

A large, light grey gear graphic is positioned on the left side of the page, partially cut off by the edge. It has a thick outline and is the central visual element of the background.

Operation and user manual

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Safety instructions

Appropriate Use

Use the RSL Lubrication system only for dispensing lubricants. The System is designed for intermittent use only.

Misuse

Any use of the Lubrication system that is not expressly mentioned in the Operating Instructions, for the RSL system, will be regarded as misuse. NOTE: If personal injury or material damage occurs as a result of inappropriate operation e.g. if the safety instructions are ignored or resulting in incorrect installation of the system and applicators, no claims or legal actions can be taken against Rotalube Systems Limited.

Exclusions of Liability

The manufacturer of the System will not accept any liability for damages:

- Caused by lack of lubricant
- Caused by contaminated lubricant
- Caused by lubricants not recemented or tested by Rotalube
- Caused by unauthorised modifications to the system
- Caused by incorrect Installation, electrical connection & programming
- Caused by unapproved parts
- Caused by inappropriate reaction (e.g. also ignoring) malfunction signs

Regulations for Prevention of Accidents

To prevent accidents, observe all country safety regulations, where the product is to be used. Avoid operation with:

- Unapproved parts
- Insufficient lubricants, contaminated lubricant and unapproved lubricant

Rotalube Lubrication Systems:

- Are designed specifically for each application
- Are assembled for safe operation
- Incorrect use may result in chain failure caused by lack of lubrication
- Unauthorised modifications or changes to the system are not admissible. Any modifications must be approved by Rotalube Systems limited.

Safety instructions



Operation & Repair

Risk of bursting reservoir if the reservoir is overfilled by auto fill system, do not over fill over the marked maximum level



Warning!

Before any maintenance or repair of the system switch off the power supply.
Do not work on the Rotalube applicators when the conveyor is working, isolate the conveyor as instructed by the industry site safety Instructions (usually in accordance to the RISK basement and method statement).



Caution!

Do not use the pump in explosive areas



Caution!

Never put your hand inside the reservoir and wear safety glasses when operating the pump to protect from burst pipes.

Must

be re filled on a regular basis. Operates automatically, however regular checks of the systems are require say every 3 to 4 days to ensure oil levels are changing and lubricant is being correctly delivered.

Repair

Repairs should be performed by authorised personnel who are familiar with the repair instructions.

Disposal

Dispose of all used and contaminated lubricants as well as the parts that were in contact with the oil; according to legal regulations pertaining to the environmental protection.
Make sure you observe the safety and data sheets of the lubricants used.

Safety instructions

Dangers due to Direct current VDC



Caution!

The Lubrication system may be installed and started by an authorised personnel only. Non- observance of the safety instructions may result in injuries and destroy connected electrical components.

Installation

Any safety equipment fitted to the machine should not be modified or made ineffective
Keep the components of the system away from sources of heat, adhere to the operating temperatures

Use only Rotalube approved parts

Adhere to the Installation instructions as regards to drilling or welding procedures.



Important

Route the pipes professionally. Firmly bolt together pressurized components.

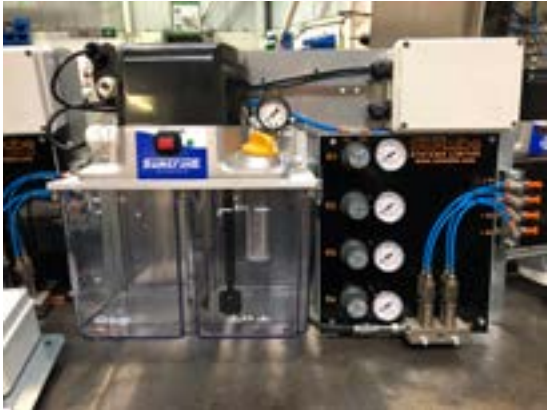


Attention!

Connect the pump and Solenoid to direct current version in relation to the operating voltage to DIN 41755.

System controls layout

The lubrication systems can be supplied with three options



1. No control

No control means the pump is controlled by the machine's PLC or the customer's own controller supplied by others.

Main components: page 13

System operation: page 8

Wiring: page 19



2. Cycle control

Cycle control means the pump will have an adjustable cycle control fitted to the pump. This will cycle the pump ON and OFF during a system operation. The system operation will be controlled by the machine's PLC.

Main components: page 13

Cycle control instructions: page 8

System operation: page 9

Wiring: page 19



3. Full control

Cycle control means the pump will have an adjustable cycle control fitted to the pump. This will cycle the pump ON and OFF during a system operation. The system operation will be controlled by a 24v DC adjustable control unit fitted to the backplate.

Main components: page 15

Cycle control: page 16

System control: page 18

System operation: page 10

Wiring: page 20

System design

Standard lubrication systems are supplied with 6 litre Perspex reservoirs mounted on backplates. Other options are available such as larger reservoirs and enclosures.



Systems with 12 litre reservoirs



Systems mounted in steel epoxy coated enclosures

or

Systems mounted in stainless steel enclosures



Stainless steel enclosures with built-in 30 litre reservoirs

System operation - no control

1. No Control

The lubrication system is controlled by the customer's own PLC or controller, the 24V DC power to the system can be seen on page 19.

No controllers are supplied with this system.

The PLC/controller would operate the pump and air solenoid valve at pre determined intervals which should be fully adjustable, so that the lubricant output can be increased or decreased to achieve optimum lubrication without under or over lubricating. On operation of the conveyor, the PLC/Controller should accumulate the operation time and operate the lubrication system at pre-set times for example one complete cycle of the conveyor chain +5% to ensure the whole chain is lubricated correctly. To operate the system the PLC / Controller should power the the pump and air solenoid valve at the same time.

During the system Run time the PLC/controller should cycle the pump on and off, this is normally recommended to be 5 seconds On and 5 seconds Off.
Example: If the system is set to dwell for 2 Hours and Run for 2 minutes ,during the 2 minute run time the pump would pressurize and de-pressurize every 10 seconds (this is called a cycle). For every cycle of the pump the Injectors will dispense one shot of lubricant. Therefore if the pump runs for 2 mins and is set to 5 on and 5 off , then the pump will do 12 cycles every 2 minutes.

After the operation time has been completed the power to the pump and air solenoid would be switched off for a pre set time by the PLC / Controller. This time will be called the dwell time. In PLC/ controller there should be a memory backup that would accumulate the conveyor operation time. For example if the chain operates for one hour and then stops, the controller will carry on counting from the one hour when the chain restarts.

The system is to be set to only operate if the chains are operating, this is to avoid oil lubricating the same part of the chain as the chain is not moving.
For operation times, these times will all be individually set as each chain requirements are different. Consult the lubricant manufacturer for recommendation of oil dosage rate.

PDI`s can be seen on page 23 and on the main system item 7 on pages 13,14 & 15.

Pneumatics (Air)

The oil dispensed by the PDI`s are delivered into a manifold, the manifold is connected to a regulated air supply (item 3 on pages 13, 14 & 15). The air pressure can be regulated manually so that the oil delivered to the Rotalube is not over pressurised. Most applications run at 10 to 30 PSI only, this depends on the oil viscosity and the distance of the Rotalube from the pump.

Caution:

To over pressurise will mean the lubricant may overspray and contaminate.
Underpressurising will mean that the lubricant may not spit correctly onto the chain link.

Pump cycle - control only

2. Pump Cycle Control Only

The lubrication system is controlled by the customer's own PLC/Controller, the 24V DC power to the system can be seen on page 19.
The PLC/ controller would operate the pump and air solenoid valve at pre-determined intervals which should be fully adjustable, so that the lubricant output can be increased or decreased to achieve optimum lubrication without under or over lubricating. On operation of the conveyor, the PLC/Controller should accumulate the operation time and operate the lubrication system at pre-set times for example one complete cycle of the conveyor chain +5% to ensure the whole chain is lubricated correctly. To operate the system the PLC / Controller should power the pump and air solenoid valve at the same time.

During the system Run time the pump cycle controller should cycle the pump on and off. Example: If the system is set to dwell for 2 Hours and run for 2 minutes, during the 2 minute run time the pump would pressurize and de-pressurize every 10 seconds (this is called a cycle). For every cycle of the pump the injectors will dispense one shot of lubricant. Therefore if the pump runs for 2 mins and is set to 5 on and 5 off, then the pump will do 12 cycles every 2 minutes.

Pump Cycle Time

The pump is set internally to cycle on and off, this will be factory set at 5 seconds on and 5 seconds off. This cycle time can be altered as detailed on page 16.
The pump cycle times will determine how many times the oil injectors (PDI`s) operate and hence the amount of lubricant be delivered. PDI`s can be seen on page 20 and on the main system picture on page 7.

After the operation time has been completed the power to the pump and air solenoid would be switched off for a pre set time by the controller. This time will be called the dwell time. In the controller there is a memory backup that would accumulate the conveyor operation time. For example if the chain operates for one hour and then stops, the controller will carry on counting from the one hour when the chain restarts.
The system is to be set to only operate if the chains are operating, this to avoid oil lubricating the same part of the chain as the chain is not moving.

For operation times, these times will all be individually set as each chain requirements are different. Consult the Lubricant manufacturer for recommendation of oil dosage rate.

Pneumatics (Air)

The oil dispensed by the PDI`s are delivered into a manifold, the manifold is connected to a regulated air supply (item 3 on pages 13, 14 & 15). The air pressure can be regulated manually so that the oil delivered to the Rotalube is not over pressurised. Most applications run at 10 to 30 PSI only, this depends on the oil viscosity and the distance of the Rotalube from the pump.

Caution:

To over pressurize will mean the lubricant may over-spray and contaminate.
Under pressurizing will mean that the lubricant may not spit correctly onto the chain link.

System operation - full control

3. Full control.

The Lubrication system is controlled by the RSL controller (Page 15) Item number 5. The controller would operate the pump at pre determined intervals which should be fully adjustable, so that the lubricant output can be increased or decreased to achieve optimum lubrication without under or over lubricating.

On operation of the conveyor, the controller will accumulate the operation time and operate the lubrication system at pre-set times for example one complete cycle of the conveyor chain +5% to ensure the whole chain is lubricated correctly. To operate the system the controller would have to power the pump and air solenoid valve at the same time.

After the operation time has been completed the power to the pump and air solenoid would be switched off for a pre-set time by the controller. This time will be called the dwell time. In the controller there is a memory backup that would accumulate the conveyor operation time. For example if the chain operates for one hour and then stops, the controller will carry on counting from the one hour when the chain restarts. The system is to be set to only operate if the chains are operating, this to avoid oil lubricating the same part of the chain as the chain is not moving.

For operation times, these times will all be individually set as each chain requirements are different. Consult the lubricant manufacturer for recommendation of oil dosage rate.

Pump Cycle Time

The pump is set internally to cycle on and off, this will be factory set at 5 seconds on and 5 seconds off. This cycle time can be altered as detailed on page 16. The pump cycle times will determine how many times the oil injectors (PDI's) operate and hence the amount of lubricant be delivered. PDI's can be seen on page 20 and on the main system and item 7 on pages 13,14 &15.

Pneumatics (Air)

The oil dispensed by the PDI's are delivered into a manifold, the manifold is connected to a regulated air supply (item 3 on page 13,14 & 15). The air pressure can be regulated manually so that the oil delivered to the Rotalube is not over pressurised. Most applications run at 10 to 30 PSI only, this depends on the oil viscosity and the distance of the Rotalube from the pump.

Caution:

To over pressurize will mean the lubricant may over-spray and contaminate.
Under pressurizing will mean that the lubricant may not spit correctly onto the chain link.

Rotalube inlets

Below are two illustrations of feed lines to the Rotalube. One with one Inlet only and a Rotalube with two inlets.

IMPORTANT that you see the Rotalube drawing for your application.



One Inlet

This means that the Rotalube has one inlet only on one side. Generally used when chains are small, when there is limited space on the machine or minimise the system pipework.

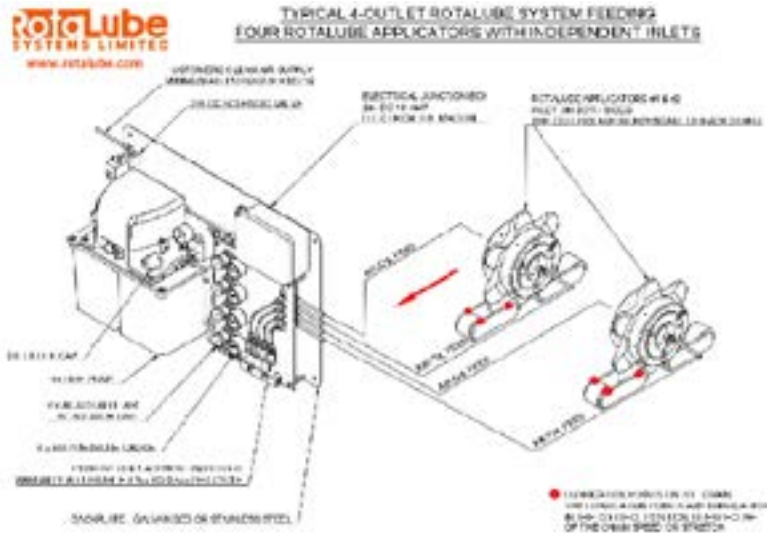


Two Inlets

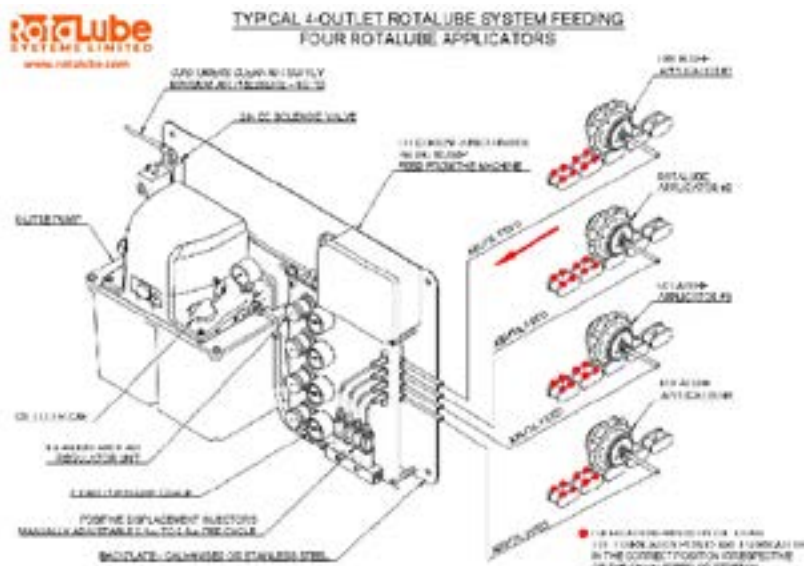
This means that the Rotalube has a lubricant inlet on either side. If the Rotalube is designed with two inlets, both inlets MUST be connected to the lubrication system.

Typical lubrication system layouts

Rotalube lubrication systems can be designed to have 1 to 14+ outlets. These systems can feed lubricant to Rotalubes with 2 inlets each or one inlet. Typical layouts below.

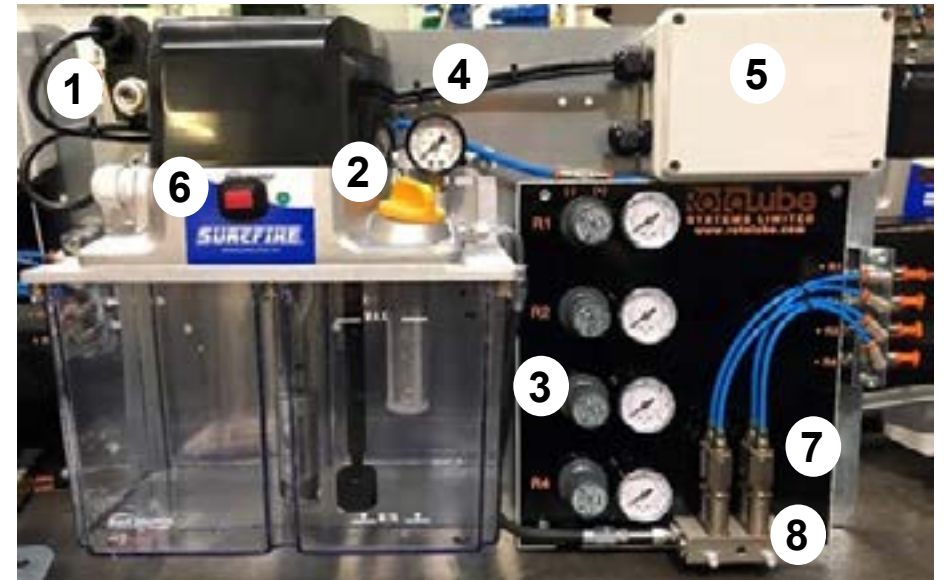


Typical lubrication system with 4 x outlets feeding 2 Rotalubes, both with 2 inlets each.



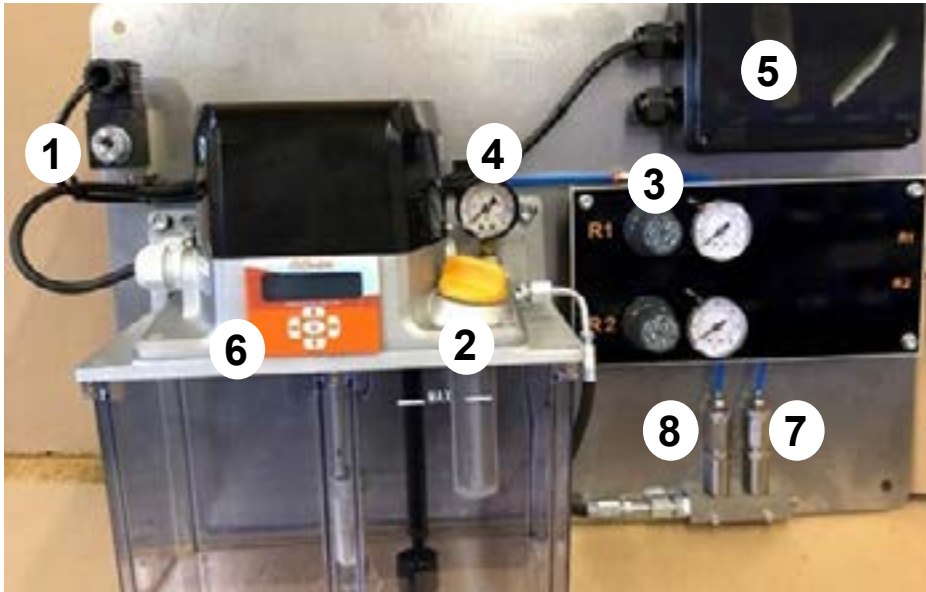
Typical lubrication system with 4 x outlets feeding 4 Rotalubes all with one inlet each.

1. System components for no control



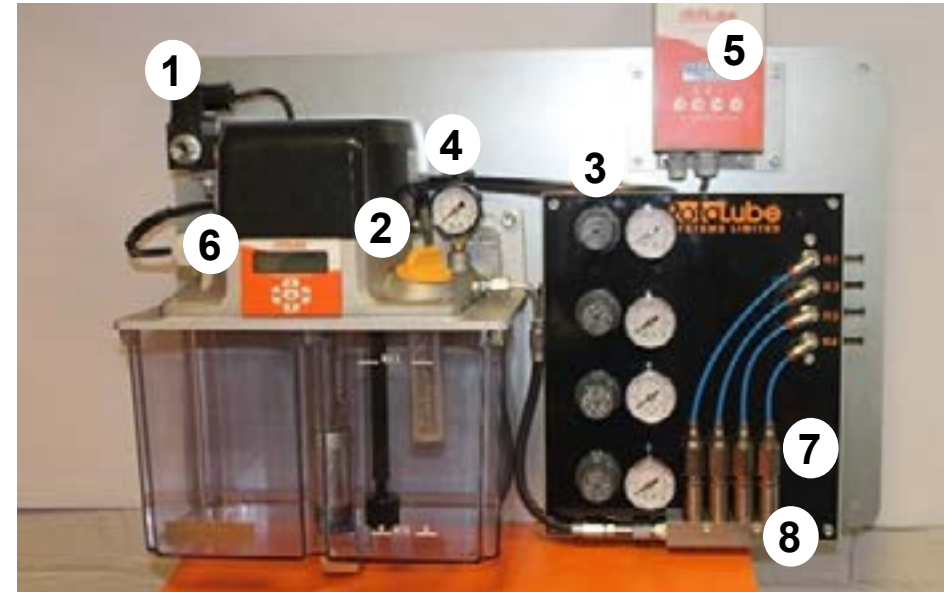
1	24v DC solenoid valve N/C	System air inlet (max. 5 bar)
2	Oil fill point	See page 26
3	Air regulator	Regulates air pressure to the Rotalubes
4	Pressure gauge	Oil pressure gauge
5	Junction box	See page 19
6	Power on light	Illuminates when power is ON
7	Positive injector	See page 26
8	Bleed point	See page 23

2. System components for cycle control



1	24v DC solenoid valve N/C	System air inlet (max. 5 bar)
2	Oil fill point	See page 26
3	Air regulator	Regulates air pressure to Rotalubes R1 & R2
4	Pressure gauge	See page 12 & 21
5	Junction box	See page 20
6	Lite controller	To alter pump cycles see page 14
7	Positive injector	See page 26
8	Bleed point	See page 23

3. System components for full control



1	24v DC solenoid valve N/C	System air inlet (max. 5 bar)
2	Oil fill point	See page 26
3	Air regulator	Regulates air pressure to the Rotalubes
4	Pressure gauge	See page 12 & 21
5	RSL DC controller	See page 20
6	Lite controller	To alter pump cycles see page 14
7	Positive injector	See page 23
8	Bleed point	See page 26

Pump cycle time adjustment

W1 timer programming

T1 = the time the pump is turned on

T2 = the time the pump is turned off

W1 = timer mode

Once the controller is powered up and the reservoir is filled above the minimum level, the controller start up with the 'BIJUR DELIMON' screen. After 3 seconds the 'RUN SCREEN' will appear.

To edit the program, press the left arrow key and right arrow key simultaneously

Once in the edit mode, the cursor will appear on the T1 HR (hour) value.

The cursor can be moved across using the left arrow key or the right arrow key

To change the values on where the cursor has been placed, press either

up arrow or down arrow

To save the settings and exit the edit screen press the * key located in the centre of the arrows.

The controller will return to the run screen and begin the new programmed lube cycle.



Pump fault indicators

If a fault occurs, the fault will appear on the screen on the pump.

F1 Low level fault – this means that the pump reservoir needs to be filled with oil.

F2 Warning! Oil Level fault

switch set point

F5 Pressure Switch set point is not reached with in the pre-set T3 time – this means that the T3 time needs to be increased.

To reset the Fault press the * key.

PSU fault on the pump screen means that the power to the pump is insufficient. 7AMP 24V DC is required.



RSL DC controller (Rotalube Standalone Controller)

Operation

The RSC DC controller is a multi-purpose programmable controller. The unit is energized during the machines operation and the system operation (Run & Dwell) mode can be adjusted to suit the system requirement.

Features

Digital status display on the front cover for easy programming.
Data memory function initiated at power down.
Compact design.
Manual override facility.

Technical Data

Operating Voltage: 24 VDC (Factory Setting)
IP Enclosure Rating: IP-47 (External Terminal Strip, IP-67 (Liquid Tight Connector)
Fault Relay Contacts: 24 VDC, 1 amp
Ambient Temperature: -20°C to 40°C (-4°F to 104°F)
Electrical Fuse: 10 amp

Key Description: "S" = Select "M" = Enter and Reset

Controller Status LE

Red Steady = Lubrication Cycle
Green Steady = Power Supply On
None Lit = No Input Power to Controller



With the controller energised:

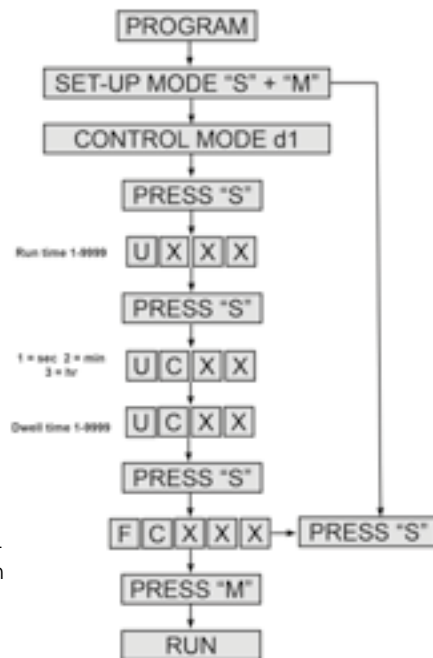
- 1 Press keys "S" and "R" together and release to enter control mode.
- 2 The display panel will now show a fixed letter for the selected mode and a flashing number (1-4).
- 3 To select the required mode press the "▲" key until you see "1".
- 4 Press the "S" key to advance to the next parameter of the selected mode.
Repeat steps "3" & "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 energised, press the "R" key to initiate a lubrication cycle.

Program Review

To review the pre-set data, press the "S" key repeatedly with the controller energised. To return to the operating condition display, press the "R" key or release the "S" key for 5 seconds.



No control and cycle control wiring

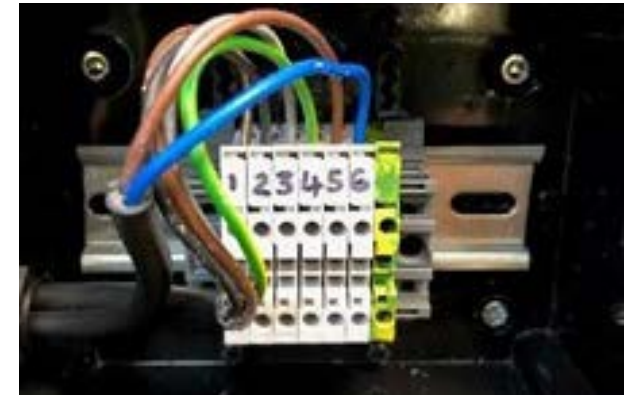
Junction box

Item 5 on page 14



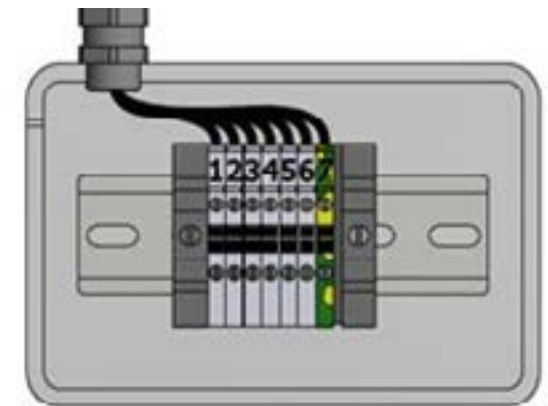
Internal wiring

See diagram below



Wiring diagram

- 1 +24v DC pump
- 2 0v DC pump
- 3 Fault relay N/O
- 4 Fault relay common
- 5 +24v DC air solenoid
- 6 0v DC air solenoid
- 7 earth



Pump motor: 24v DC 5 amp
Air solenoid valve N/C 24v DC 10w 429mA

RSL DC controller - wiring

Full Control Wiring



1 Positive (+) 24v DC supply input from machine

2 Negative (-)

The DC controller will require 24v DC supply only when the machine or conveyor chains are running.

The DC controller will operate the pump at predetermined times. Run and dwell times are fully adjustable (see page 18)

The DC controller will operate the pump and solenoid valve at the same time.

Pump motor: 24v DC 5 amp
Air solenoid valve N/C: 24v DC 10w 429mA

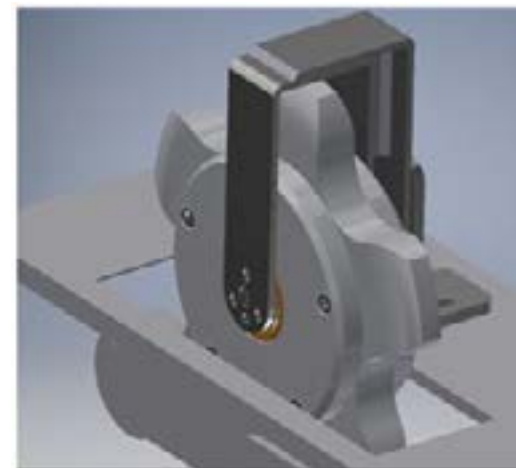
Rotalube mounting example

Note: The two illustrations, shown below, are examples only.



Smaller Rotalubes can be mounted from one side.

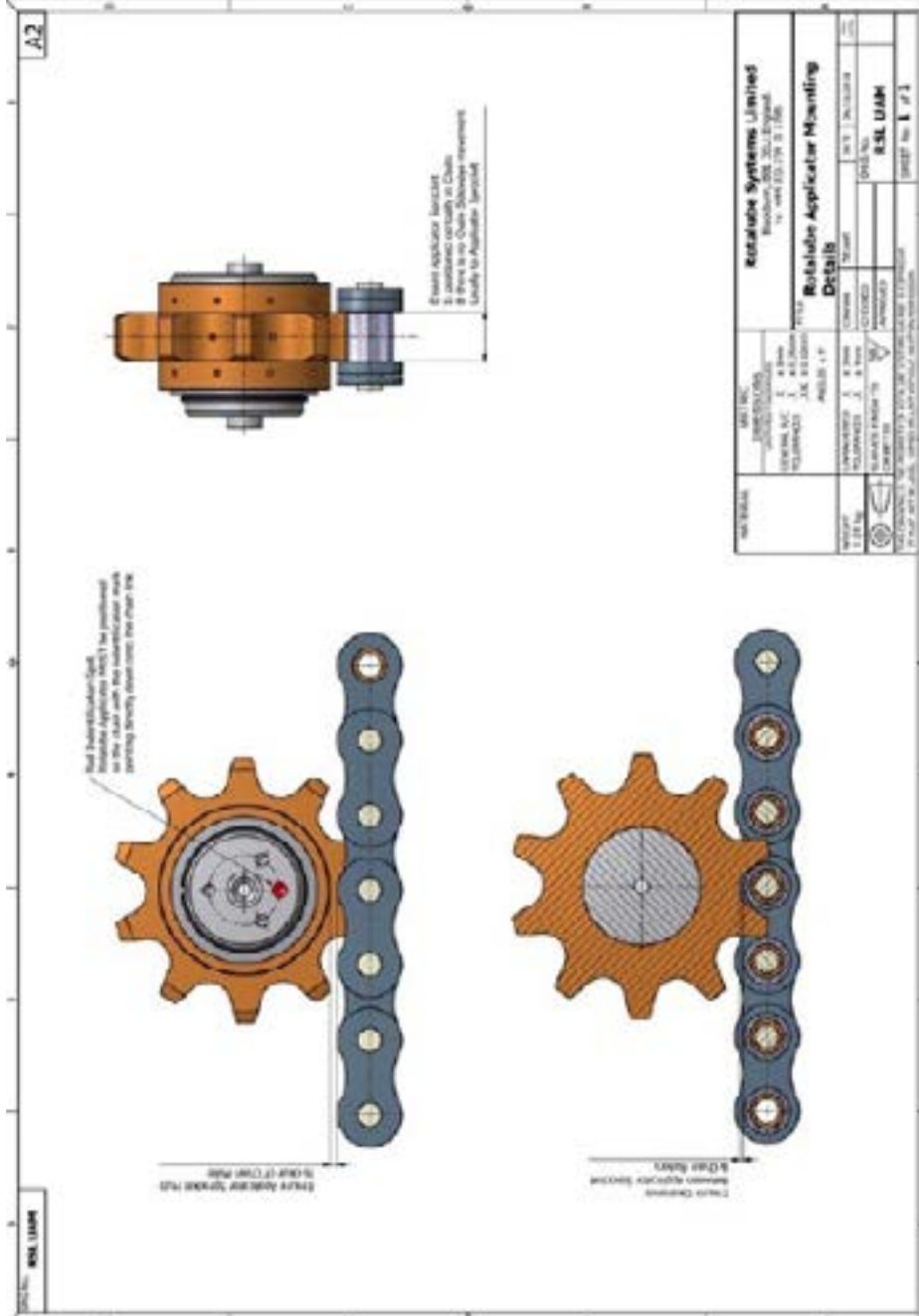
Adjustment ◀▶ or ▲▼ is recommended.



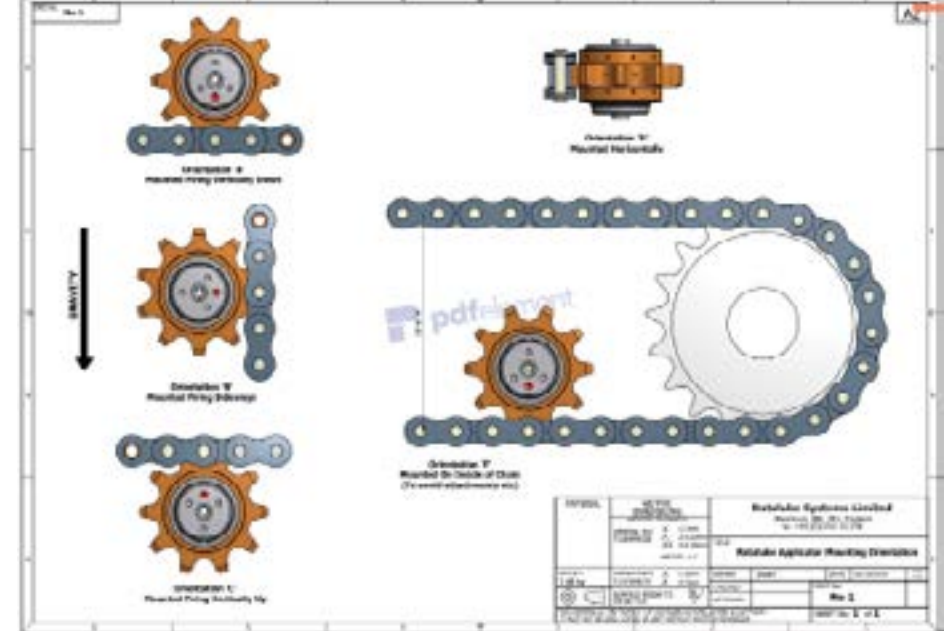
Larger Rotalubes **should** be mounted from both sides.

Adjustment ◀▶ or ▲▼ is recommended.

Rotalube mounting



Rotalube mounting tips



Rotalubes can be mounted in different Orientations. The preferred method is always positions A and E, these will give you the best results when lubricating chains.

Rotalube mounting tips:

- Ensure the RED dot on the Rotalube Hub is always next to the chain, this determines the direction of oil being delivered
- Ensure the teeth are central to the chain Inner width
- Always check the Rotalube Drawing for mounting Height recommendation
- Rotalubes must not be fitted to chains with excessive chain movement both UP and DOWN and sideways . Some chains may move and expand when under high temperatures , this needs to be considered when installing Rotalube
- Brackets must be heavy duty and be adjustable to allow the Rotalube teeth to be mounted accurately and centrally In the chain inner width

Lubricant adjustable output injectors (PDI)

The PDI injectors are designed to displace an accurate amount of lubricant as and when they are cycled (pressurised and de-pressurised).

The volume of oil delivered per cycle can be adjusted manually by taking the push in fitting off the end of the injector and then locating a flathead screw inside the injector.

Adjustment Range 0.01cc Min to 0.50cc Max
19 complete revolutions (360 degrees) is the full adjustment range.



By turning the screw:

Clockwise, this will decrease the oil flow.

Anti clockwise will increase the oil flow.



No oil flow may mean the internal screw has been fully tightened and stopping oil flow during a pump cycle.

Alternatively the system may be airlocked, see below (Bleeding the system).

Be aware that the PDI injectors are pre set to displace the mid range amount of 0.25cc per cycle.

The cycle time of the injector can be can be adjusted manually using the pump cycle control.

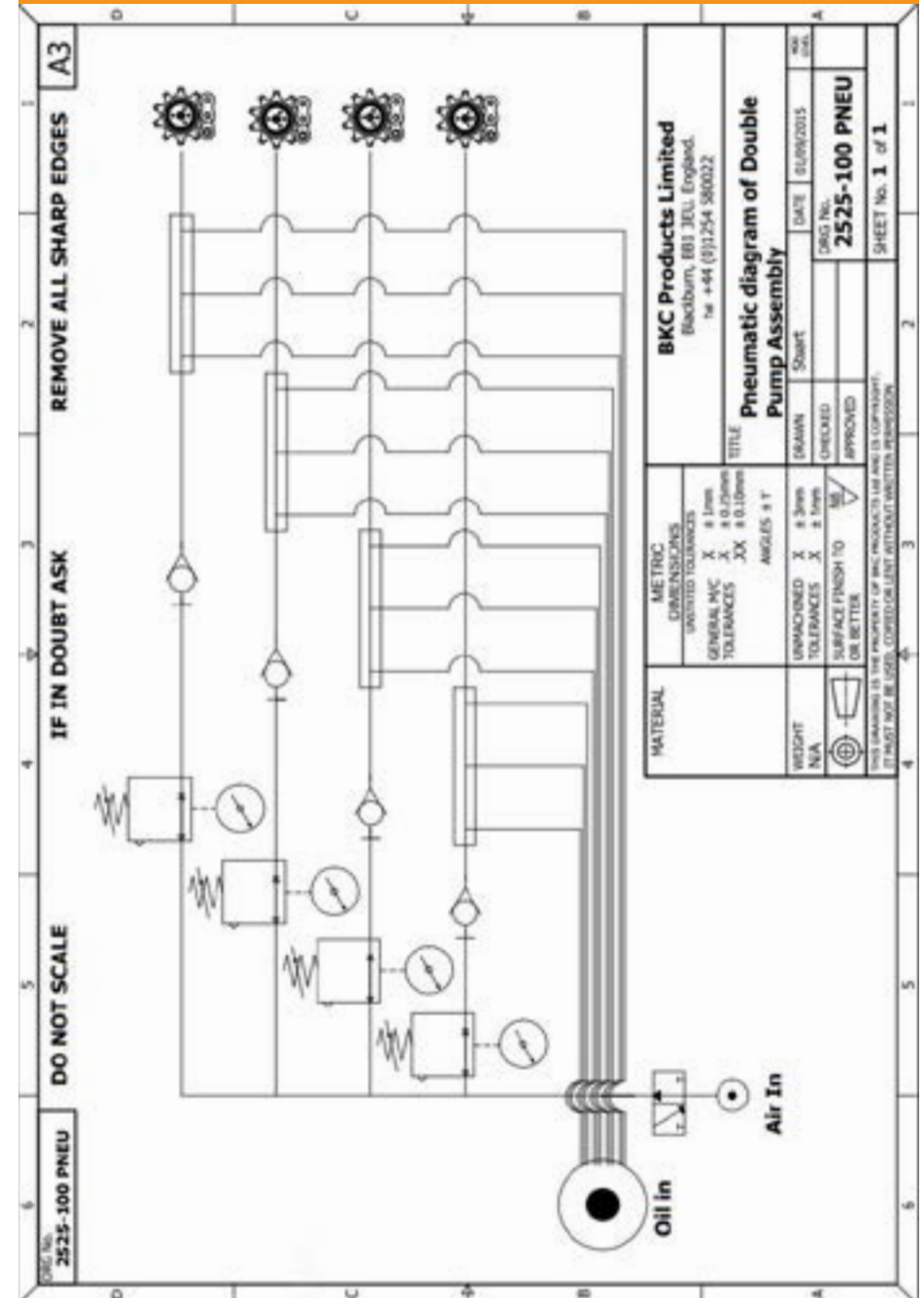
See page ..

Bleeding System.

If the system is not pumping oil. This could be due to an airlock in the pipes. To relieve the air, loosen the plug located on the side of the PDI manifold and then turn the pump on. When the oil starts to flow from the plug, tighten the plug back in.



Pneumatics



Lubricants

For the best results the applicator operates with oil viscosities of 68 to 220 Cst.

Consult Rotalube Limited if the oil you are planning to use contains Esters, Anti-Misting, Anti-Foaming, Dispersants or Tacky additives.

These additives can have a negative effect on a system's performance.

Oils with solid additives such as PTFE / Teflon, Chlorinated Paraffins, Graphite, Molybdenum Compounds should not be used.

Test pump and injectors

Fill the pump reservoir with the recommended oil at the filler breather to the MAX fill line marked on the plastic reservoir.



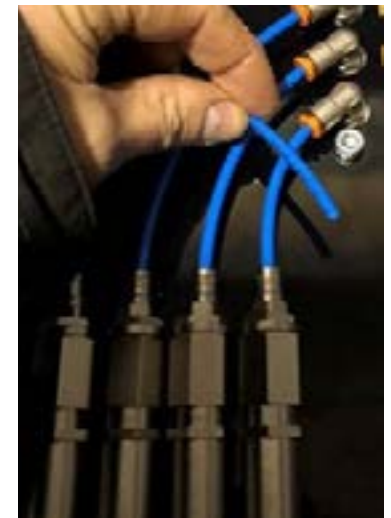
Bleed the system. Make sure that there is no air in the feed from the pump to the (PDI's) Injectors.

Run the pump and loosen the plug as shown until you see oil leak from the plug. Tighten the plug and seal and the Injectors will deliver oil on each cycle of the pump.



Once the reservoir has been filled with the recommended oil and the system bled, pull out the 4mm pipes located on the push in fittings on mixing manifold as shown.

Turn power onto the pump and the pump will cycle. Pressurise then de-pressurise. The injectors will start to deliver oil on each cycle, keep the pipes open until you see oil. Oil should flow out of the pipe indicating that the system is functioning within a minute or so.



Testing and commissioning

Connect the feed pipes to the Rotalube and turn open the air solenoid valve. Adjust the air pressure to between 10 to 30 PSI depending on application.

Connect both Rotalubes to the two feed outlets R1 & R2 and mount one of the Rotalubes on the test bracket or simply hold in position by hand, ensuring the red marker is indicating that the oil will be delivered onto the card. Hold the applicator onto a flat surface on some card.



Operate the pump and solenoid and index the Rotalube applicator with your hand. Slowly turn the applicator and increase or decrease the air pressure until you see a good spray pattern.

Note: The oil output is controlled and will be very fine, the system works on the principle of "little oil but often".



A very light spray pattern should be observed as detailed, the air pressure may have to be adjusted to give you the best pattern. This pressure can alter depending on operating conditions and length of feed line pipe. Once successfully tested repeat the test with the second feed line and the second applicator.

Install the Rotalubes onto the pre-fabricated bracket. Ensure that the applicator teeth of the sprocket are central and not touching the sides of the chain. Operate the line slowly and observe that the Rotalube is running smoothly, stop and re-adjust the applicators needed, if operation is not smooth. The system operation times are now ready to be set.



Operation Times.

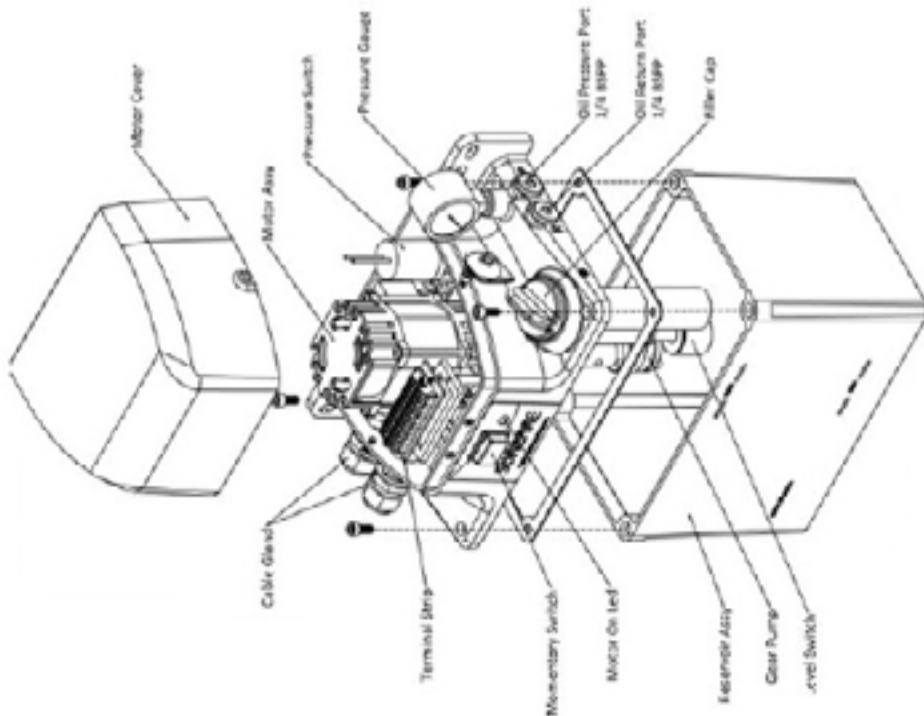
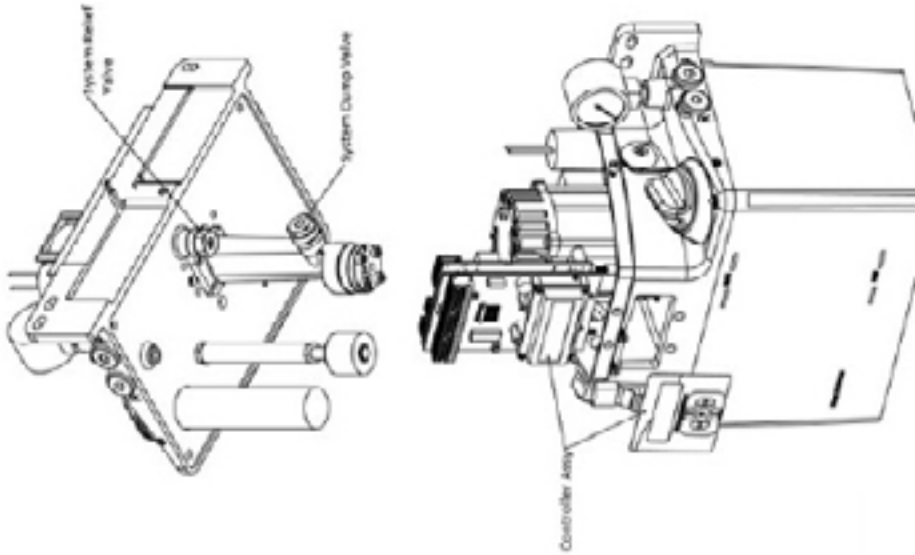
To be determined on a case by case basis, some applications need very little oil due to the application and the chain may be in a food factory or the chain may be close to product.

Some applications may need larger volumes of oil due to the conditions or the chain may be large or in a very dirty environment. (Please consult the machine manufacturer and lubricant supplier to determine the oil requirement).

Maintenance and upkeep

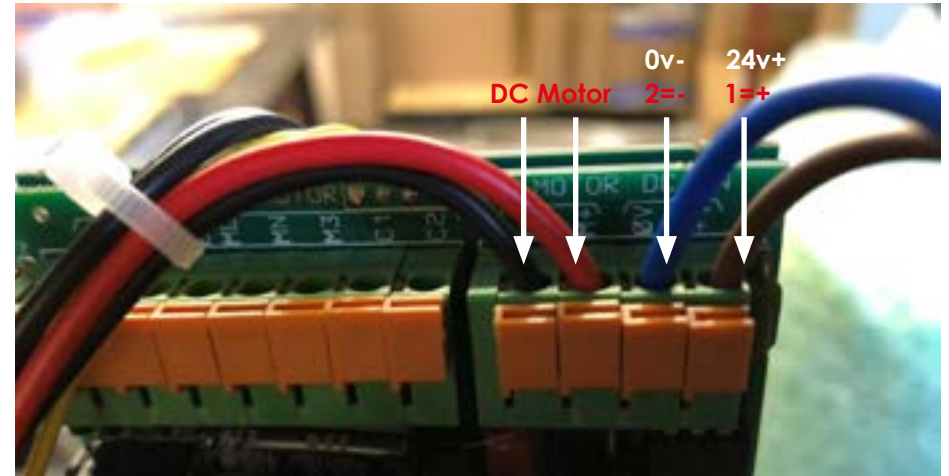
Action	Period	Instructions
Refill the reservoir	Weekly	Re-fill the reservoir with recommended oils at the fill point detailed on page 7 of document Use recommended lubricants can be seen see page 17.
Monitor Oil Consumption	Weekly	Check the oil consumption to ensure that the oil being applied to the chain is consistent with the machines running times.
Clean the oil filler breather/strainer	Yearly	Remove the pump filler on top of the pump reservoir and clean with solvent. Dry and install back in the same position.
Rotalube Check	Monthly	Check the cleanliness of the Rotalube and that the Rotalube nozzles / outlets are not restricted by the build up of dirt. If so remove and clean. Check that the applicators are running smoothly in the chain and not catching the side plates. (Rolling Free) Use the test bracket and test the operation of the Rotalube before re-mounting. Use the installation gauge when re-mounting the Rotalube on the line.
Rotalube Check	Yearly	Remove the Rotalubes and disassemble, check for contamination internally and externally and clean using solvent. Dry the applicators and re-seal using the repair kits. Alternatively replace the Rotalubes with the stock units and send the applicators to Rotalube or official Rotalube distributor for a full re-furbish. Use the test bracket and test the operation of the Rotalube before re-mounting. Use the installation gauge when re-mounting the Rotalube on the line.

Pump assembly



Internal wiring of the pump

Terminal strip power connections

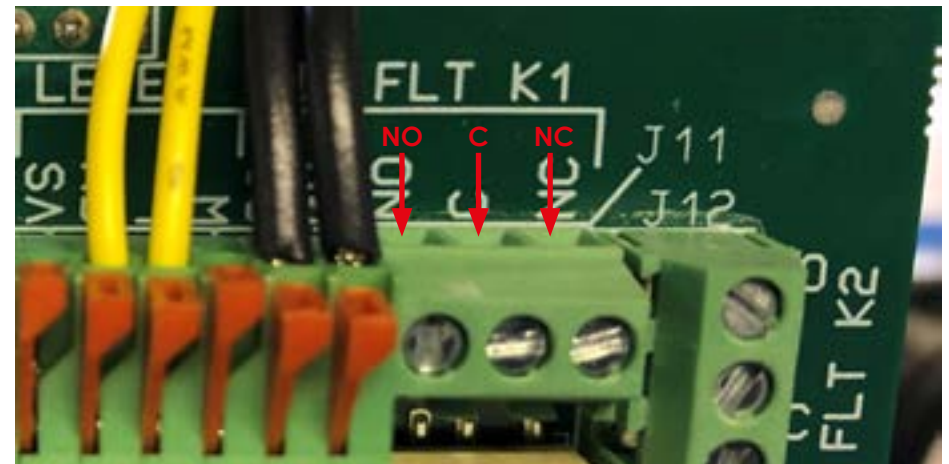


Wiring the timer controller

All wiring diagrams are available underneath the motor cover

DC Motor (Power Input - DC IN)
+V = +24v DC 0V = DV

Internal Wiring Power To The Pump (-) and (+)



K1 is the common alarm - both pressure not reached in the internal T3 setting on the pump cycle control or system reservoir low level

Lubricant application calculation

Each Rotalube is fed oil from one lubricant injector "Positive Displacement Unit" (PDU).

The PDU's are fully adjustable (See page 23). The range is 0.01cc to 0.5cc Max.

Normally the PDU's are factory set at 0.25cc per shot.

The pump is pre-set, internally, to cycle 5 seconds on and 5 seconds off. This cycle means that the injector will operate once every 10 seconds.

Therefore 6 (six) operations per minute.

If set at 0.25cc per shot, each Rotalube will receive $0.25\text{cc} \times 6 = 1.5\text{cc}$ per minute per inlet, and therefore one chain will receive 3.00cc per minute in total (because there are two inlets per Rotalube).

Estimate

Based on 1.5cc of lubricant per meter, per week, the chain length is 400m, then 600cc of oil needs to be delivered per week.

$$600\text{cc} / 7 = 85\text{cc per day}$$

Average speed of production line is 12 metres per minute, one revolution of the chain would be $400\text{m}/12\text{m} = 33.3$ minutes.

$$\text{Volume per metre would be } 33.3 \text{ cycles} \times 3\text{cc} = 100\text{cc} / 400\text{m} = 0.25\text{cc/m}$$

Number of lubrication cycles per week would be 6x.

Note:

Oil delivered onto the chain may be slightly different for each application. Please discuss this with your preferred lubricant manufacturer.

Troubleshooting

Problem	Cause	Solution
Pump does not work	<ol style="list-style-type: none"> 1. No Power 2. Fuse Blown 3. Loose electrical connections 4. Defective PLC 5. Defective Motor 	<p>Check power to the pump</p> <p>Check Fuse and replace</p> <p>Check all wires and connections</p> <p>Re program</p> <p>Replace the motor</p>
Chain Appears Dry	<ol style="list-style-type: none"> 1. Empty Reservoir 2. Inoperative pump 3. Inoperative pump element 4. Time between lubrication cycles are too long 5. Reservoir filled with incorrect lubricant 6. Main feed line damage 7. Solenoid failure 8. Blocked Rotalube 	<p>Refill the reservoir (see above)</p> <p>(see above)</p> <p>Adjust the time cycle</p> <p>Refill with recommended oil</p> <p>Repair pipes and fittings</p> <p>Replace the solenoid valve</p> <p>Inspect the Rotalube</p>
Pump working but no lubrication	<ol style="list-style-type: none"> 1. Empty Reservoir 2. Inoperative pump 3. Reservoir filled with incorrect lubricant 4. Main feed line damage 5. Solenoid failure 6. Blocked Rotalube 	<p>Refill the reservoir with correct oil</p> <p>(see above)</p> <p>Refill with recommended oil</p> <p>Repair pipes and fittings</p> <p>Replace the solenoid valve</p> <p>Inspect the Rotalube</p>
Over Lubrication	<ol style="list-style-type: none"> 1. Too much oil on the chain and chain guides 	<p>Adjust the time settings</p>
Rotalube not functioning	<ol style="list-style-type: none"> 1. Contamination externally 2. Contamination internally 3. Mounting position incorrect 4. Oil/air feed line delivery failure 	<p>Remove and clean</p> <p>Remove and clean</p> <p>Re-position the Rotalube using chain gauge</p> <p>Replace or repair feed lines</p>

Quick set up guide

- Mount the pump as central as possible to all the chains being lubricated, to minimise the pipe work.
- Install the Rotalube on a bracket so the chain is central and in a position where there is no or very little movement.
- Connect the air and the 24V DC to the system backplate.
- Fill the pump.
- Connect the pipes from the system backplate or enclosure , ensure ALL pipes are clean and clear them with compressed air before connecting to the Rotalube/s.
- Test the pump by putting power onto the pump and/or solenoid valve- check that the pump is cycling (pressure up to @35Bar and then down to Zero) the pump is pre-set to pressurise for 5 seconds and de pressurise for 5 seconds.
- When power is on the pump it may fault `F5` just override this by pressing the star on the pump key pad. The system may indicate low pressure `F5` a couple of times before the pump starts to pressurise correctly.
- Turn the regulators OFF and disconnect the 4mm OD feed pipes from the Injectors.
- Observe oil flow from the Injectors , when the pump is cycling (you should see a small pulse of oil for every pump cycle. It may take a few minutes before oil primes the 4mm OD Lines).
- Re-connect the oil feed pipes from the Injectors and turn the air on at the regulators to about 20 PSI.
- Observe the Rotalubes , depending on the feed pipes the oil being delivered by the Rotalube may take many minutes , sometimes over an hour.
- When delivering Viscous oils, the oil will spit better when the temperature increases, so when commissioning using viscous oils the delivery on the chain will improve in time.
- Set the system RUN and Dwell Times to deliver the correct amount of oil onto the chain, recommended by the lubricant supplier.

Access the terminals in the DC controller



To access the internal connections in the DC controller, remove the controller from the backplate.



With a screwdriver, remove the four screws at the back of the controller.



Access the terminals by removing the front cover.

www.rotalube.com



Rotalube
Unit 5, Greenbank Business Park,
Dyneley Road
Blackburn Lancashire BB1 3AB
Telephone: 01254 311196
Email: sales@rotalube.com