbow (for PTC fitting) (Used with AF240/34962)	6mm	
MISCELLANEOUS			
ADAPTERS & WASHERS			
BDI P.N.	DESCRIPTION		
AR351	Thread reducer G1/4-G1/8		
AR5045	Composite Seal G1/4		
AR5195	PVB / PVBM Divider Outlet Fitting PTC X 6mm		

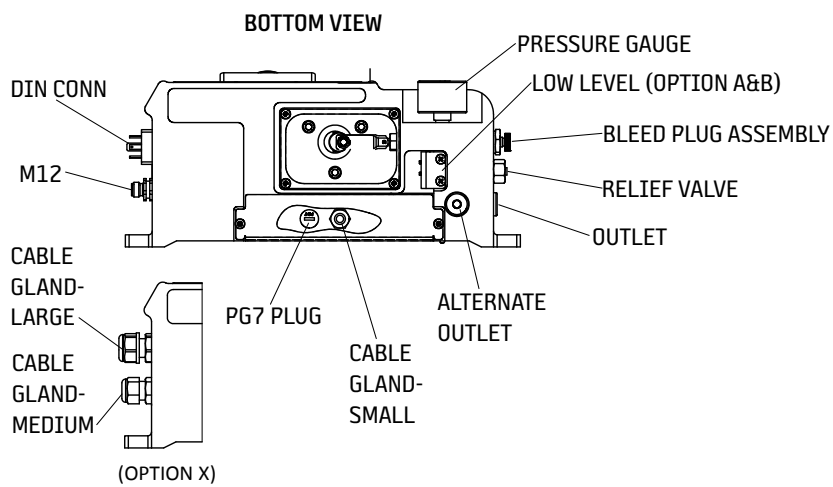
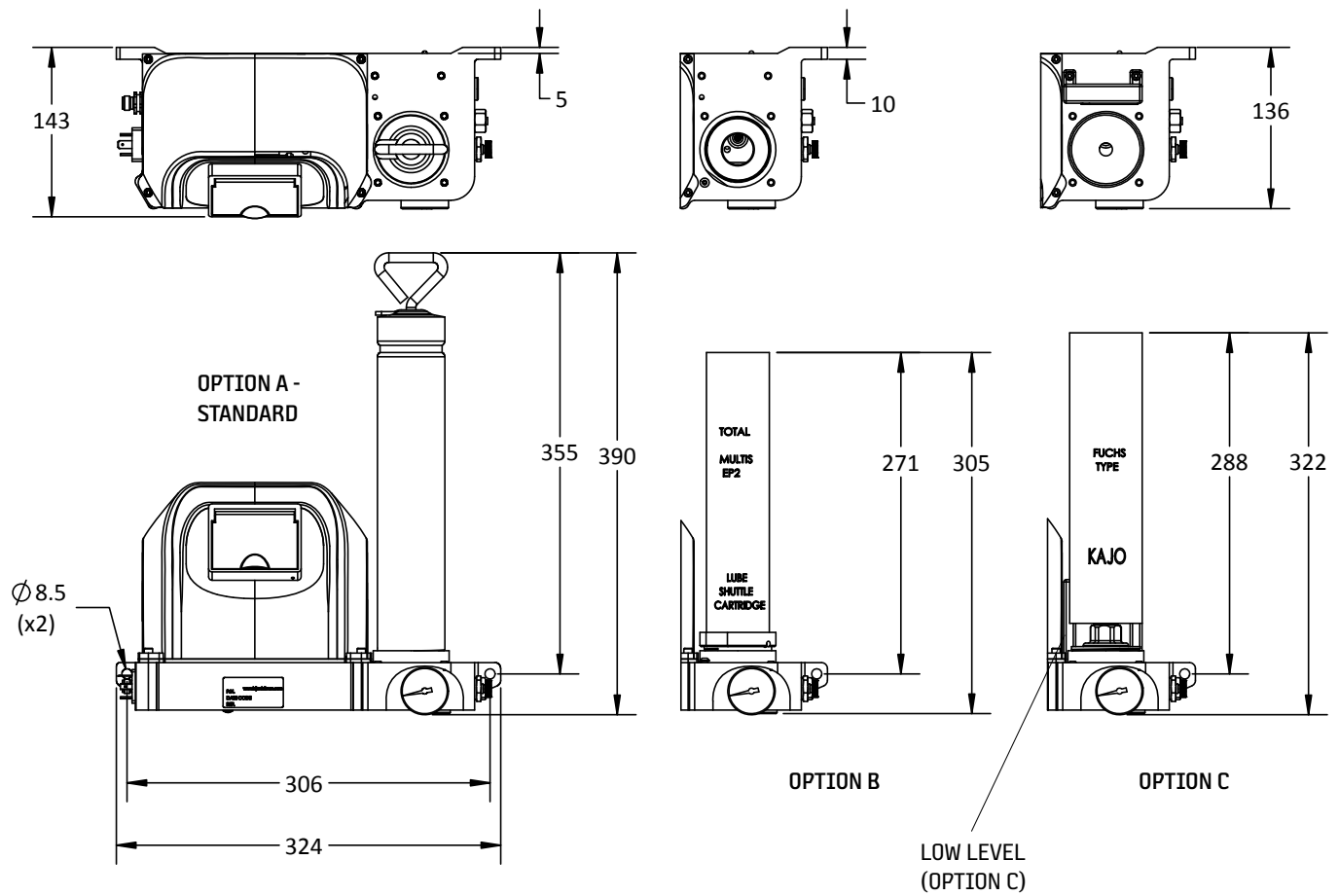
Service Parts

Item	Description	Part #
1	Motor Cover Assembly	Option G 71684
		Option F 71684-1
2	Motor Cover Gasket	70972
3	Controller Assembly (Option G)	70952
4	Controller Fuse 5A	27993
5	Terminal Strip Assembly (Option F)	71122
6	Controller Flip-Cover (Option G only)	75241-0316
7	Motor/Gearbox Assembly	12 VDC (Voltage option #1) 70949-12
		24 VDC (Voltage option #2&3) 70949-24
8	Ring Gasket	70984
9	Level Switch Assembly (Option A&B)	70970
10	Level Switch Assembly (Option C)	71520
11	Outlet Plug (Alternate Outlet)	AR1255
12	Elec Conn DIN DC (Options Y&Z)	70964
12a	Elec Conn DIN AC (Options W & Y)	71726
13	Elec Conn M12 (Options W & Z)	71712
13a	Elec Conn M12 (Option W)	70926
14	Cable Gland Assembly Large	71659
15	Cable Gland Assembly Medium	71519
16	Cable Gland Assembly Small	71683
17	Pressure Gauge	71524
18	Sump Cover	70639
19	Sump Gasket	70641
20	Grease Gun Assembly (Option A)	71661
21	Cartridge Adaptor (Option B)	70983
22	Cartridge Adapter (Option C)	71526
23	Plastic PG7 Plug	70992
23a	Plastic M16 Plug	71727
24	Bleed Plug Assembly	70974
25	Protection Plate	71613
26	Power Supply Unit (Option 3)	76916E022



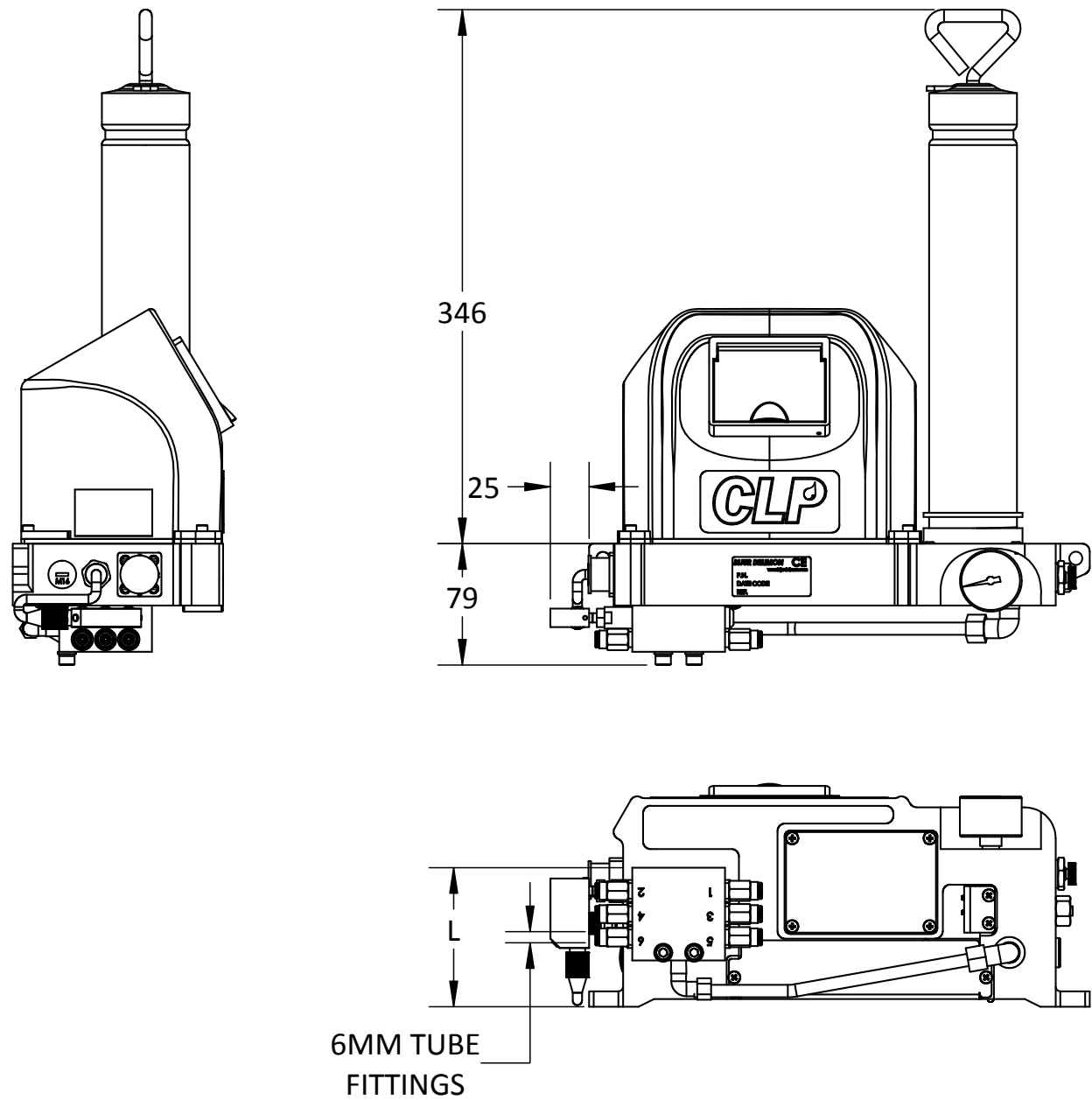
Dimensions

Measurements shown in millimeters.



Dimensions with PVB Kits

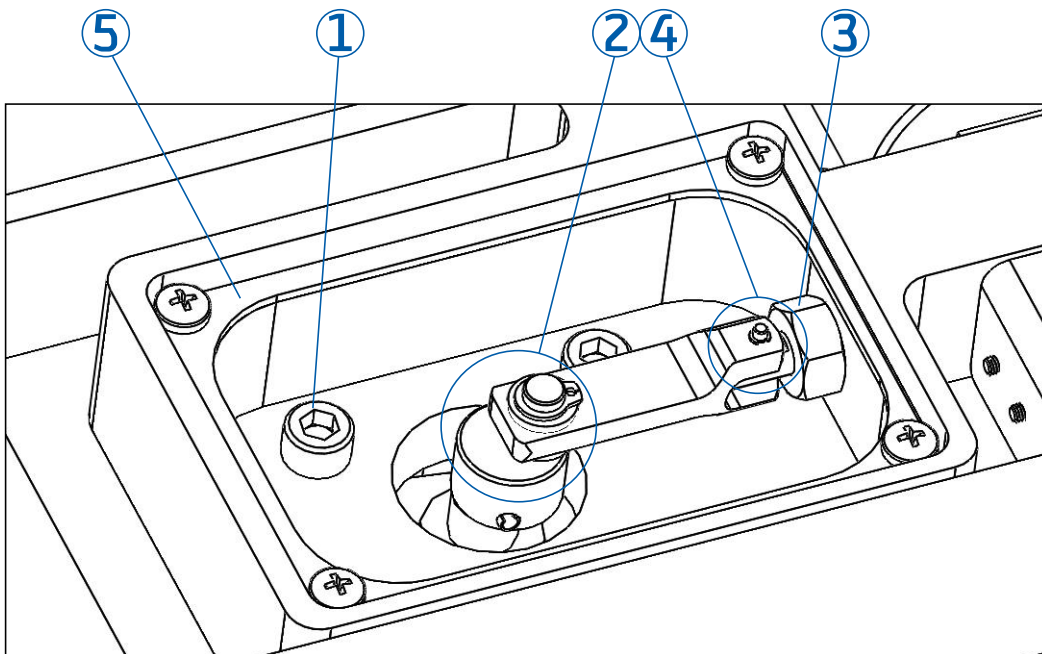
Measurements shown in millimeters.



Dimension "L"	CLP Part Number Reference
90mm	CLP-***Z*-06*
105mm	CLP-***Z*-08*
120mm	CLP-***Z*-10*
135mm	CLP-***Z*-12*

Maintenance

- Regularly check that all external fasteners are tight and secure. Retighten as necessary
- Inspect for any grease leaks on the pump
- Every 2 years, remove the sump cover underneath the pump:
 1. Check security of motor/gearbox screws and retighten as necessary.
 2. Check for wear of the connecting rod mechanism and that pins/clips are present.
 3. Check security of lock nut and retighten as necessary.
 4. Re-apply grease on both pivot points once more of the connecting rod
 5. Check sump gasket still intact, replace as necessary.



Troubleshooting

Fault	Possible Cause	Potential Solution
CLP not switching on	Incorrect voltage applied to controller	Check & Apply correct DC voltage
	Fuse Blown	Check & replace as necessary. Fuse located adjacent to terminal 1 on the controller.
LLPP or HHPP displayed on controller	Incorrect Voltage Sensed by Controller	Refer to Page 18 to change voltage setting on controller
	Incorrect voltage applied to controller	Check & Re-apply correct voltage
EEcY displayed on controller	No switch signal received by controller within preset time	No switch in system? Then switch to D1 operating mode instead.
		Check switch is functioning ok
		Check wiring from switch to CLP is correct
		Check that system is operating switch.
EEPP displayed on controller	No pressure switch signal received by controller	Check that controller monitor time PXXX (in seconds) appropriate for system
		D2 mode has inadvertently been set. Check and change to either D1 (timer) or D3(cycle switch) mode.
Motor On but Not Pumping	Air in system	Open bleed screw with 3mm hex key and bleed until a clear line of grease appears once more. Close bleed screw once more
	Air Pocket in Cartridge	On a rare occasion, a cartridge may have an air pocket from the filling process. Check and replace cartridge.
	Follower not coming down	Rod of grease gun barrel has latched out of home position. Check, unlatch and push rod fully home.
	Cartridge Empty	Check for correct operation of low level switch
Motor not turning on	Motor not receiving power	Check motor connections at controller (terminals 3&4)
Relief Valve Pin Visible	Excessive System Pressure	If new installation, then system is not configured correctly to keep operating pressure less than 120 bar. Refer to “configuring the system” section of the manual
		Check for blockage somewhere in the system, which is causing the system pressure to reach 120bar.

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