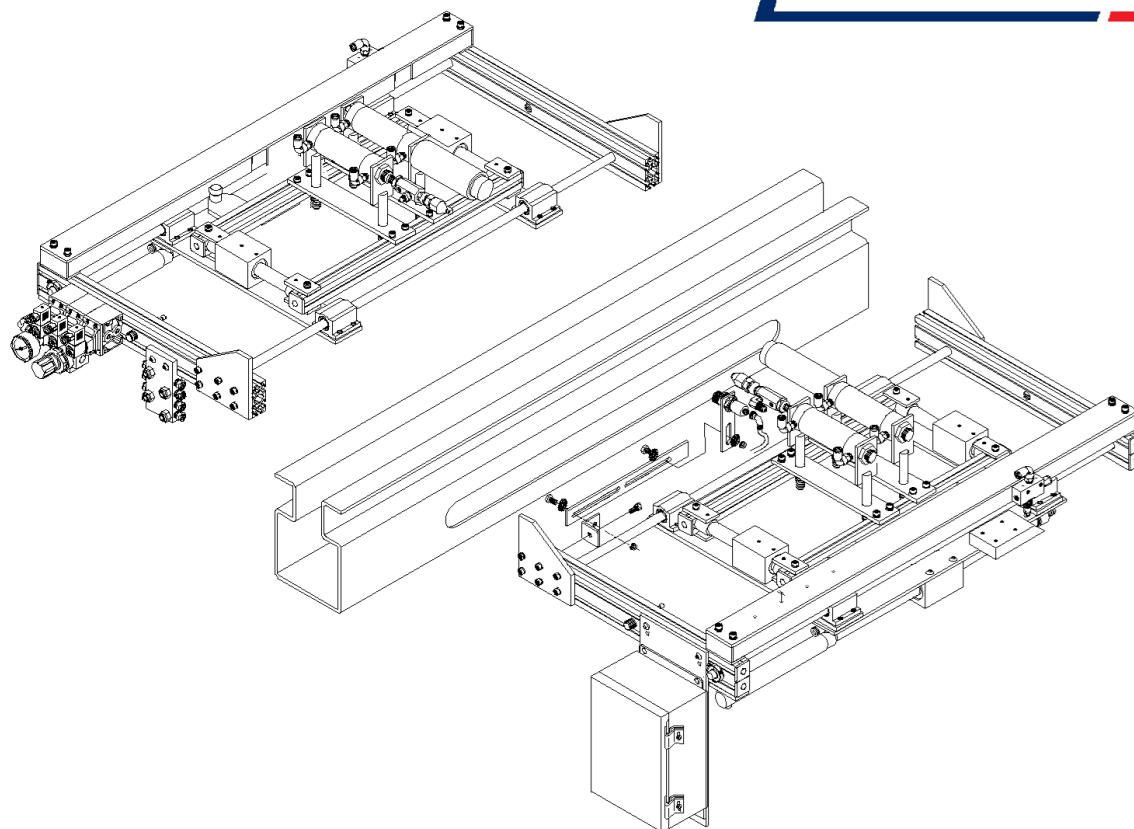




PENDULUM GREASER #26174

LubeCon USA, LLC
customercare@lubeconusa.com
Phone: 1-800-582-3266

INTRODUCTION

Thank you for choosing LubeCon for your automatic lubrication equipment. We believe that you will find the quality of our state of the art equipment, expertise and professionalism of our service personnel to be unmatched in the industry.

Inspect all equipment upon receipt and notify us immediately of any shipping damage and/or missing equipment.

Please look over the complete manual before installing and/or operating your equipment. The manual is designed to provide you with the necessary information to install and program your equipment for optimal performance. If at any time you have questions concerning installation or operation of the equipment please contact your local LubeCon sales/service representative.

Value Added Services:

LubeCon Manufacturing and Engineering is dedicated to providing our customers with solutions that are designed around our extensive experience in the industrial lubrication field and our own state of the art equipment. We offer application specific equipment design and manufacturing, therefore you may find that your manual has been updated or modified to cover any application specific equipment or installation procedures.

Confidential:

This manual may include confidential information. It is incumbent upon the reader to be confidential concerning all aspects of LubeCon equipment and/or services.

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SECTION 1 EQUIPMENT DESCRIPTION AND FEATURES

The LubeCon Automatic Trolley Wheel Greaser is a state of the art tool designed to effectively reduce maintenance cost on your conveyor system. The following features have been designed into the LubeCon Automatic Trolley Wheel Greaser to ensure trouble free set-up and operation of the unit for years to come:

- 4 channel controller allows for running greaser and 2 other lubricators
- Controller inter-face for PLC control and monitoring
- Safety breakaway design protects greaser in the event of equipment mal-function
- Mounting assembly allows for easy installation and removal of unit
- Remote controller location increases safety
- Modular design reduces spare parts inventory
- Quick disconnect and DIN style connectors allow for easy installation and removal
- Compact low profile design for installation flexibility
- Adjustable dispense time for more or less lubrication

SECTION 2 SPECIFICATION

- 1.1 WEIGHT: 100 lbs. (greaser only, track sections are additional)
35 lbs. (grease pump)
130 lbs. (shipping crate)
- 1.2 OVERALL DIMENSIONS: 36" L x 48" W x 24"H (installation clearance)
- 1.3 POWER REQUIREMENTS: 115 VAC 15 Amp
- 1.4 RESERVOIR CAPACITY: Non-dented, 5-6 gallon straight sided pail (35-40#)
Follower plate supplied with pump
- 1.5 AIR REQUIREMENTS: 80 PSI. filtered dry air minimum
- 1.6 OPERATING TEMPERATURE: 60 to 150 deg. F
- 1.7 LUBRICANT VISCOSITY: Up to NLGI #2
- 1.8 GREASE DISPENSE VOLUME: Programmable dispense time
- 1.9 EXTERNAL VISUAL INDICATORS: Power to unit
Grease cycle in process
Fault status
- 1.10 CONVEYOR SPEED: 0-70 FPM
- 1.11 TROLLEY SPACING: 6" minimum
- 1.12 TROLLEY WHEEL SIZE: 3", 4", or 6" (indicate size and manufacturer)
- 1.13 GREASE PUMP: 50 to 1 air operated

SECTION 3 INSTALLATION

3.1 SELECTING THE GREASER LOCATION

Choosing the proper location for your greaser system is the first step in the installation procedure. Consider the following guidelines for your location:

Locate the greaser on the conveyor after the conveyor has been unloaded. This will prevent possible contamination of a production part, should the unit ever require service work.

- If ovens or dryers are present on the conveyor, locate the greaser on the conveyor after the conveyor exits the oven or dryer. Operation at normal ambient temperatures (60-90 deg. F) prolongs equipment life.
- The greaser should be mounted where the conveyor chain is stable, under tension, and away from harsh conditions; such as water spray or high temperatures.
- The controller and grease pump station should be placed in a convenient location to the greaser. Place these units away from the main traffic area, within a 20 foot radius of the greaser unit, and within view of the greaser unit.
- Locate the greaser unit where it is easily accessible so that it can be monitored and serviced as required.
- Track section must be straight.
- The installation area must be free of obstructions (see Section 1, 1.2)

3.2 INSTALLATION OF THE GREASER UNIT

Having selected the portion of the conveyor where the greaser unit will be located, you are now ready to make the physical installation. The following steps outline the installation procedure:

- Mount the unit on the conveyor
- Insert the magnetic tee block in the chain (if applicable)
- Mount the controller and pump station hardware
- Connect the electrical power source to the controller
- Connect the air supply to the pump station.
- Connect the grease supply line from the pump unit to the greaser unit
- Connect the air supply line from the pump unit to the greaser unit
- Connect the electrical cord from the controller to the greaser junction box

Each step is further explained on the following pages.

NOTE: Keep all supply lines out from the conveyor path. Supply lines should be fastened overhead, on structural components of the greaser unit, or on structural components of the building. Wire tie-wraps and beam clamps are common methods employed to fasten supply lines to existing structures. Leave additional line (slack) on both ends, so adjustments can be made, if required.

3.2.1 MOUNTING THE GREASER UNIT

Field mount installation:

- See Field installation supplement (SECTION 3.2.10).

Pre-mount installation:

- Remove section of track with corresponding length to the pre-mounted section.
- Install pre-mounted track section

NOTE: Be sure to install greaser unit in the correct direction of travel. Arrows are provided on the unit for this purpose.

3.2.2 INSERT THE MAGNETIC TEE BLOCK(OPTIONAL)

The magnetic tee block, when used, should be bolted into the male segment of the power chain. The block should be placed equal distance from the trolleys. Be sure to put the block in so the magnet (red dot) is on the same side as the magnetic switch located on the greaser unit. This block is the mechanism which allows the controller to determine what part of the cycle the greaser unit should be in (lead, trail, off) **when trolley counts are not used.**

3.2.3 MOUNT THE CONTROLLER AND PUMP STATION HARDWARE

Secure the controller panel to a solid structure that is free from vibration or shock. Locate the pump in a convenient area close to the controller panel but out of the traffic area.

3.2.4 CONNECT THE ELECTRICAL POWER SOURCE TO THE CONTROLLER

The incoming power source (115VAC) must be connected to the controller's terminal strip as shown on the controller's wiring schematic inside the controller door (see SmartLube 2000 manual).

IMPORTANT: Incoming power sources should be a dedicated circuit, clean, continuous and without interruptions.

3.2.5 CONNECT THE AIR SUPPLY TO THE PUMP STATION

Connect the incoming air supply to the pump station quick dis-connect using a flexible line or hose.

IMPORTANT: Disruption of the air supply may result in equipment damage not covered by warranty

3.2.6 CONNECT THE GREASE SUPPLY LINE FROM PUMP STATION TO GREASER UNIT

Simply attach the supplied line to the pump quick dis-connect and the greaser unit quick dis-connect.

3.2.7 CONNECT THE AIR SUPPLY LINE FROM THE PUMP UNIT TO THE GREASER UNIT

Simply attach the supplied airline to the greaser unit quick dis-connect located on the valve assembly.

3.2.8 CONNECT THE BRAD-HARRIS CORD ASSEMBLY FROM THE CONTROLLER TO THE GREASER JUNCTION BOX

NOTE: Power supplied by this cord is 24VDC or less

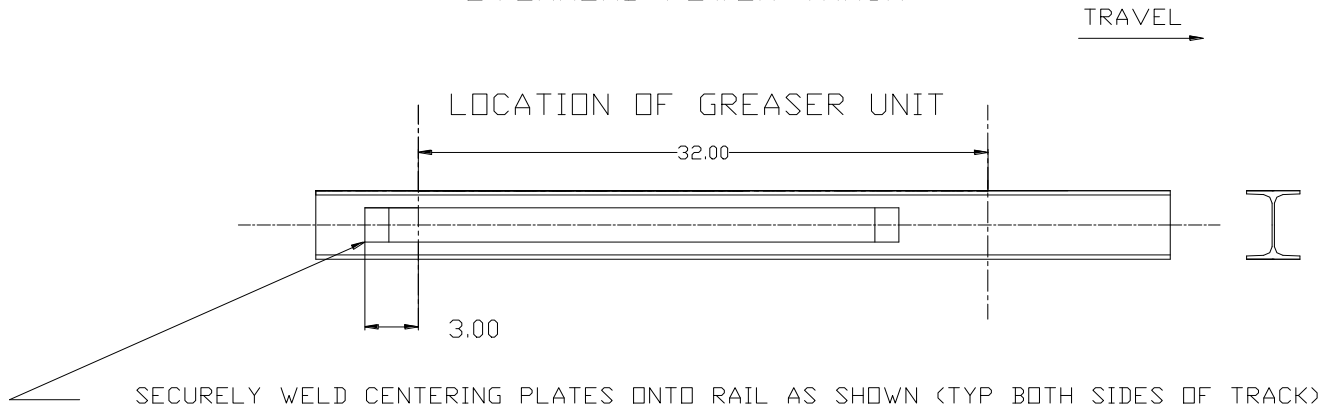
3.2.9 START UP PROCEDURE

- Fill the reservoir with the proper lubricant
- Check to see if the grease dispensing nozzles are aligned with the zerk fitting on the trolley wheel. Adjust accordingly.(see Section 3)
- Set incoming air pressure (first regulator in line) to 80PSI.
- Set pump air pressure (second regulator in line) to 50 PSI.
- Turn on power to controller

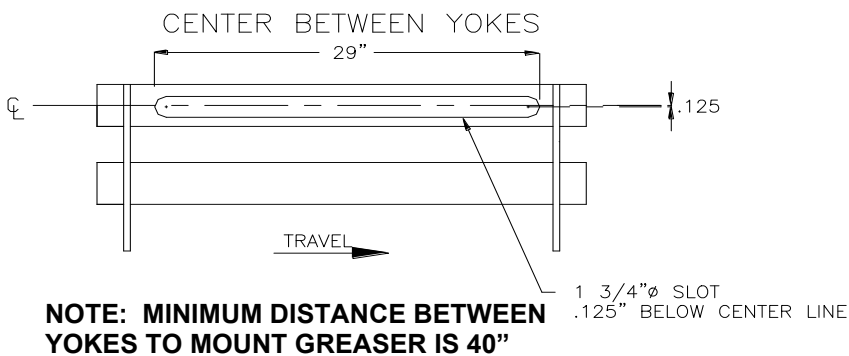
NOTE: Whenever possible, implement the start-up procedure while the conveyor is stopped. However, the program parameters are factory set for safety. Resetting the program parameters are discussed in the Advanced system controller manual.

3.2.10 FIELD INSTALLATION SUPPLIMENT

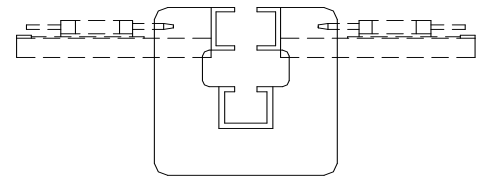
OVERHEAD POWER TRACK



INVERTED POWER AND FREE



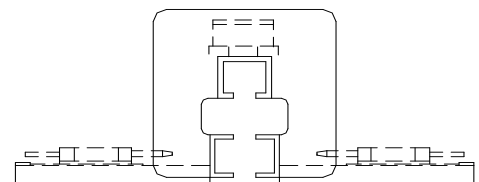
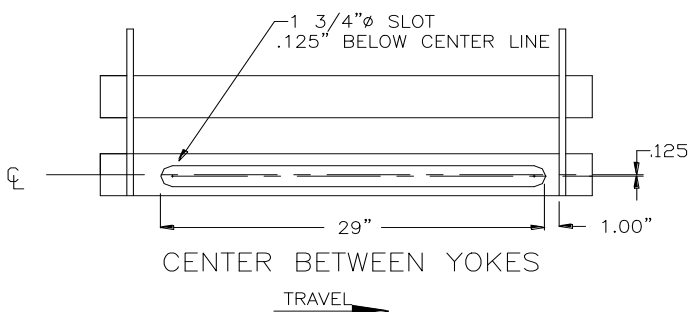
NOTE: SLOT TYPICAL ON OPPOSITE SIDE
DIRECTLY ACROSS FROM THIS SIDE.



IMPORTANT

When welding the greaser sections into place, the centerline of the nozzles must be aligned with the centerline of the zerk. Be sure travel is parallel

OVERHEAD POWER AND FREE



Section 4 ADJUSTMENTS AND ALIGNMENT

This section will discuss mechanical adjustments only. For a complete discussion on program adjustments see the Advanced System Controller Manual supplied with this manual .

4.1 GREASE NOZZLE CYLINDER ADJUSTMENT

Vertical adjustment: Thread the adjusting nuts (2) clockwise to raise the cylinder/nozzle assembly or counter-clockwise to lower the cylinder/ nozzle assembly in relationship to the zerk fitting on the trolley wheel.

Horizontal adjustment: Loosen the button head screws (4) that hold the cylinder assembly down. Lightly tap the assembly in the direction needed. Tighten the screws back down before cycling the greaser unit.

NOTE: Nozzle alignment is critical to tip wear and proper seating on the zerk fitting.

4.2 GUIDE ROLLER CYLINDER ADJUSTMENT

See Section 4.1

4.3 RETURN CYLINDER PRESSURE CONTROL

This is adjusted at the regulator on the valve assembly. Pressure should be set high enough to cause the carriage assemblies to fully return to the home position (under normal conditions the regulator should be set at 20psi) without completely collapsing the shock absorber.

4.4 RETURN CYLINDER SPEED CONTROL

Speed control is accomplished with the use of flow controls located on the return cylinder. To increase speed turn the adjustment screw counter-clockwise or to slow down turn clockwise. Flows should be set so the carriage returns as fast as possible without slamming into the shock absorber. Both carriage assemblies should return at the same rate. Carriage return rates may have an affect on the Monitor Fault function of the Advanced system controller. (see Greaser Troubleshooting Guide).

SECTION 5 – PROGRAMMING

INSTRUCTIONS

Button Functions

Fault:

This button is used when the LCD window indicates there is an abnormal condition that was detected by the controller. It is also used to verify there are no abnormalities.

Ten-Number Keypad:

Like a calculator keypad, the ten number buttons (0 – 9) and the decimal button are used to enter numeric digits.

Number 0:

This button has a second function as a cycle button to restart a channel and should only be used by an authorized LubeCon Service Representative in this way.

Number 7:

This button has a second function as a test button that shows a 5-minute simulation of a particular channel's program. Qualified service personnel should perform this test.

Enter:

This button is used to conclude a step in programming to store data into memory. Allows the user to go to the next stage of programming.

Program:

This button is used to enter the programming mode. A menu of step-by-step instructions aids the programmer in entering information for each channel.

View:

This button allows the programmer to review all the program settings that have been entered for a particular channel.

Cursor Buttons:

This button allows you to navigate left and right, which makes it possible to scroll through settings, commands and options.

Clear:

This button is used to cancel or erase data, information or programming operations.

Basic Programming Instructions for all Advanced System Controllers

LCD (Liquid Crystal Display) Window:

This window provides important information including channel selection, function selection, programming steps, fault detections and channel status. Once the unit has power, it will continually scroll through channels, displaying each channel's status at the time ("real time"). If user scrolls to a particular channel, the display will show that channel's real time activity for 30 seconds. It will then continue scrolling through all channels.

The LCD Window features backlighting, making it easy to view when ambient light is low.



Channel Number:

This area identifies the channel or greaser number that is being viewed or programmed.

Symbols:



Indicates a lubrication cycle is in progress.

ZZ:

Indicates the controller does not have an input/machine run contact. (Timer mode only)



Indicates the controller is not in a lubrication cycle. Controller is in an off-cycle counting or timing down until next lubrication cycle.

LL:

Channel is in a low-lube fault

HP:

Channel is in a high-pressure fault

MC:

Channel is in a monitor fault

! :

Channel is faulted, incorrectly programmed or otherwise not working

Channel Status:

This area indicates the status of a particular channel at any given time. This area continually scrolls...

Greaser Programming Definitions

Greaser Mode

All

Will grease all leading trolley bearings in the first revolution then all trailing bearings in the second revolution then unit will go into its off cycle. **Note: Monorail and inverted power greasers only.**

Lead

Will only grease the leading trolley bearings in one revolution of the conveyor then unit will go into its off cycle. This setting will also be used to grease all types of free carrier bearings. **Note: Monorail, inverted power and free carrier greasers only.**

Trail

Will only grease the trailing trolley bearings in one revolution of the conveyor then unit will go into its off cycle. **Note: Monorail and inverted power greasers only.**

Off cycle count

Either the number of times the magnet, that is connected to the conveyor chain, travels past the greaser or the **max trolley count** entered is achieved.

Max trolley count (Must be used when programming free carrier greasers)

The number of trolley sets in one revolution of a conveyor + 5%.

Dispense time

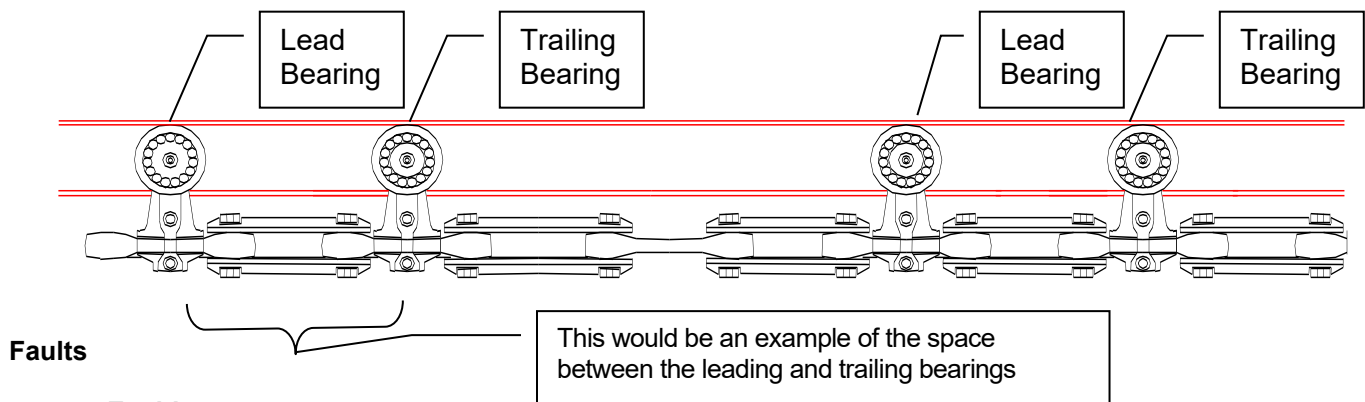
The length of time it takes for the nozzle to engage the bearing and then retract. Use the **Max Dispense Time** graph to determine this setting.

Retract time

This is the time delay between when the guide roller and the nozzles disengage from the conveyor and the return cylinder retracts the carriage to its home position.

Lead / trail time

Based on conveyor speed, **lead / trail time** is the time it will take for the space between the leading and trailing bearings to pass by the sensor. Use the **Lead / Trail time** graph to determine this setting.

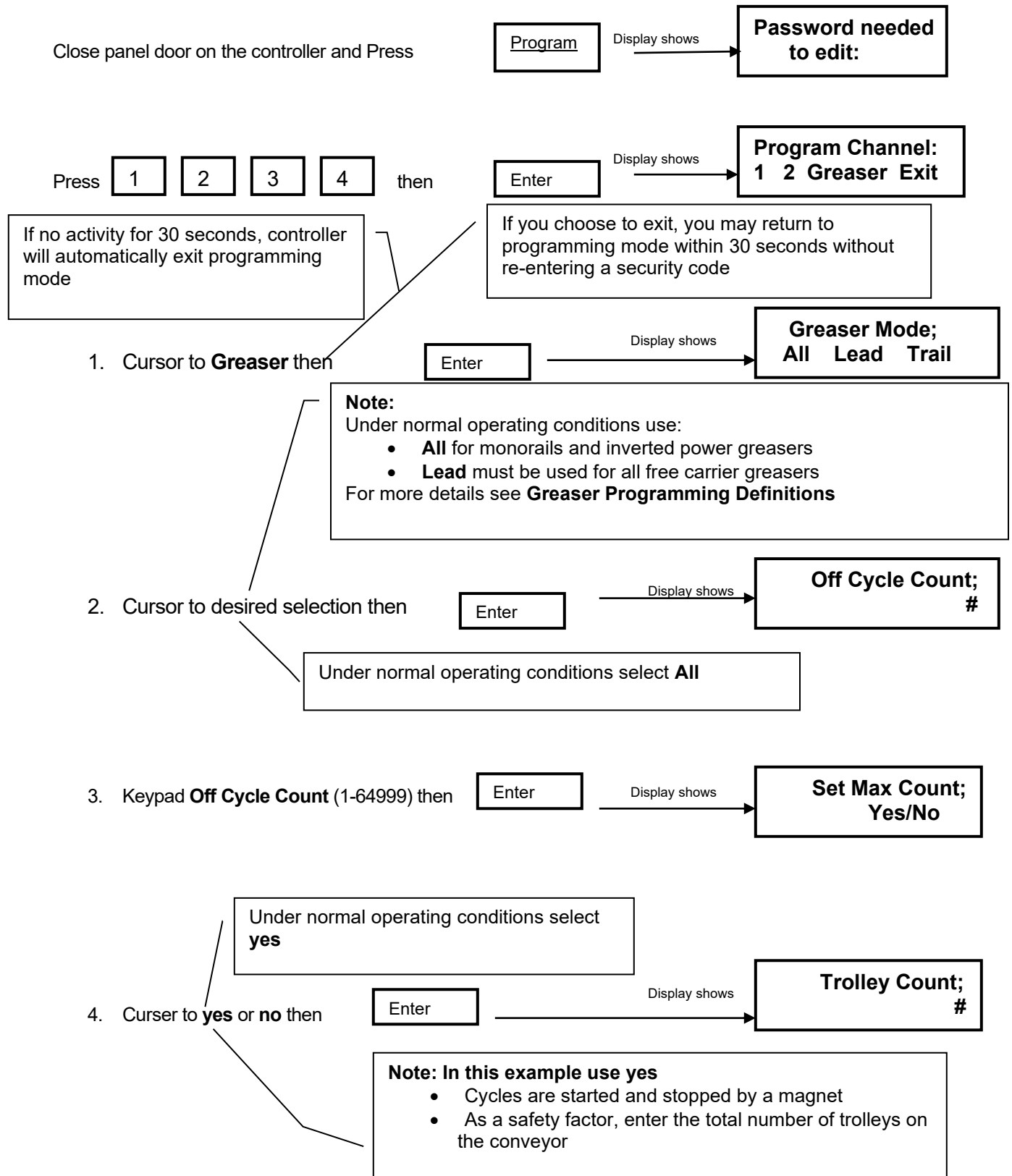


Enable

If a fault condition occurs and that fault is in **enabled** mode, the system shuts down and the display shows a fault.

Override If a fault condition occurs and that fault is in **override** mode, then the system continues to function and the display shows a fault.

SECTION 7 – Greaser Programming Mode



Note:
Trolley Count is the total number of trolley wheels on the conveyor + 5%

5. Keypad the **Trolley Count** (1-64999) then

Enter

Display shows

Dispense Time;
##.###

Note:
Use "**Max Dispense Time**" graph to determine the dispense time

6. Keypad the **Dispense Time** (##.###) then

Enter

Display shows

Retract time;
##.###

.001 = 1 millisecond
01.00.000 = 1 minute
01.04.999 max

7. Keypad the **Retract time** (##.###) then

Enter

Display shows

Lead / trail time;
##.###

Standard **Retract time** should be .10

8. Keypad the **Lead / trail time** (##.###) then

Enter

Display shows

Air press fault;
Enable/Override

Note:
Use "**Lead / trail time**" graph to determine the Lead / trail time

.001 = 1 millisecond
01.000 = 1 second
01.00.000 = minutes
01.04.999 max

9. Cursor to **Enable/Override** and

Enter

Display shows

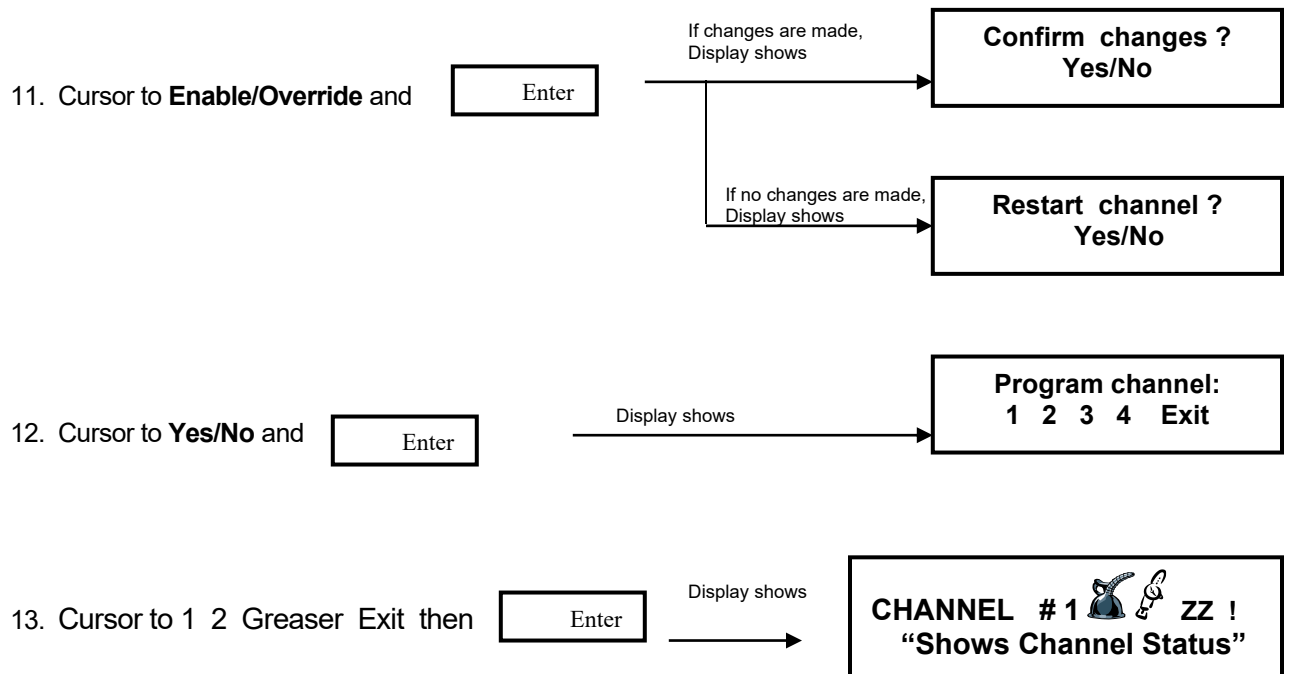
Gr. Press fault;
Enable/Override

10. Cursor to **Enable/Override** and

Enter

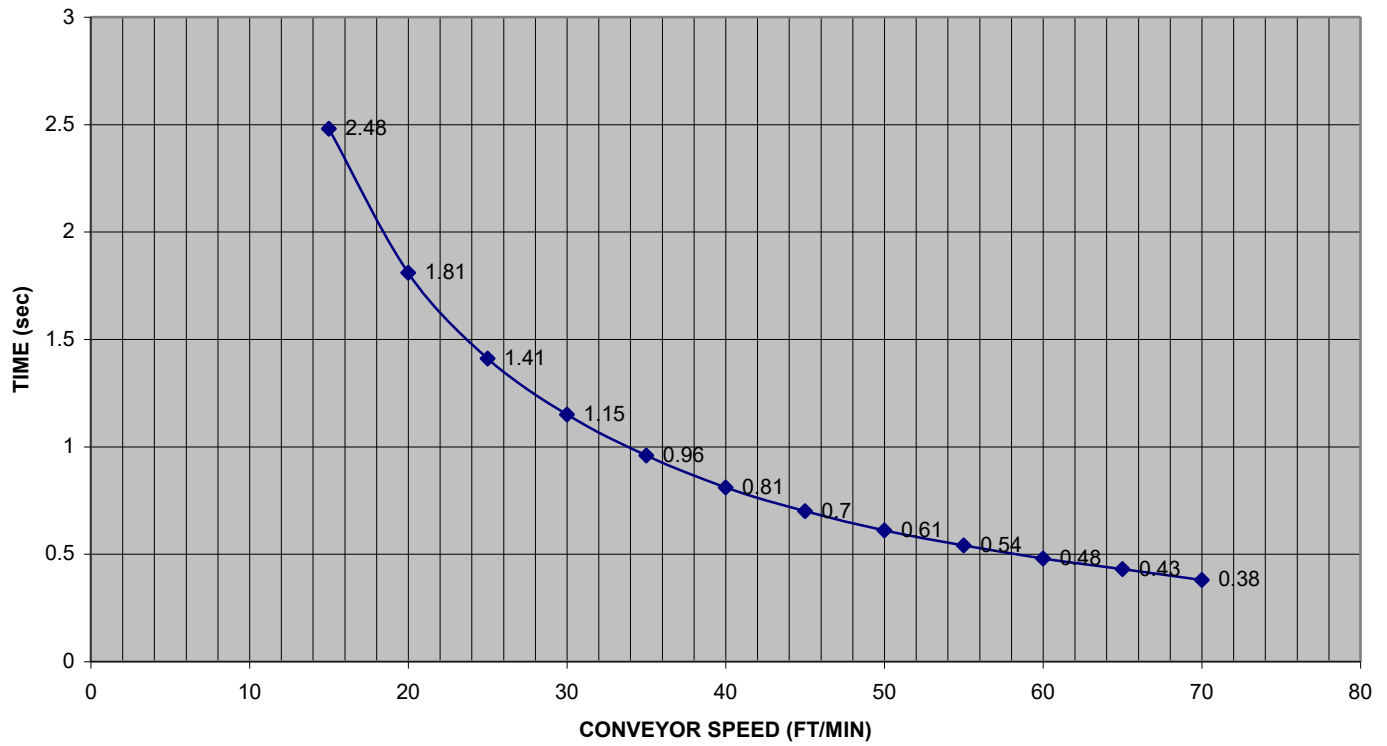
Display shows

Mon – fault shutoff;
Enable/Override

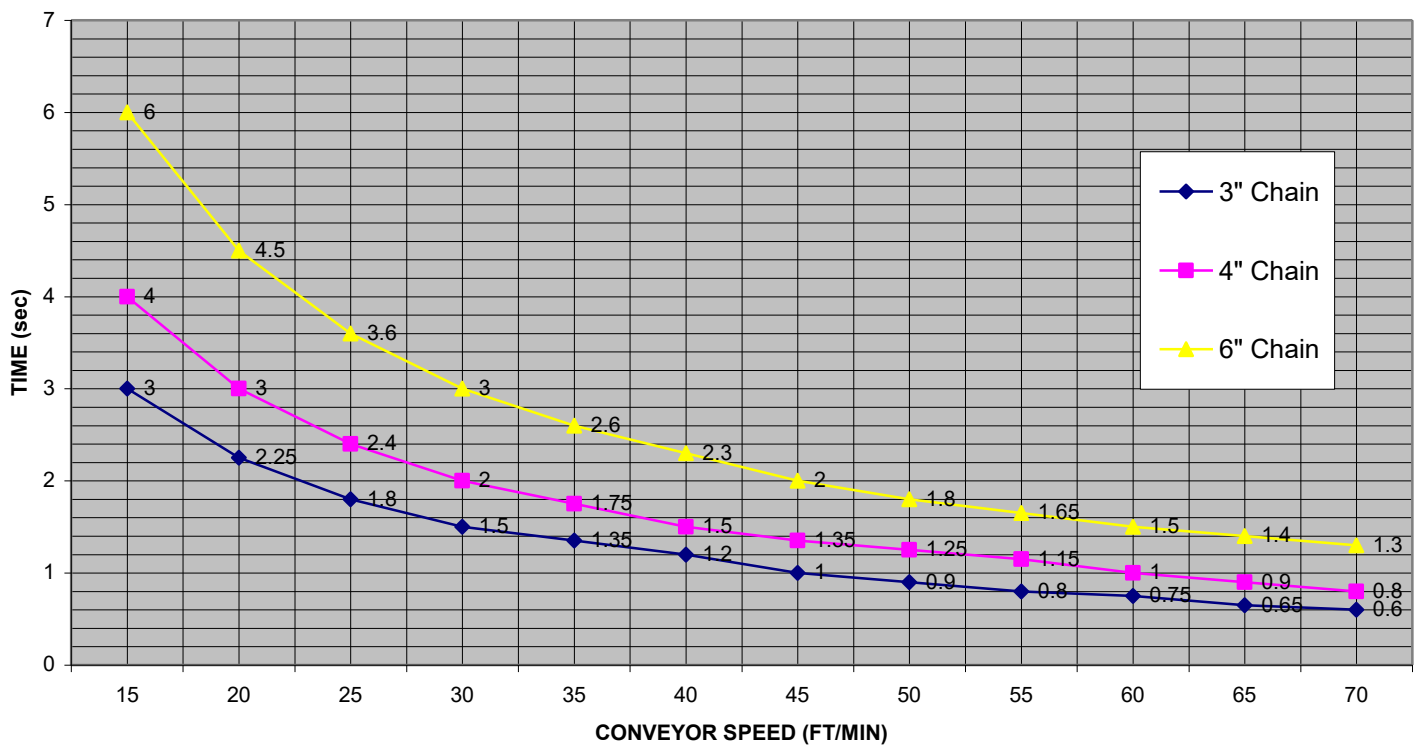


Repeat step numbers 4 – 15 to program other Greaser channels or Exit.

Max Dispense Time

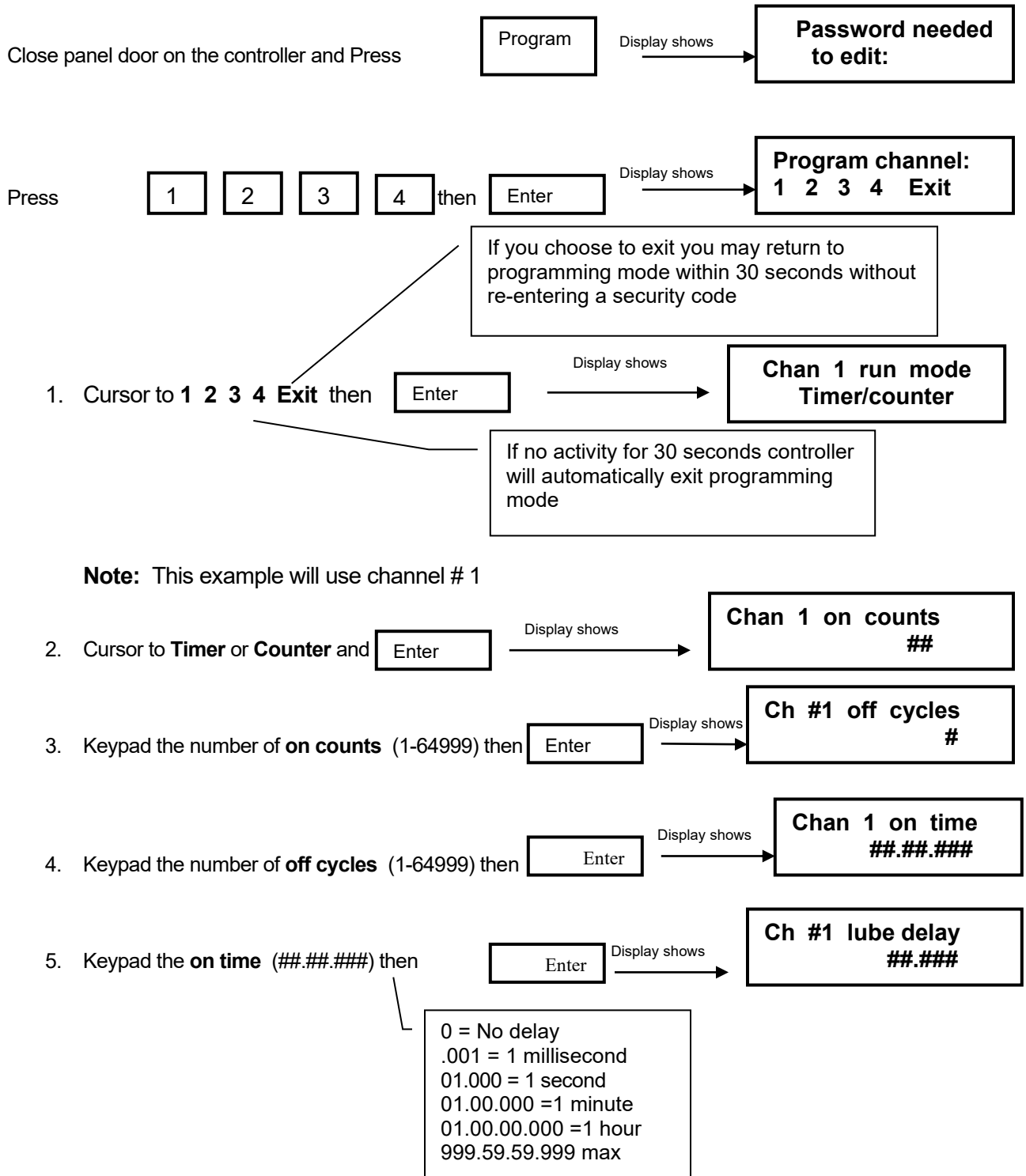


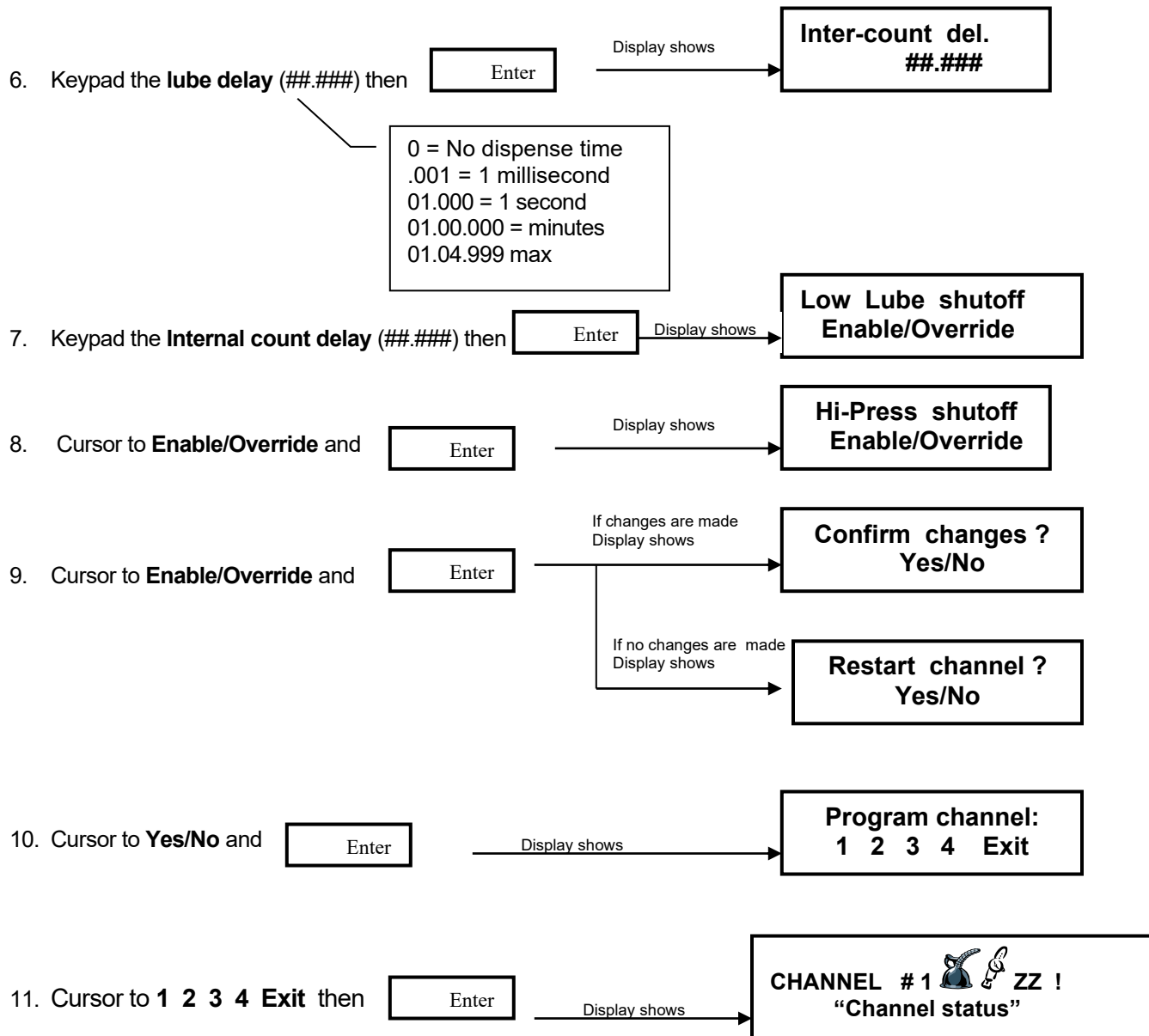
Lead/Trail Time



Lubricator Programming Mode “Counter”

Power – See “Supplying Power ” section for each type of controller

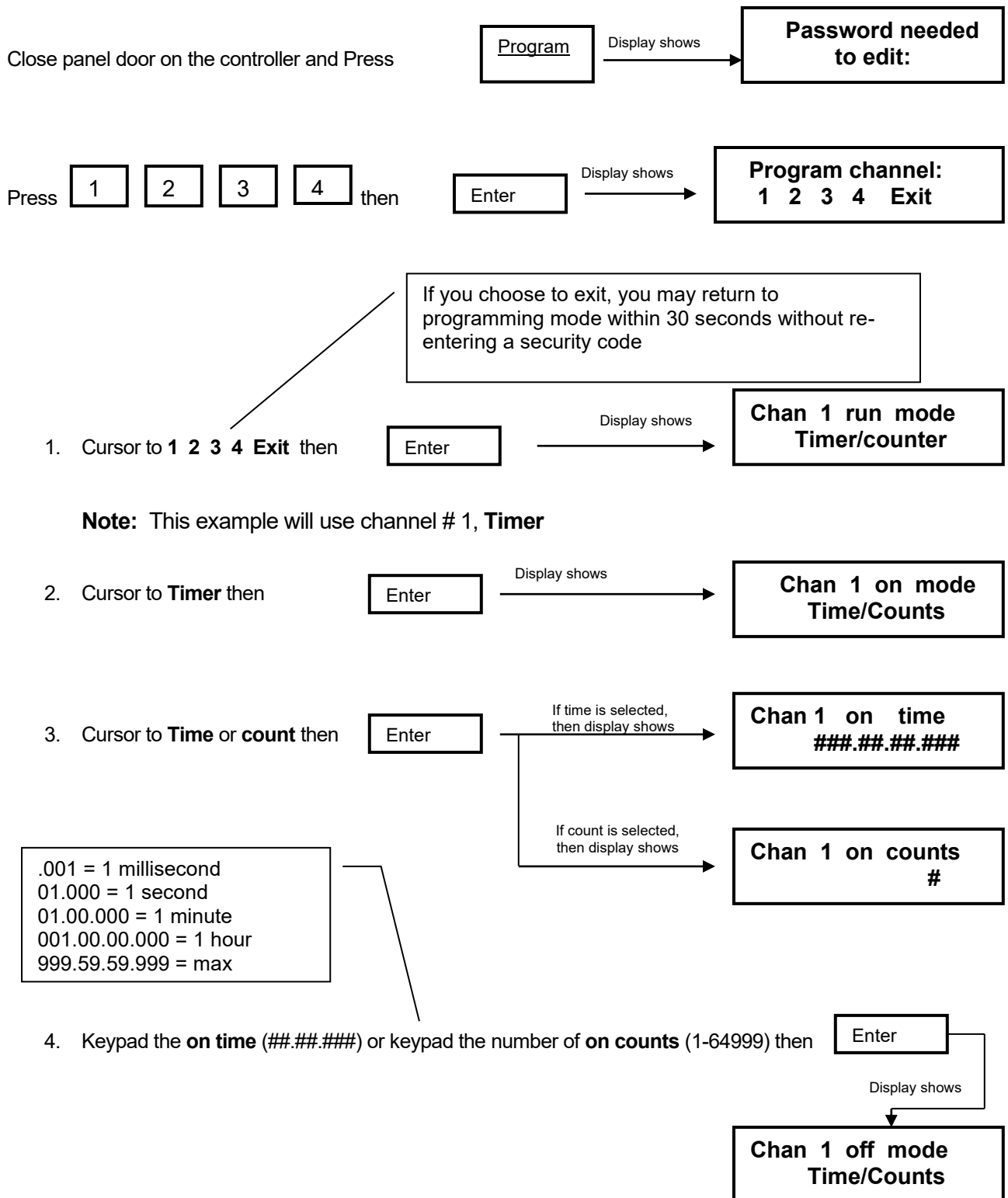


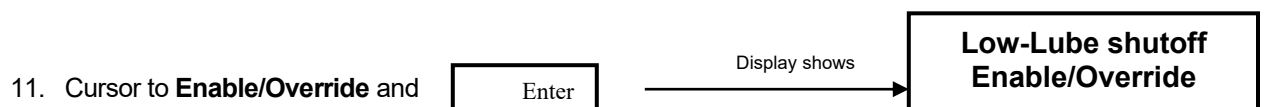
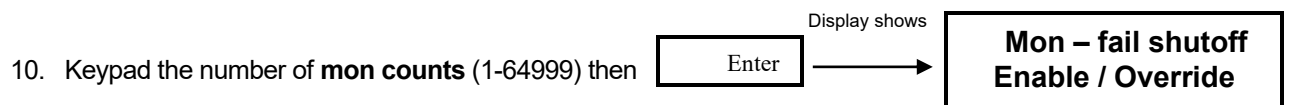
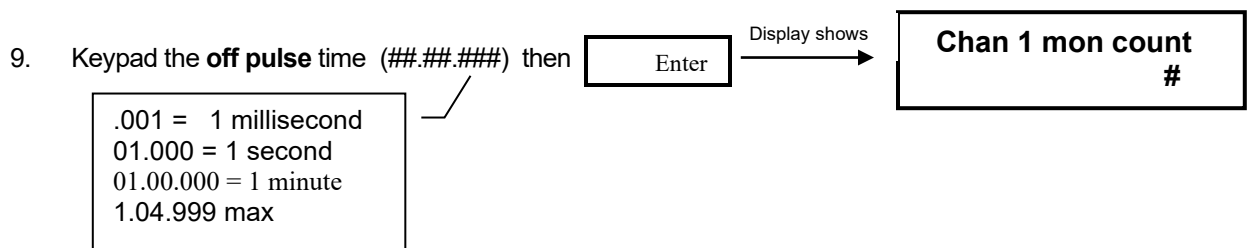
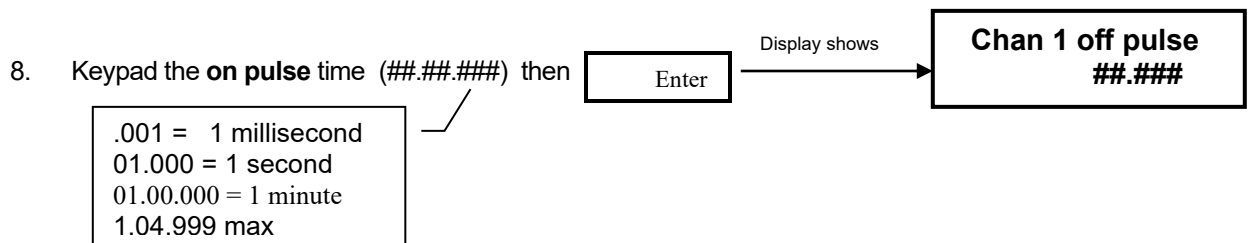
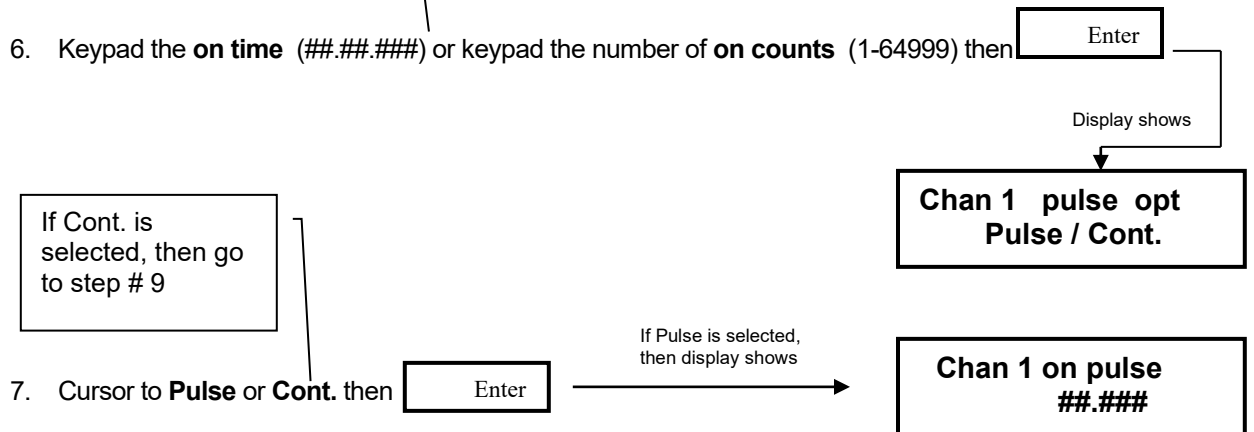
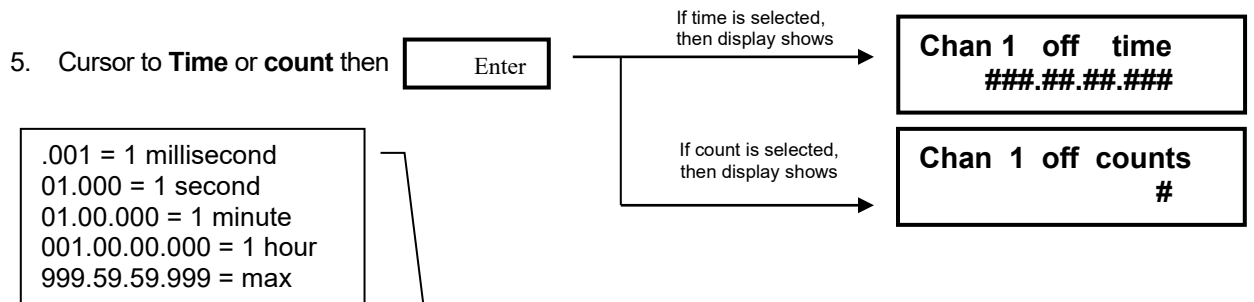


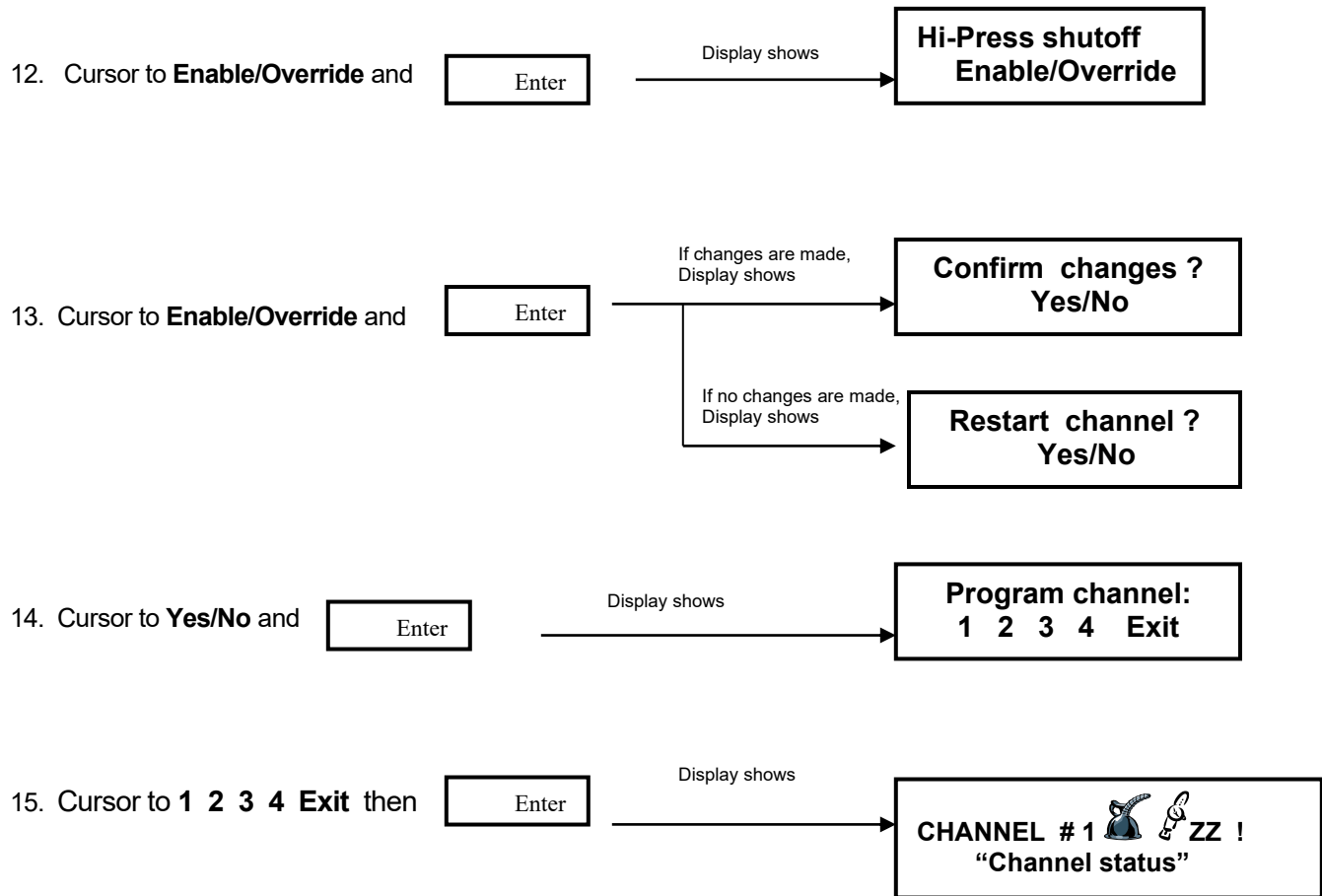
Repeat step numbers 4 – 15 to program other channels or Exit.

Lubricator Programming Mode “Timer”

Power – See “Supplying Power ” section for each type of controller







Repeat step numbers 4 – 15 to program other channels or Exit.

Clearing Faults

If a fault condition occurs the LCD screen and fault light (optional on some models) will indicate that a fault has occurred. The LCD screen will also display the fault type for the channel at fault. Below are listed the fault types and descriptions (see the Troubleshooting Guide for help in solving faults):

Lubricator & Series Progressive System - Faults

- **Low Lube** – Low reservoir fluid. This fault automatically resets upon ample fluid level.
- **High Pressure** – High pressure in lubrication line or system.
- **Monitor** - This fault is normally caused by a cycle monitoring device (e.g. Lubecraft cycle switch) that did not complete a preset number of cycles before going into an off cycle.

Greaser - Faults

- **Air Pressure** – Low air pressure. This fault automatically resets upon ample air pressure.
- **Grease Pressure** – Low grease pressure is usually a result of low or no air pressure, or pump cavitation (air pockets in grease).
- **Monitor** – This fault is normally caused when the carriage assembly is not returned to the home position or did not complete a lubrication cycle correctly. This fault may also occur if excessive bouncing occurs during carriage return.

Upon receiving a fault, first verify the origin of the fault (see troubleshooting section for ideas) and correct. To clear a fault follow the steps below:

1. Press the keypad button labeled “1” or “Fault”
2. Scroll to the channel that has the fault using the arrow left or right keys
3. Press the “Enter” key to check/verify/clear any channel faults
4. If a fault exists a notice will display listing the type of fault. To clear the fault, scroll to “Yes” and press the “Enter” key.
5. If you return to the Check Faults menu after pressing “Enter” then the fault was successfully cleared and you may exit the menu.
6. If you receive a message “Fault input is still asserted”, then the fault has not been corrected and a problem still exists. Fix the problem then repeat the steps above.

SECTION 6 ASSEMBLY DRAWINGS

6.1 OVERALL ASSEMBLY

6.2 CARRIAGE ASSEMBLY

6.3 CARRIAGE ASSEMBLY

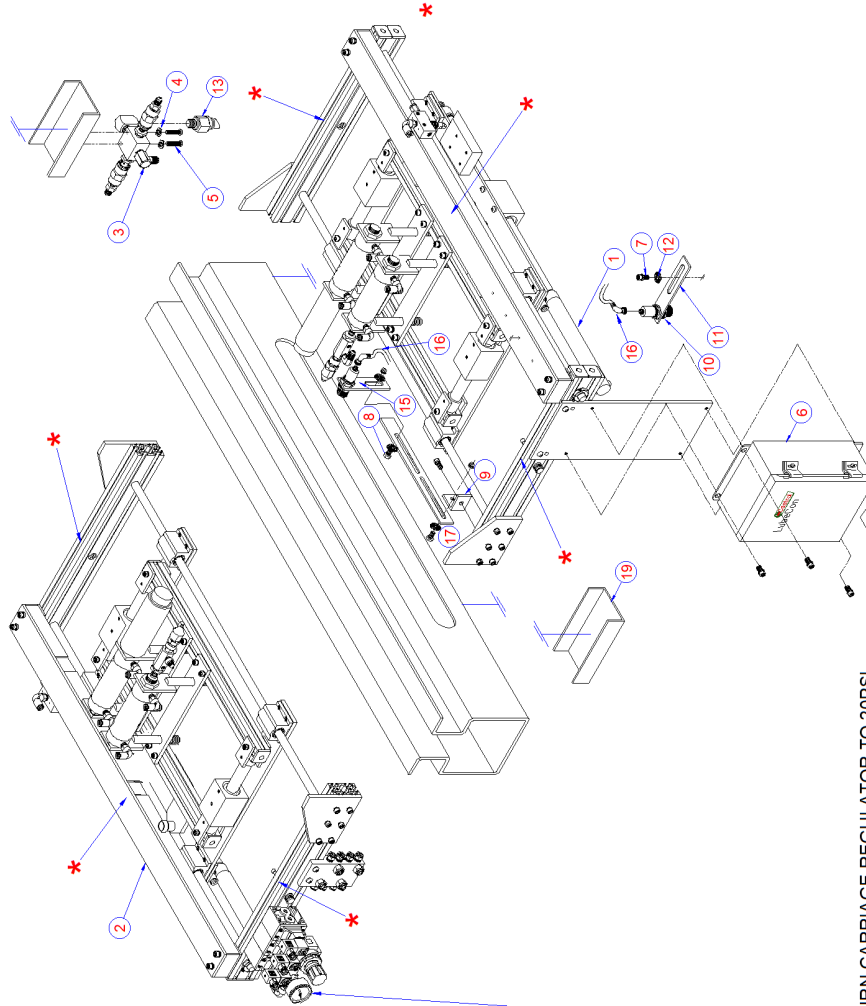
6.4 CYLINDER ASSEMBLIES

6.5 RETURN CYLINDER ASSEMBLY

6.6 VALVE ASSEMBLY

6.7 GREASE PUMP ASSEMBLY

6.1 OVERALL ASSEMBLY



SET RETURN CARRIAGE REGULATOR TO 20PSI
UNLESS INSTRUCTED DIFFERENTLY

ITEM	QUANTITY	COMPONENT	COMPONENT DESCRIPTION	UNIT
1	1	L181366	CRG ASSY,GRSR,LOW PRO PENDULUM RH	EA
2	1	L181367	CRG ASSY,GRSR,LOW PRO PENDULUM LH	EA
3	1	L121325	BLCK ASSY,JCT GRSR,INV MR	EA
4	2	L11108	WASHER,LK 1/4",	EA
5	2	L17431	FSTNR,1/4-20X1 3/8 SHCS,	EA
6	1	L19270	JCT BOX ASSY,GRSR,W/CONN	EA
7	6	L11001	FSTNR,1/4-20X3/8 SHCS,	EA
8	2	L11503	FSTNR,1/4-20X1/2 HHCS,	EA
9	1	L14646	BRKT,ANG CC,1-1/2X1-1/2X1/8X 1	EA
10	1	L112800	SWT,IND PROX 18MM NPN,WITHOUT CBL	EA
11	2	L113408	BRKT,SWT,1/8X1X5"	EA
12	4	L12235	WASHER,STARLK 1/4",INTERNAL-EXTERNAL	EA
13	1	L20083	SWT,PRESS W/RB,1000-3000 PSI,NORM OPEN	EA
14	2	L2403	NUT,1/4-20 KEPS	EA
15	1	L2109	SWT,PHOTO 7"RANGE NPN,WITHOUT CBL	EA
16	2	L22949	CBL,SWT 4 COND 5 METR,RIGHT ANG CONN	EA
17	1	L20145	BRKT,GRSR REFLECTOR,SWT 1/8X1X9-1/4	EA
18	6	L20129	LABEL,GRSR PINCH POINT ,CAUTION,3"X 1"	EA
19	2	L16272-55	HOSE GUIDE, INV MR GSR STAINLESS STEEL*	EA
	2	L20173	HOSE AS,GRS 42", 2 16896 SWN/FLEX	EA
	5	L119603	TBNG,NYL 3/8OD BLK,W/220 PSI/BURST 1000 FT	EA
	40	L18034	TBNG,NYL 1/4"OD BLK	FT

[illegible]

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	DRAWN BY : RP		DATE: 10-16-2020		APPROVED BY :		DRAWING NUMBER: 26174		LubeCon® Phone: 1.800.580.2065	

6.2 CARRIAGE ASSEMBLY

[illegible]

6.2 CARRIAGE ASSEMBLY

ITEM	PART #	COMPONENT DESCRIPTION	QTY
1	L19747	CRG SUB ASSY, GRSR	1
2	L19457	FRAME ASSY, GRSR LH, HSD	1
3	L20048	SHAFT, GRSR, 1/2X3 SS	2
4	L19459	FRAME BAR, GRSR, 1/2 EXTRUSION B1	2
5	L20236	RAMP, PRESS SWT RIR&H, 75X2.37X3.75 UHMW	1
6	L24944	V/LV ASSY, GRSR, 4 WAY M/C	1
7	L19408	COLLAR, SHT, 1/2 D CLAMP ON	4
8	L16109	TUBE, GR, RLUR, 1-1/2 ODDX4-1/2"	1
9	L17322	CLAMP, TUBE HLDR DBL, 1/4 TBNG	2
10	L16128	ROD ASSY, GRSR ROLLER	1
11	L20324	SMT, LIMIT GRSR WDFY 20 DEG BEND	1
12	L23371	CYL ASSY, GRSR GUIDE Z, C/L*	2
13	L20058	CYL ASSY, RTN GRSR, 11" C/L	1
14	L19475	PLT, CYL RTN 3/16X2X17 3/4	1
15	L19568-SS	BKRT CRG M/TG, 1/4X4X4 SS STEEL	2
16	L19774	SMT ASSY, PRESS RELEASE LH	1
17	L23735	NOZZLE ASSY, GRSR FLUSH EXTENDED	1
18	L17320	CLAMP, TUBE HLDR SNGL, 1/4 TBNG	2
19	L11000	FSTNR, 1/4-20X1/2 SHCS	22
20	L11019	FSTNR, 1/4-20X3/8 SHCS	10
21	L24966	DIN CONN ASSY, GRSR 6' COHD	3
22	L19406	SHOCK ABSORBER SELF ADJUSTING, GRSR 9/16	1
23	L22213	PLT BRNG M/TG, 1/4X2 ALUMX14.7	2
24	L17324	T-NUT, 1/4-20 THD	22
25	L11009	FSTNR, 1/4-20X3/4 SHCS	6
26	L19565	BKRT ANCHOR M/TG, 1/4X1HRXS2 GRSR	1
27	L15006	NUT, 7/16"-20 IAN C/L	1
28	L18581	BRNG, MACH, 200X4, 1/2 LINEAL PLW BLK	1
29	L17316	CAP END W/FSTNR 1X1X.125 BLK	4
30	L11006	FSTNR, 1/4-20X3/8 SET CLIP	3
31	L16377	FSTNR, 10-24X 3/4 SHCS	16
32	L18111	NUT, 10-24 HEX	8
33	L1025	WASHER, 1X 410	18
34	L19619	FSTNR, 1/4-20X1 5/8 SHCS	3
35	L11108	WASHER, 1X 1/4"	14
36	L16898	CLAMP HOSE 3/16"(3/8"DIA)	1
37	L19612	FSTNR, 8-32X 1/2 PAN PH MACH SCREW	2
38	L19825	MED ASSY, AIR MR GRSR	1
39	L19622	FSTNR, 10-32X3/8 SHCS	2
40	L3305	WASHER, FLAT 1/4"	3
41	L2403	NUT, 1/4-20 KEPS	4
42	L17355	BKRT, TRACK MNT, 1/8X1X4.4	2
43	L17887	FSTNR, 1/4-20X2 SHCS	4
44	L21518	BELLOW POLYU SEALED, 1 ID, 3 OD, 12" STRETCH	2
45	L23796	COLLAR PILW BLK BRNG 7/8ODX1/2 AL TUBE	2
46	L21564	GUARD, GRSR ROD PVC L, 1/2 HD PVCX14"	2

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REV. DATE:
DRAWN BY :
BP

DATE:
10-16-2020

UNLESS OTHERWISE SPECIFIED

TOLERANCE:
XX ± .02
XXX ± .005
XX ± .132

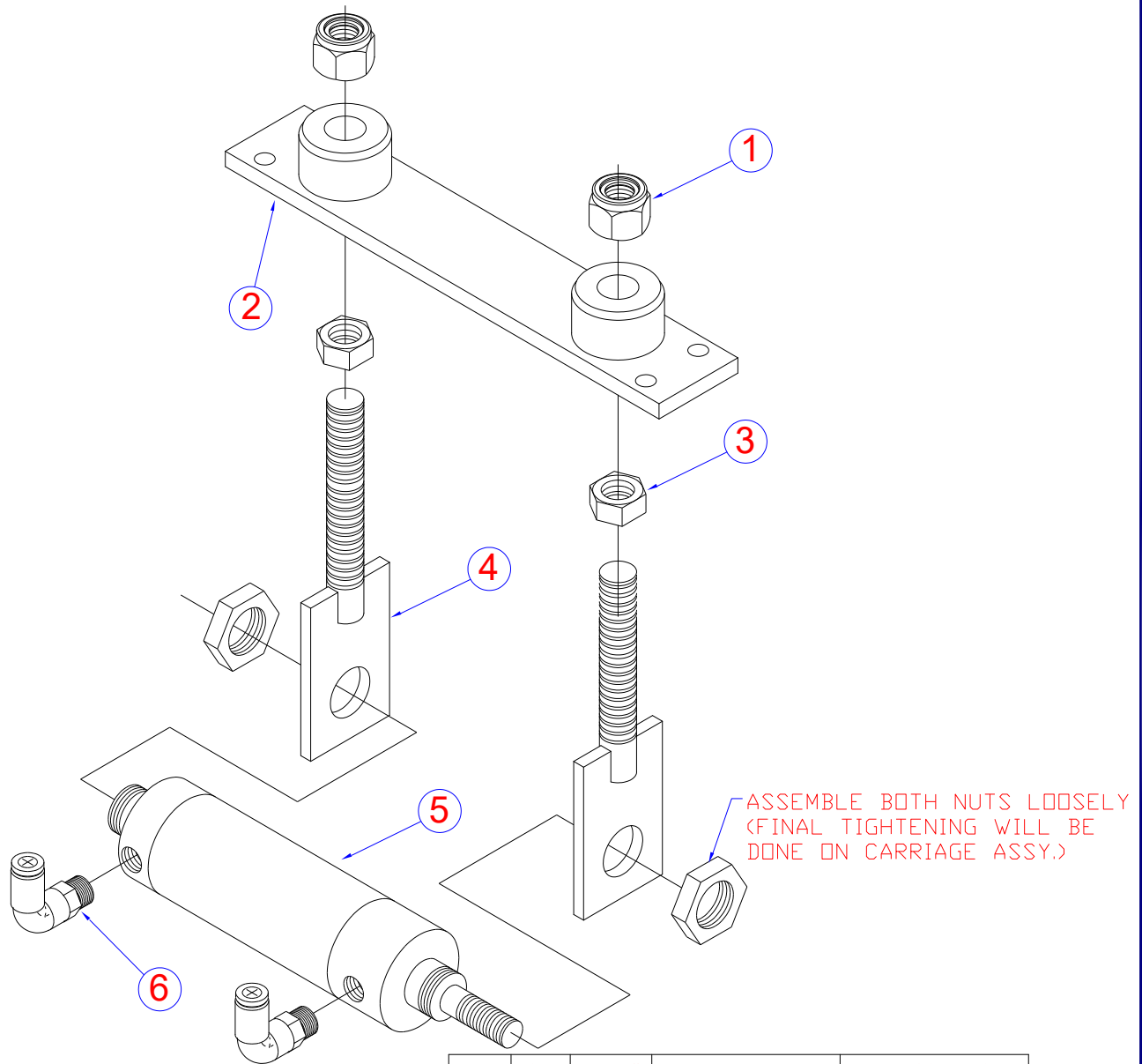
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LEFT HAND CARRIAGE ASSY. LOW PROFILE PENDULUM

Phone: 1-800-582-3266

DRAWING #: 81367

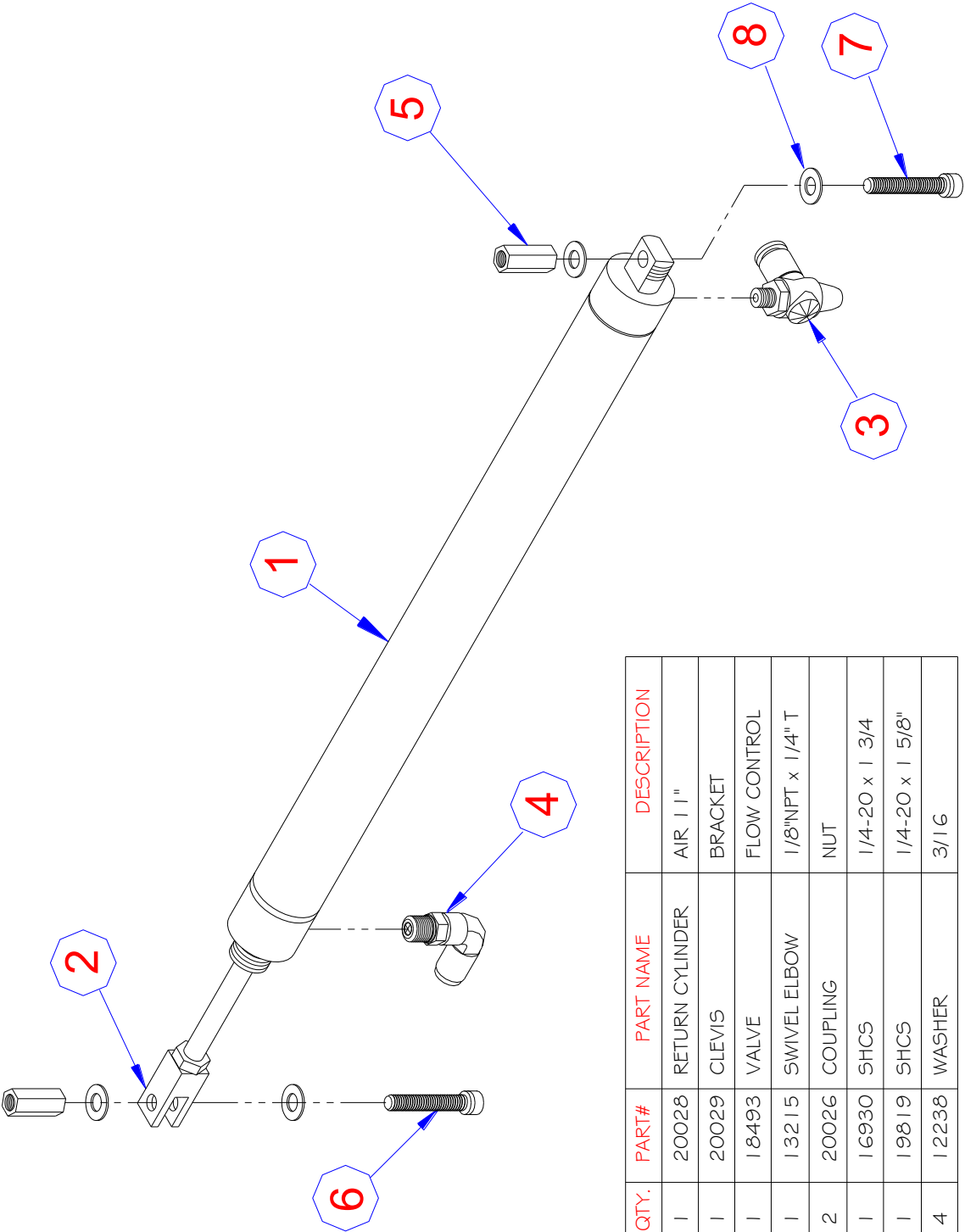
6.3 CYLINDER ASSEMBLY



ITEM	QTY.	PART#	PART NAME	DESCRIPTION
1	2	19447	NYLOCK NUT	1/2-13
2	1	19489	CYLINDER BASE PLATE	WELD ASSEMBLY
3	2	4404	JAM NUT	1/2"-13 THREAD
4	2	19483	MOUNTING BRACKET	CYLINDER ASSEMBLY
5	1	15514	AIR CYLINDER	2" STROKE
6	2	13215	90° SWIVEL FITTING	1/8"NPT x 1/4"T

TOLERANCE: .XX ± .02 .XXX ± .005 X/X ± 1/32	SUPERSEDES: DWG#: DATE:	 Castrol Industrial Americas Phone: 1-800-582-3266 Internet: www.LubeCon.com		CYLINDER ASSEMBLY W/JAM NUT (GUIDE ROLLER)		
DR BY : SAJ	DATE: 9/10/10	REVISED BY :	DATE:	APPROVED BY :	DATE:	DRAWING NUMBER: 23371

6.4 RETURN CYLINDER ASSEMBLY



ITEM	QTY.	PART#	PART NAME	DESCRIPTION
1	1	20028	RETURN CYLINDER	AIR 1 1"
2	1	20029	CLEVIS	BRACKET
3	1	18493	VALVE	FLOW CONTROL
4	1	13215	SWIVEL ELBOW	1/8"NPT x 1/4" T
5	2	20026	COUPLING	NUT
6	1	16930	SHCS	1/4-20 x 1 3/4
7	1	19819	SHCS	1/4-20 x 1 5/8"
8	4	12238	WASHER	3/16

TOLERANCE:

.XX ± .02

.XXX ± .005

XX ± 1/32

DR BY :

SAJ

SUPERSEDES:

DWG#: 20058

DATE: 6/25/01

DATE:

3/26/01

REVISED BY :

SAJ

DATE:

6/6/02

APPROVED BY :

DATE:

DRAWING NUMBER:

20058

Castrol

LubeCon

Castrol Industrial Americas

Phone: 1-800-582-3266

Internet: www.LubeCon.com

RETURN CYLINDER ASSEMBLY

SAJ

DATE:

3/26/01

SAJ

DATE:

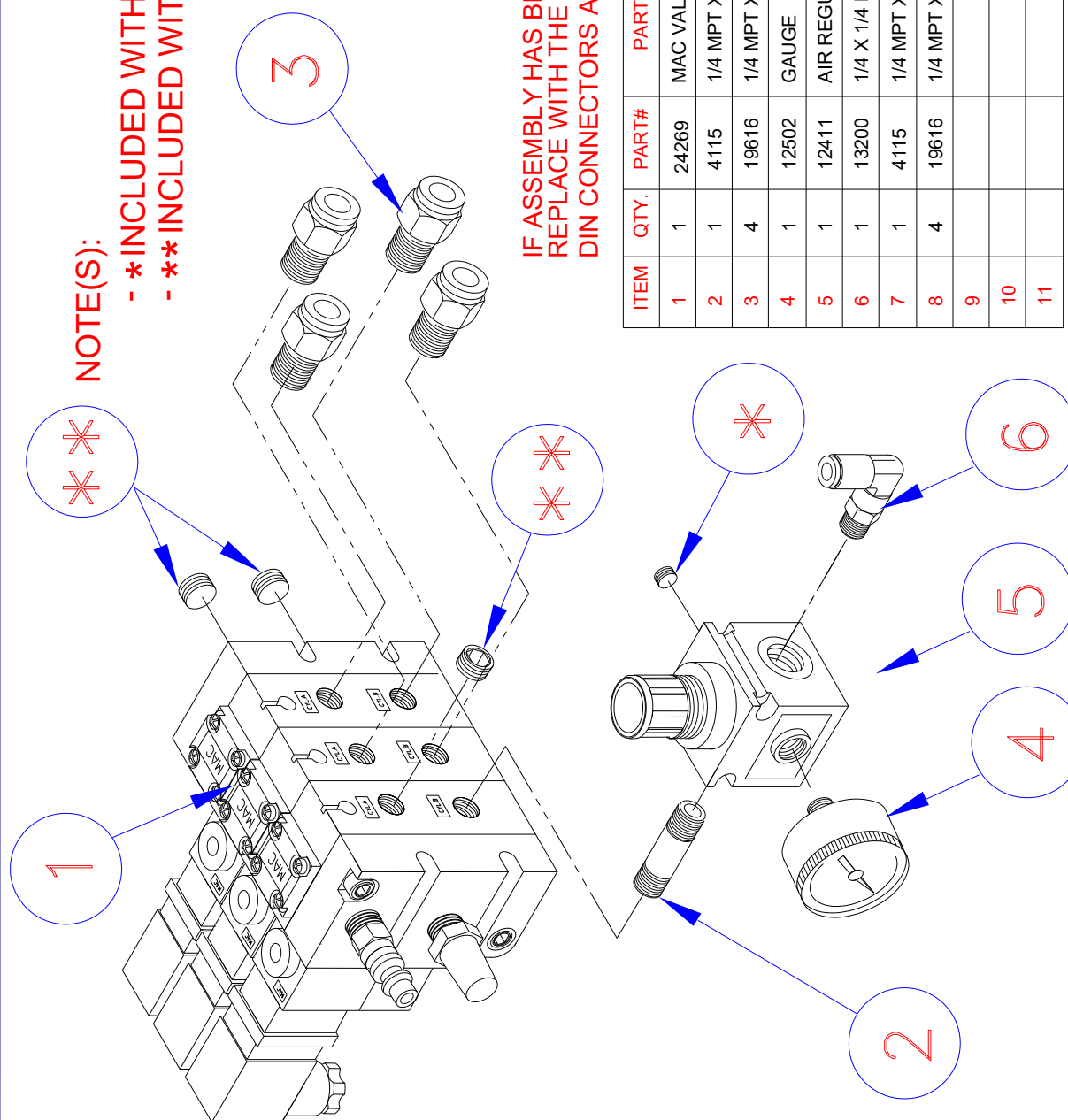
6/6/02

DATE:

DRAWING NUMBER:

20058

6.5 VALVE ASSEMBLY



ITEM	QTY.	PART#	PART NAME	DESCRIPTION
1	1	24269	MAC VALVE ASSY	4 WAY
2	1	4115	1/4 MPT X 2"	NIPPLE
3	4	19616	1/4 MPT X 3/8 T	ASSEMBLY
4	1	12502	GAUGE	1-160 PSI
5	1	12411	AIR REGULATOR	NUMATICS
6	1	13200	1/4 X 1/4 MPT 90	PUSH IN
7	1	4115	1/4 MPT X 2"	NIPPLE
8	4	19616	1/4 MPT X 3/8 T	ASSEMBLY
9				
10				
11				



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REV. DATE:
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TOLERANCE:	SUPERSEDES:
.XX ± .02	DWG#:
XXX ± .005	DATE:
X/X ± 1/32	

DRAWN BY : DATE: 8-26-2014

4 WAY MAC VALVE ASSEMBLY FOR GREASER

DRAWING NUMBER: 24844

6.6 GREASE PUMP ASSEMBLY

NOTE(S):
- TEFLON TAPE ALL FITTINGS.

ITEM	QTY.	PART#	PART NAME	DESCRIPTION
1	1	17221	GREASE PUMP	50:1 RATIO
2	4	2403	NUT KEPS	1/4"-20
3	15	4920	BRAIDED HOSE	1/4"ID X 1"
4	1	22051	HYDRO HOSE SWIVEL	1/8"MP TX 1/4" FPT
5	1	22050	HYDRO HOSE SWIVEL	1/8"MP TX 1/8" FPT
6	1	21300	REGULATOR	AIR
7	1	12502	PRESSURE GAUGE	AIR
8	1	13213	HOSE FITTING	1/8" MP TX 1/4"
9	1	14412	HOSE COUPLER	1/4" NPT
10	1	14408	MALE COUPLER	1/4" AIR
11	1	7313	HEX NIPPLE	1/4" HI-PRESS
12	1	12411	REGULATOR	-
13	1	16809	PIPE PLUG	1/8"
14	1	14410	FEMALE COUPLER	1/4" AIR
15	1	19677	PUMP CONTROL	VALVE ASSY
16	2	21184	REG. BRACKET	-
17	1	21521	RING	MOUNTING
18	1	18438	STREET TEE	FITTING, 1/4"NPT
19	1	16342	ELBOW 90°	1/4"MP TX 1/4" FPT
20	4	21494	PUSH BARB	1/4"MP TX 1/4"
21	2	4920	2@1 FOOT	1/4"MP TX 1/4"
22	1	18596	3/8 PIPE NIPPLE	HIGH PRESSURE
23	1	20773	FILTER STRAINER	3/8" FPT, 5000 PSI
24	1	81240	FOLLOWER PLATE	WEIGHTED

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APPROVED BY :

SUPERSEDES:
DWG#: 19676
DATE: 7/29/08

TOLERANCE:
.XX ± .02
.XXX ± .005
X/X ± 1/32

DRAWN BY:
RW H

DATE:
12/1/99

35 LB GREASE PUMP ASSEMBLY

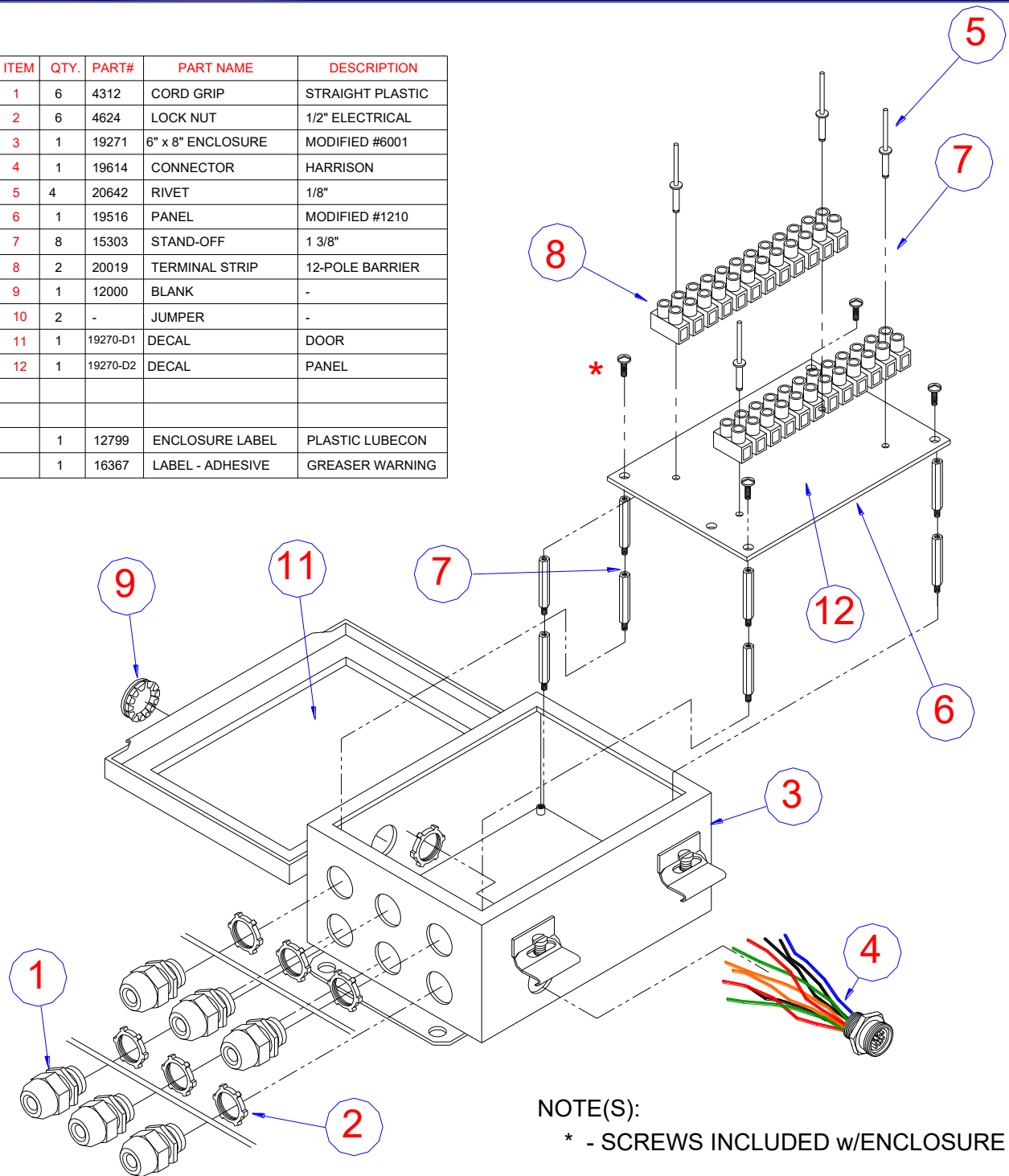
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SECTION 7 WIRING SCHEMATICS

7.1 GREASER JUNCTION BOX

7.1 JUNCTION BOX SCHEMATIC

ITEM	QTY.	PART#	PART NAME	DESCRIPTION
1	6	4312	CORD GRIP	STRAIGHT PLASTIC
2	6	4624	LOCK NUT	1/2" ELECTRICAL
3	1	19271	6" x 8" ENCLOSURE	MODIFIED #6001
4	1	19614	CONNECTOR	HARRISON
5	4	20642	RIVET	1/8"
6	1	19516	PANEL	MODIFIED #1210
7	8	15303	STAND-OFF	1 3/8"
8	2	20019	TERMINAL STRIP	12-POLE BARRIER
9	1	12000	BLANK	-
10	2	-	JUMPER	-
11	1	19270-D1	DECAL	DOOR
12	1	19270-D2	DECAL	PANEL
	1	12799	ENCLOSURE LABEL	PLASTIC LUBECON
	1	16367	LABEL - ADHESIVE	GREASER WARNING



TOLERANCE:

.XX ± .02
.XXX ± .005
X/X ± 1/32

SUPERSEDES:

DWG#: 19270
DATE: 10/10/01



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GREASER 2000
I/O JUNCTION BOX ASSY

DR BY:

TEH

DATE:

4/7/99

REVISED BY:

SAJ

DATE:

2/6/03

APPROVED BY:

DATE:

DRAWING NUMBER:

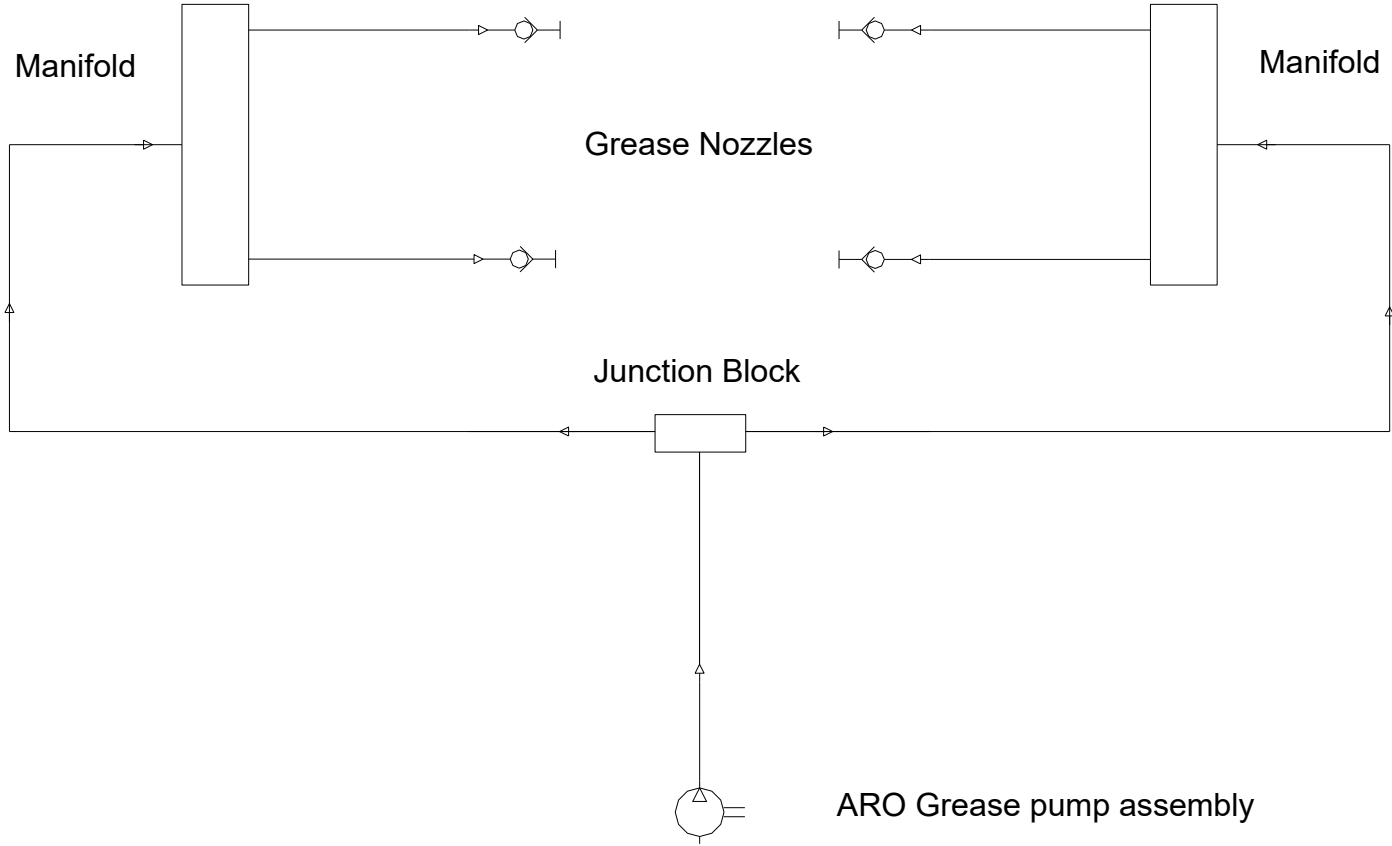
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SECTION 8 HYDRAULIC AND PNEUMATIC DRAWINGS

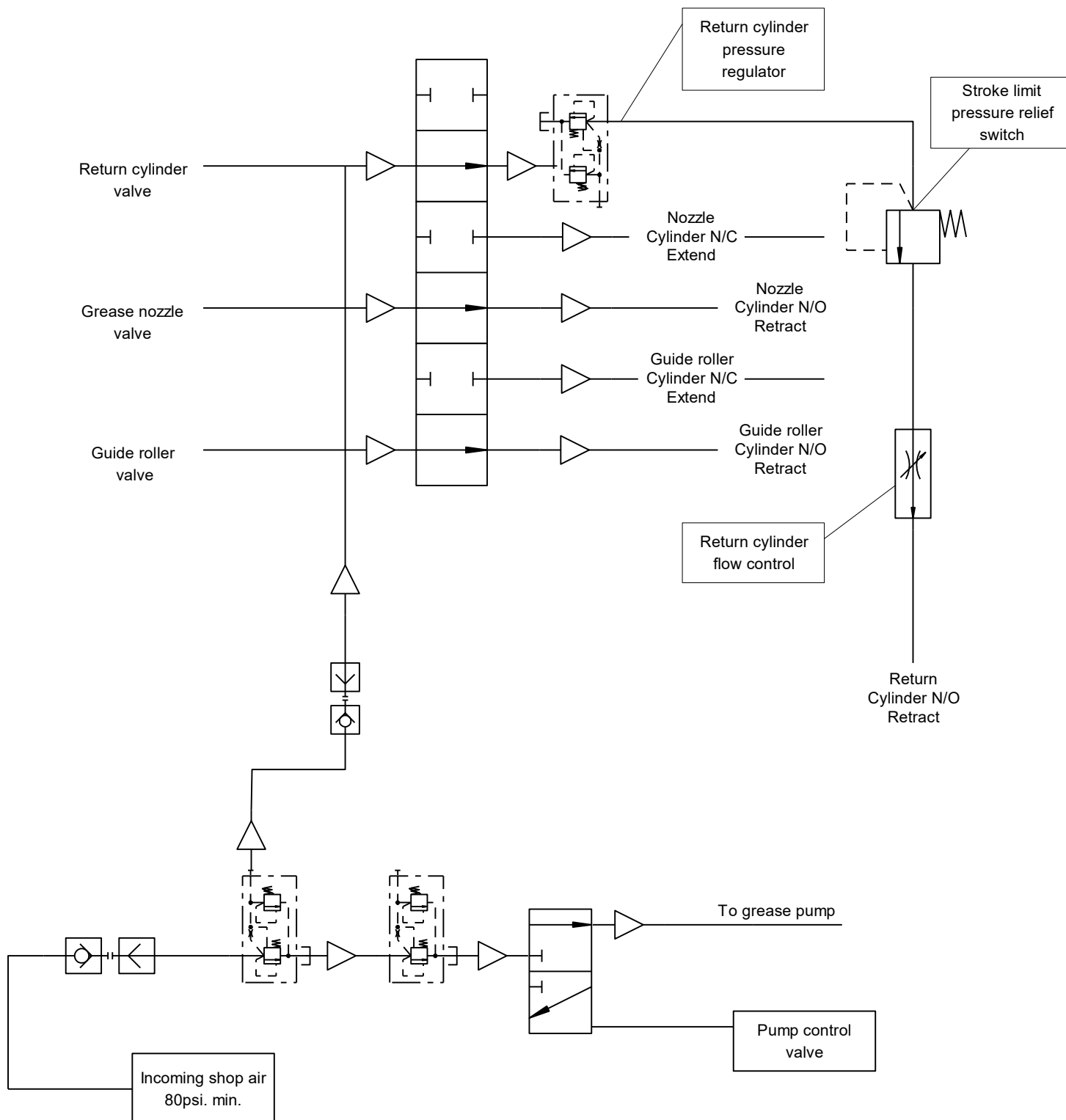
8.1 HYDRAULIC SCHEMATIC

8.2 PNEUMATIC SCHEMATIC

8.1 HYDRAULIC SCHEMATIC



8.2 PNEUMATIC SCHEMATIC



SECTION 9 TROUBLESHOOTING GUIDE

LubeCon Automatic Trolley Wheel Greaser

Symptom	Possible cause	Corrective action
Greaser won't start	Power is turned off	Check for lockout tag and then turn power on
	Controller is not programmed correctly	Check program settings against owners manual
	Controller is in a fault condition	Check for and clear fault
	Greaser is in an off cycle	Reset on cycle(see SmartLube 2000 manual)
	Photo switch is not seeing trolley	Clean or adjust switch as needed
Greaser won't go into off cycle	Greaser has not finished on cycle	Reset off cycle(see SmartLube 2000 manual)
	Bad controller board	Replace controller board
Not getting grease into trolley	Out of grease in reservoir	Refill reservoir with proper lube
	Insufficient dispense time	Increase dispense time (see SmartLube 2000 manual)
	Nozzles are mis-aligned	Realign nozzles to the same centerline as zerk
	Insufficient system air pressure	Increase system air pressure to 80 PSI.
	Insufficient air pressure on grease pump	Increase pump pressure to 45 PSI.
	Defective or worn nozzle assembly	Replace grease nozzle assembly
Greaser is crashed/kicked out	Excessive dispense time	Decrease dispense time (see SmartLube 2000 manual)
	Cylinder rods are bent and stuck out	Check for and replace bad cylinder
	Defective trolley wheel in system	Monitor system to identify defective trolley
	Valve stuck open	Replace valve

Symptom	Possible cause	Corrective Action
Grease leaks around zerk	Nozzles are mis-aligned Defective zerk fitting on trolley wheels Excessive dirt on trolley wheels Damaged or defective grease nozzle tip Defective check valve in grease nozzle	Realign nozzles so they are on same center as zerk Monitor system to identify defective trolley Cleanup the system Replace defective grease nozzle tip Replace grease nozzle assembly
Monitor fault keeps coming on	Insufficient system air pressure Flow controls are turned down to far Home switch is not sensing carriage Carriage assemblies are binding Home switch is not adjusted correctly	Increase system pressure to 80 psi. Adjust to allow carriage to return faster Hold screw driver against switch tip to check Clean and lubricate carriage shafts Adjust switch out and down as needed
Grease pressure fault keeps coming on	Insufficient air pressure on grease pump Pressure switch is set to high Pressure switch is wired incorrectly	Increase pump pressure to 45 psi. Adjust pressure switch to lowest setting Rewire switch to be normally open
Greaser won't switch from lead to trail trolley	Controller has incorrect program Switch is not reading magnet Controller has incorrect time parameter	Reprogram for "All" (see owners manual) Clean or adjust switch to within 3/8" of magnet Reset time parameter for correct chain speed

Symptom	Possible causes	Corrective action
Excessive grease in drip pan	Grease nozzles are mis-aligned	Re-align nozzles so they are on same center as zerk
	Grease nozzles are not sealing	Replace grease nozzle assembly
	Damaged grease nozzle	Replace grease nozzle assembly
	Damaged grease zerks	Monitor system to identify defective trolley
	Hose leaking	Tighten or replace damaged hose
	Fittings leaking	Tape and/or tighten fitting. Replace defective fittings
Greaser functions erratically	Switch input signals are erratic	Clean or adjust switch to ensure accurate signal
	Air valves are not shifting properly	Clean or replace dirty valve. Filter incoming air supply
	Bad controller board	Replace controller board
Carriage won't return	Carriage assemblies are binding	Clean and lubricate carriage shafts
	Flow controls are turned down too far	Adjust to allow carriage to return faster
	Carriage rods are bent	Replace damaged carriage rods
	Valve is not shifting	Clean or replace dirty valve. Filter incoming air supply
	Pressure release switch has been made	Re-position switch ramp so it won't make until overtravel

SECTION 10 RECOMMENDED SPARE PARTS

<u>Quantity</u>	<u>Part Number</u>	<u>Description</u>
1	23735	Zerk nozzle assembly
1	16128	Guide roller assembly
1	19606	Shock absorber
1	15514	Air cylinder
1	19446	Spring

SECTION 11 LIMITED WARRANTY

LIMITED WARRANTY

Your LubeCon lubrication system is pre-tested and guaranteed to be in perfect condition when it leaves our factory. The system is fully guaranteed against defective materials or workmanship for a period of twelve months from the date of purchase. Any portion of the lubrication system which should fail for either of the above reasons, (excluding) normal replacement parts such as indicator light bulbs, fuses, etc., and still within the warranty period, will be repaired or replaced at our option, if the service is performed by a LubeCon Serviceman. All defective parts returned for warranty service will be fully inspected to determine cause of failure before warranty is approved. Our warranty is limited to the obligation to repair or replace our equipment only.

This warranty gives you specific legal rights and you may have other rights that vary from state to state.

The LubeCon warranty will be void if any of the following conditions are found to exist relative to the LubeCon equipment:

- Electronic components tampered with or short-circuited.
- System abuse by customer; customer's equipment malfunctions; customer's equipment is maladjusted.
- Damage caused from voltage, environmental conditions, or exceeding the specified viscosity range.

Replacement parts and fields service are available to the customer should they so desire. Contact the LubeCon office for service scheduling, rate and/or replacement costs.

SECTION 12 AIRLINE INSTALLATION INSTRUCTIONS

INSTRUCTIONS FOR THE INSTALLATION OF AIRLINE LUBRICATOR ON GREASERS

Installation

Check prior to installation, whether the preceding airline is free from dirt (scale, loose rust, etc.) and blow through if necessary.

Installation should be immediately prior to the actuator, if possible.

If the distance between lubricator and actuator exceeds 5 meters (16 ft.), it is recommended that the end of the airline adjoining the actuator is wetted with a small quantity of oil before initial operation.

Note the arrow for direction of flow on the lubricator body.

Observe temperature and pressure limitations for the bowl materials (see diagram).

The axis of the bowl must be vertical.

The plastic bowl and sight glass must not come into contact with aggressive chemicals (see list in last paragraph) in either liquid or vapor form (e.g. nitro cellulose vapor from paint spraying).

For safety reasons it is recommended that bowl and sight glass be replaced in periodical intervals (approx. 5 years).

In the case of aggressive media use metal bowls and sight glasses of chemically resistant materials.

Operation

Fill with oil (see recommended oils). Turn on air pressure.

Turn the screw of the oil needle valve with a screwdriver during operation of the actuator downstream until the required oil as seen in the sight glass, is added.

More oil: Turn screw anti-clockwise

Less oil: Turn screw clockwise

Important

1. Minimum number of drops: approx. 3 drops/min.
2. Check whether oil isn't still being supplied with the smallest actual flow (for minimum quantity see minimum number of drops).

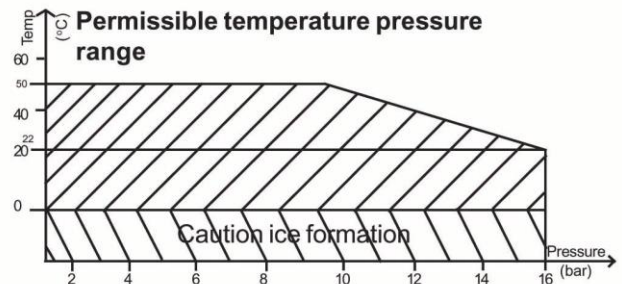
Maintenance

Check content of oil in bowl and replenish if necessary. (The oil siphon tube must always be immersed in oil.)

Use recommended oils only. Viscosity VG 32 acc. To ISO 3448 (32 mm²/S at 40° C)

Cleaning

Clean bowl only with cold or hot water using normal household detergents.



Attention: Type MLS – 10 bar maximum pressure.

Chemicals, which attack the plastic bowl

Acetone, benzole, brake fluids, chloroform, acetic acid, glycerine, alcohol, carbon disulphide, trichlorethylene, perchlorethylene, carbon tetrachloride and similar compounds, toluene, xylene (nitro cellulose thinners), fire resistant synthetic oils (e.g. phosphate ester based etc.). Particulars of other aggressive chemicals on request.

Greaser Preventative Maintenance Check List

Greaser maintenance should be performed on conveyors during scheduled down time
(conveyor is not to be moving during maintenance)

Disconnect air and power before servicing!

Observe pinch point locations before attempting any maintenance

When above precautions have been observed carefully move carriage into
breakaway position.

1. Carefully wipe down shafts of main carriage assembly look for any signs of damage.
2. Carefully wipe down shafts of break away carriage look for any signs of damage
3. Check operation of cylinders for guide rollers look for damage or binding during manual operation
4. Check operation of cylinders for nozzles look for damage or binding during manual operation.
5. Look for worn, pinched or abraded hoses and airline supply tubes . If any of the conditions are found repair and note occurrence
6. Check return cylinder shafts for signs of wear or damage, check for binding by manually operating the cylinder.
7. Check cam followers on guide roller, make sure they are clean and check for smooth operation
8. Check screws and fittings for proper torque and adjustment (note anything unusual)
9. Move carriages into the home position, check for smooth operation. Removal of all sludge and contaminants is critical.
10. Check alignment of nozzles and guide roller on trolley (Static)
11. Inspect grease pump for any signs of wear or damage or leaks (hoses and fittings) check grease level (fill if needed)
12. Check FRL, Clean filter, check oil level in lubricator (add manufacturers specified oil if necessary.)
13. Check pneumatic safety switch for any binding, and proper operation
14. Manually check the carriage break away function, adjust if needed
15. Check carriage return shock absorber for proper operation. Replace if faulty.
16. Clean photoeye and reflector with soft clean cloth, check inductive switch and clean.
17. Check and record air pressure once greaser is returned to service. Supply regulator Greaser Pump regulator

- If greaser passes inspection prepare greaser to return to service
- If greaser is not ready for operation properly lock and tag out greaser. Then notify proper personnel to make repairs
- Please list any problems or concerns you may have encountered during this PM

Date _____ Time _____ Service Performed By _____