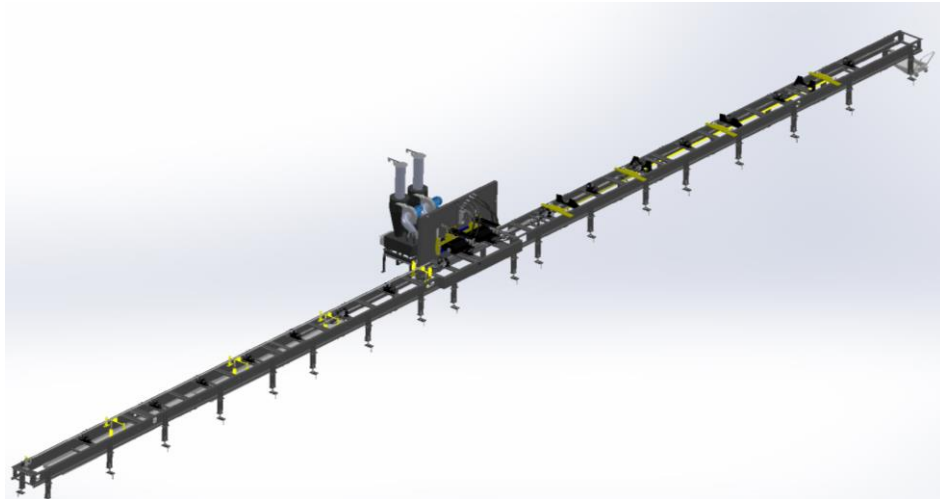




**HUB CITY  
IRON WORKS**

# PCM-7625 R2/R3

## Operation and Maintenance Manual



Hub City Iron Works  
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Rayne, LA 70578  
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Rep Phone # \_\_\_\_\_  
Document # \_\_\_\_\_

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Call: 337.334.6969

Visit: [www.hubcityironworks.com](http://www.hubcityironworks.com)

### Sales

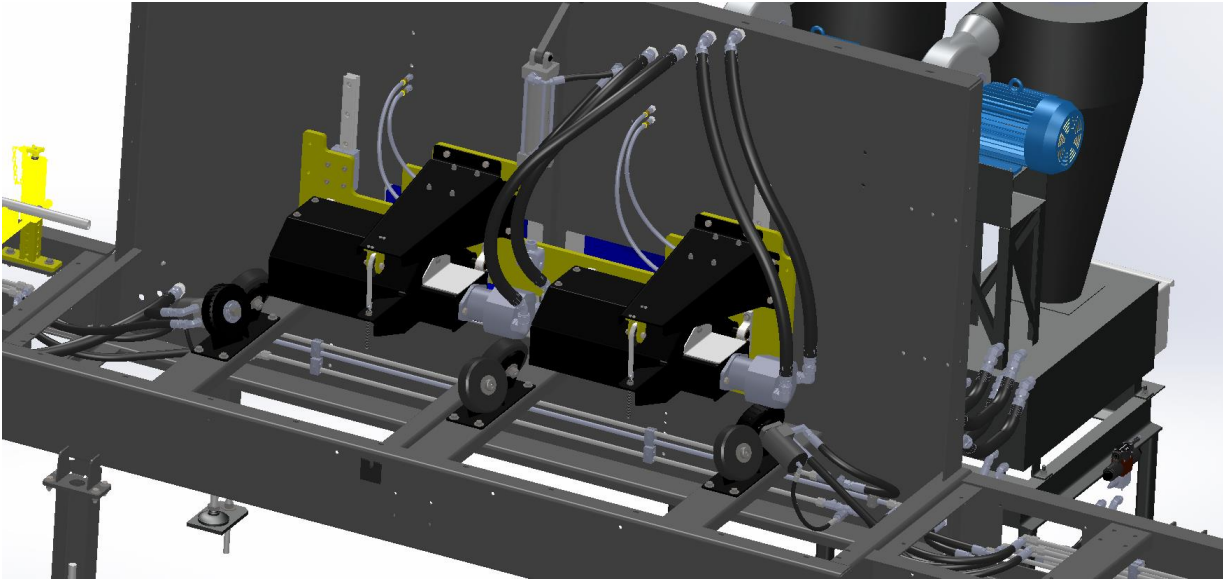
Call: 337.334.6969

Email: [sales@hubcityironworks.com](mailto:sales@hubcityironworks.com)

## Introduction

### PCM7625 Pipe Cleaning Machine

The Hub City Iron Works PCM 7625 provides OD and ID cleaning for oilfield tubing, drill pipe and sucker rods. It comes equipped with steel brushes for cleaning the OD of the pipe and a rattling motor for ID scale removal. The robust design has repeatedly proven itself to be a reliable and effective product that meets the demands of today's harsh work environments.



## Safety

Hub City has provided operating procedures and safety information to ensure the wellbeing of both the operator and the equipment.

This operating manual contains important safety information - please read it thoroughly.

### Safety Features Include:

- Mechanically active components are painted a high visibility yellow.
- Low oil level indicator protects machinery in the case of a hydraulic line rupture and limits environmental impact.
- Low voltage operator interface (24vdc)
- Equipment safety labels.



## Machine Specifications

### Standard Features

- Dual wire brush for outside diameter cleaning
- Lance for inside diameter cleaning
- Dual hydraulic power supply
  - One hydraulic pump for conveyor motors & auxiliary equipment
  - One for wire brushes
- Range 2 pipe
- Left or right hand pipe loading configuration

### Optional Features

- Outside diameter descaler
- Grip enhancer
- Range 3
  - Accommodates pipe lengths up to 48'
  - 24' added to overall length of machine

### Specifications

Category	Min Tube OD	Max Tube OD	Max Tool Joint OD
Drill Pipe/ Tubing	2.-3/8"	6-5/8"	8-1/2"
Casing	4-1/2"	7-5/8"	8-1/2"
NOTE: Conveying performance can be diminished by larger pipe sizes and water blasting			

- Overall length 84' (114' for R3)
- Width 30"
- Height 7'
- Drive station spacing 6' (4' option available)
- Weight 7,000 lbs. (Max Gross Weight)

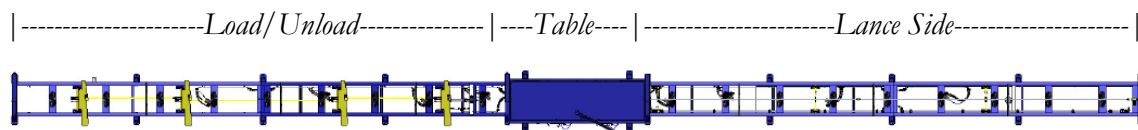
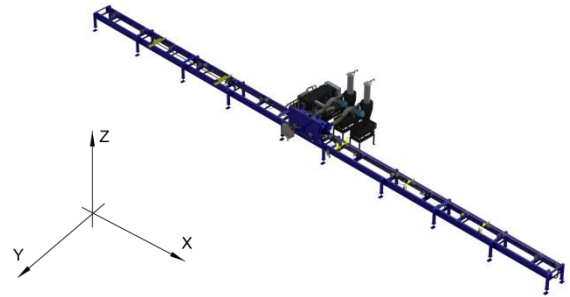
### Pipe Plant Requirements

- Electrical 230/480V, 3 Phase, 60 Hz (Others available upon request)
- Compressed air 100 PSI Plant Air System Required @ 150 CFM
- Rack height 36"- 44"

## Machine Setup

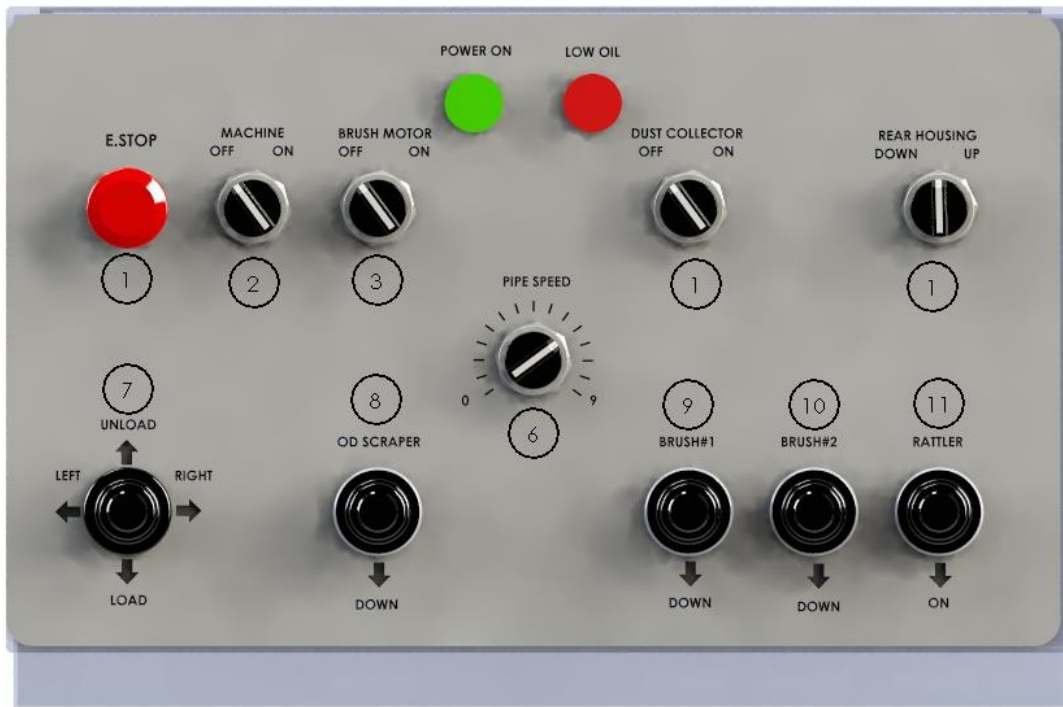
For proper operation, the machine must be installed straight, coplanar and horizontally level.

1. Remove the lance if it is installed on the machine.
2. Position frame components and loosely bolt them together.
3. Level the machine in the Z direction. To do this, establish a base line from a stationary object (such as installed pipe racks) and adjust the frame elevation of the load / unload side of the machine. The other frame components elevation is adjusted via the jack screws mounted to the feet. The elevation tolerance from the reference is  $\pm 1/8''$ .
4. Align the frame components in the X direction. Alignment tolerance is  $Y \pm 1/8''$  as measured from the machines axial center line through the length of the entire machine at the component joints and perpendicular to the pipe racks.
5. Anchor bolt the feet to the foundation. The minimum foundation thickness is 4" concrete. The anchor bolts may be left loose and tightened after full testing.
6. Verify that the machine is straight (along the X axis), within the elevation tolerance (the Z axis) and reasonably flat to the X-Y plane.
7. Tighten the frame connector bolts without disturbing the alignment. Torque the bolts to 120 ft.-lb..
8. Tighten the machine feet to the torque value recommended by the anchor bolt manufacturer.
9. Proceed with electrical and hydraulic installation.
10. AW32 hydraulic oil is recommended. Approximately 120 gallons required.
11. Install duct collection system according to the manufacturer's procedures manual.



## Controls

### Standard PCM 7625 Layout



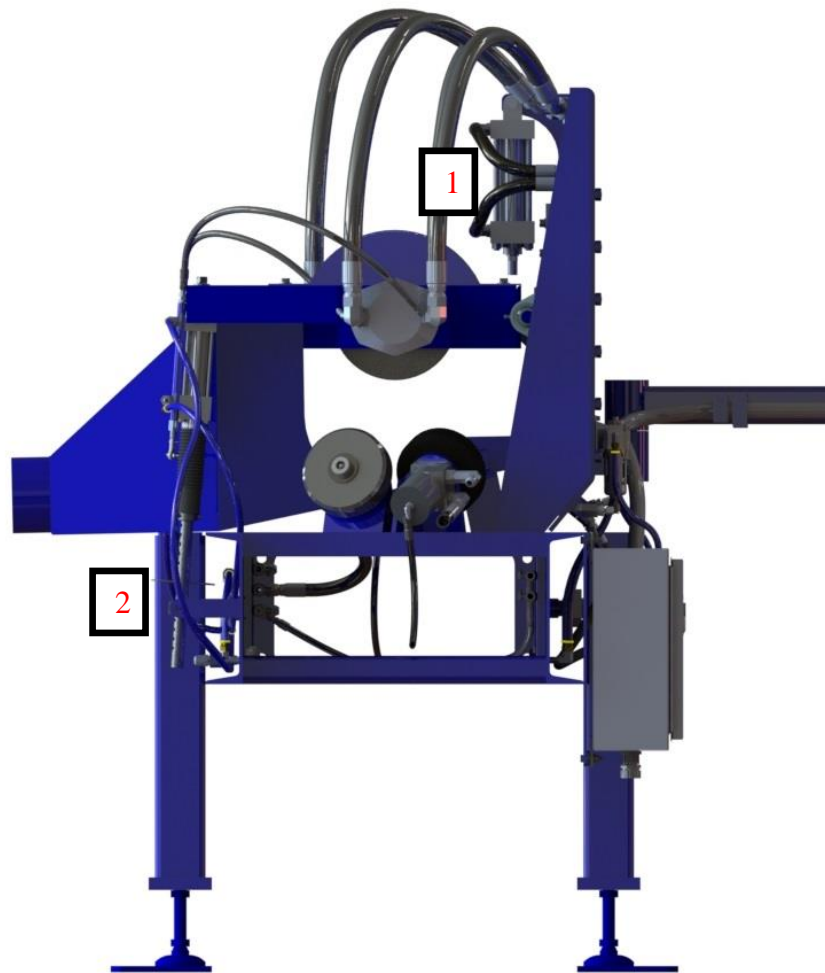
(Standard Control Layout – Specific Control Locations May Change)

	<b><u>Function</u></b>
1	Emergency Stop
2	Machine (on/off) Switch
3	Brush Motor Off/On
4	Dust Collector Off/On
5	Rear Brush Adjustment up/down
6	Pipe Speed Control
7	Pipe Load/Unload – Conveyor Direction
8	OD Scrapper Engage (if equipped)
9	Brush #1 Engage
10	Brush #2 Engage
11	Rattler Motor On

## Process Setup

### Brush Housing Adjustment

1. When loading the first pipe, or changing pipe sizes, the brush housing will need to be adjusted accordingly.
2. Move the joint under the brush housing frame, engage the brush and adjust the rear adjustment cylinder (1) with the control switch (Control #6) and rear pin (2) so that the brush housings move up one inch when contacting pipe
  - a. Ensure that the front and rear brush housing adjustments are positioned to effectively process the pipe. Failure to do so could result in damage to the machinery and can throw pipe off the conveyor wheels.





## Startup

1. Before starting, ensure that all daily maintenance is completed.
2. Install appropriate rattler motor and cleaning head.
3. Turn the **Machine Control** ON (Control #3).
4. Turn the **Dust Collector Control** ON (Control #4).
5. Ensure that the **Rattler Motor Control** (Control #10) is in the OFF position.
6. Ensure that the **Brush Housing Controls** (Control #9) are in the disengaged position.
7. Load the first joint of pipe onto the machine (Control #7).
8. Locate collar stop pins so that only one joint is picked up with the paddles.
9. Adjust brush frame so that it is level when brush is engaging pipe.
10. Turn the **Brush Motors Button** ON (Control #8).

**Note:** Reference page 7 for control panel layout.

## Process

1. With the pipe on the rack, actuate the **Pipe Index Load** (Control #7). This will load the pipe onto the machine.



2. Turn **Brush Motor** on (Control #3).
3. Using the **Motor Directional Control** (Control #7), CONVEY the pipe toward the Table Section.
4. Adjust the drive motor speed as required with the **Pipe Speed Control** (control #6).
5. If equipped, LOWER the **OD Scraper**, after the pipe is under the Scraper Head.
6. *After* the pipe is under the Brush Housing Assembly, the **Brush Housing** can be placed in the engaged position (Controls #9 & 10).
7. Turn the **Rattler Motor** ON (Control #11) *after* the rattler motor is inside the pipe.
8. If the pipe has traveled beyond the Brush Housing Assembly, ensure that the **Brush Housing** is in the UP position (Control #9 & 10), prior to conveying the pipe back toward it.
9. If the pipe has traveled beyond the OD Scraper, ensure that the **OD Scraper** head is in the UP position, prior to conveying the pipe back toward it.
10. Using the **Motor Directional Control**, (Control #7), CONVEY the pipe toward the Load Section.



11. If required, LOWER the **OD Scraper**, *after* the pipe is under the Scraper Head.

12. *After* the pipe is under the Brush Housing Assembly, the **Brush Housing** can be placed in the engaged position (**Control #9**).
13. Turn the **Rattler Motor** OFF (**Control #11**), *prior* to the ID Scraper exiting the pipe. (Failure to do so can result in both personal injury and damage to equipment)
14. After the pipe has been processed, convey the pipe back to the load side of the machine.
15. Be sure to properly collar the pipe prior to offloading.
16. After the pipe has been properly collared, ACTUATE the **Pipe Index Load** (**Control #7**). This will offload the processed pipe and load the next pipe onto the machine.
17. Repeat as required

# Preventative Maintenance Procedure



## PCM 7625 Daily Preventative Maintenance

Company: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Machine No.: \_\_\_\_\_  
 Week of: \_\_\_\_\_

Instructions:  
 Inspect each item at the start of each shift - initial next to block after task is complete  
 For more detailed information consult operators manual.

Day	Inspect control console wires and proper function (2)switches and joysticks for loose and/or broken wires	Inspect j-boxes (1)loose wires	Inspect load/unload paddles (1)cracks, bent parts, and excessive wear (2)broken bearings or loose grease fittings (3)hydraulic cylinder and hoses for leaks (4)Grease paddle bearings w/ synthetic HD grease (NLGI #2, GC/LB or equivalent)	Inspect Dust Collector (1)Loose wires (2)Debris level. Empty as needed	Inspect Drive System (1)Drive/idler wheels for wear. Min. dia. is 6" (2)Hydraulic hose for wear/leaks (3)Grease idler bearings w/ synthetic HD grease (NLGI #2, GC/LB or equivalent)	Inspect Cleaning System (1)Inspect brush wheels for excessive wear. Replace if >50% missing (2)Check brush housing support cylinder oil lubricator bowls. Make sure airline lubricator containers are full. Recommended dial setting is b/t 2 & 4. (Refill w/ SAE Gr. 20, viscosity 46 or equivalent) (3)Grease brush housing pivot bearings & brush shaft bearings with synthetic HD grease (NLGI #2, GC/LB or equivalent)	Inspect power supply (1)all fittings and hoses for leaks (2)electrical panel for loose wires (3)low oil switch functions properly (4)Check oil levels in hydraulic reservoir (5)Check return filter pressure gauge while conveyor/brush motors are operating
1							
2							
3							
4							
5							
6							
7							

Comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## PCM 7625 Yearly Preventative Maintenance

Company: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Machine No.: \_\_\_\_\_  
 Week of: \_\_\_\_\_

Year	<b>Power Supply</b> (1) Drain hydraulic reservoir & clean w/ suitable solvent. (2) Remove suction strainer & clean w/ solvent (3) Change hydraulic filters	<b>Machine Alignment</b> (1) Verify machine is aligned properly. Correct if necessary							

Comments:

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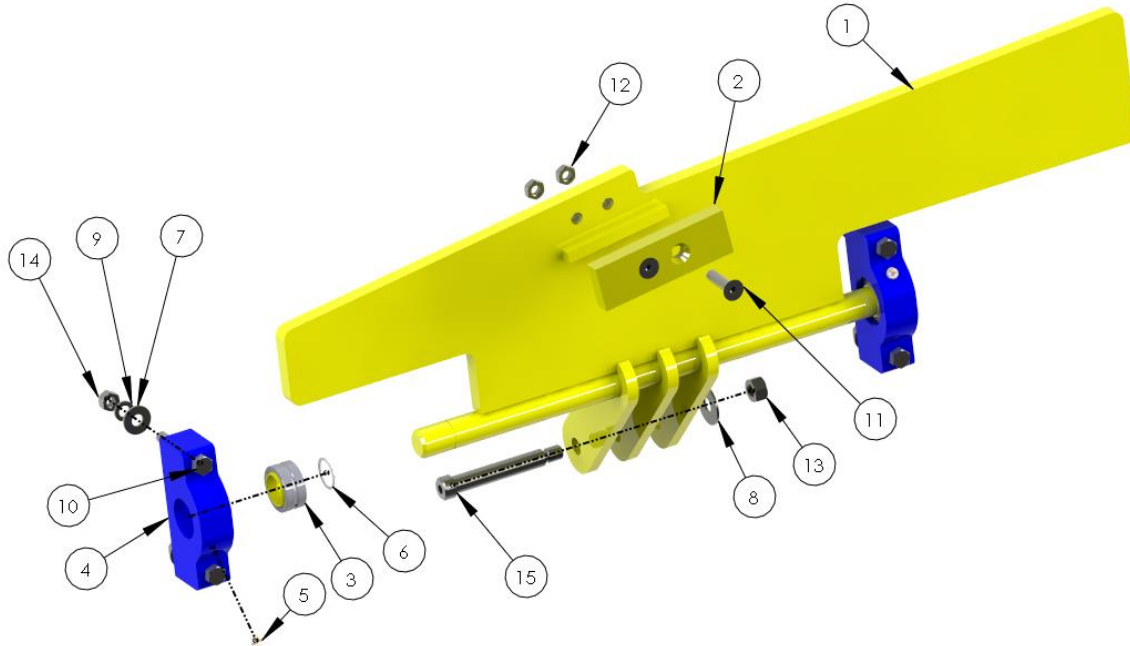
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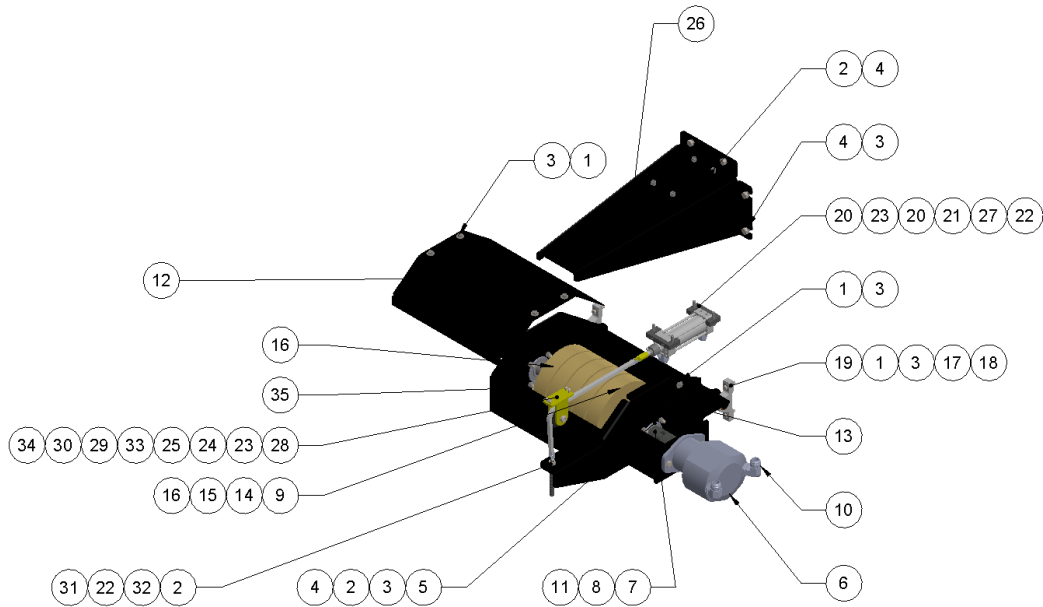
## Parts List

### Paddle Loader



Item #	Part #	Description	Quantity
1	13606	PADDLE FAB ASSEM	1
2	13592	PADDLE WEAR PAD	1
3	14645	SPHERICAL BEARING	2
4	13609	BEARING BLOCK	2
5	16086	GREASE ZERK, 1/8 NPT	2
6	17053	EXTERNAL RETAINING RING, 1 1/4"	2
7	17649	WASHER, FLAT, .50"	4
8	17651	WASHER, FLAT, .625"	1
9	14140	WASHER, LOCK, .50"	4
10	14361	BOLT, HHCS, .50" X 3.50" NC GR5	4
11	14495	BOLT, FHSCS, .50" X 2"	2
12	16524	NUT, JAM LOCK, .50"	2
13	16532	NUT, LOCK, .625" NC NYLOCK	1
14	14124	NUT, HEX, .5" NC	4
15	38707	BOLT, SHOULDER, .75 X 4.25 X .625-11	1

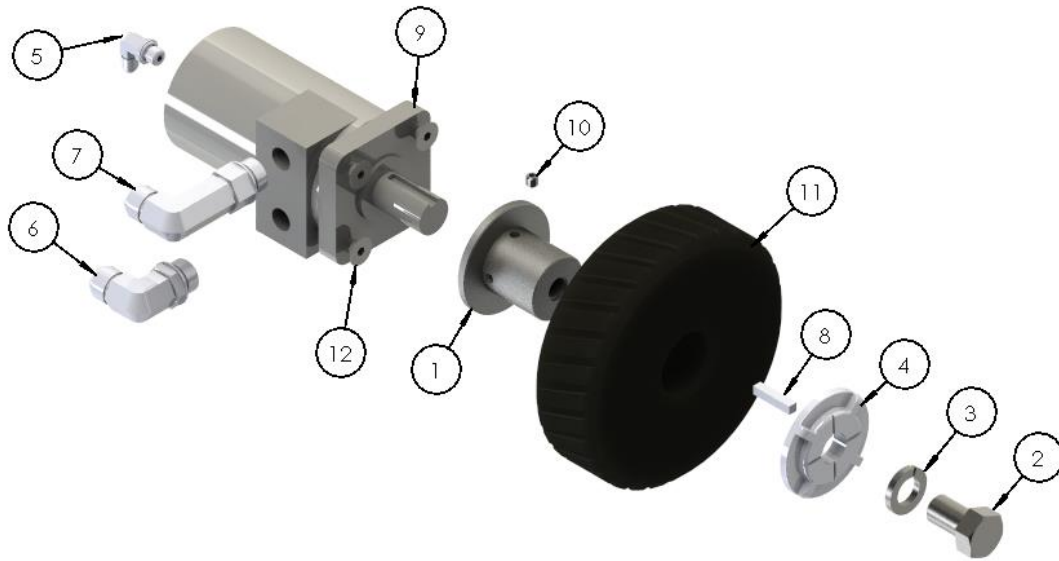
## Brush Housing Assembly



Item #	Part #	Description	Quantity
1	17649	WASHER, FLAT,	12
2	14124	NUT, HEX,	17
3	14358	BOLT, HHCS,	23
4	14145	WASHER, LOCK,	24
5	14588	BRUSH SHAFT BEARING	2
6	16383	BRUSH MOTOR	1
7	15012	SPIDER COUPLING HALF	2
8	15027	BUNA-N SPIDER	1
9	48129	WIRE WHEEL 10", HUB CITY IRON WORKS	5
10	15595	1" HYDRAULIC 90° FITG	2
11	16298	KEY STOCK	2
12	117-450-108-018	BRUSH COVER	1
13	117-450-110-018	COUPLING COVER	1
14	13909	BRUSH SHAFT	1
15	13915	BRUSH SPACER	4
16	16513	HEX NUT	1
17	48982	GROOVED FLANGE BUSHING	2
18	16082	GREASE FITG	2
19	48833	BRUSH HOUSING BUSHING BLOCK	2
20	28310	CYLINDER,AIR NCA1S200-0400KN-XB9	1
21	15677	½" HYDRAULIC ELBOW	2
22	16756	ROLLER CHAIN CONNECTING LINK	2
23	14143	BOLT, SHCS	8
24	29137	NUT, HEX	4
25	45396	BOLT, SHOULDER,	1
26	117-450-016-018	AIR CYLINDER MOUNT	1
27	45497	BRUSH CHAIN CONNECTOR	1

28	115-300-218-018	SPROCKET BASE PLATE	1
29	115-300-219-018	SPROCKET SUPPORT PLATE	2
30	45499	SPROCKET SPACER	1
31	38283	ROLLER CHAIN, 20" LG.	1
32	45496	CHAIN ADJUSTMENT SCREW	1
33	117-450-113-XXX	SPROCKET	1
34	117-450-112-XXX	BUNTING BEARING	1
35	117-700-926-00	BRUSH HOUSING	2

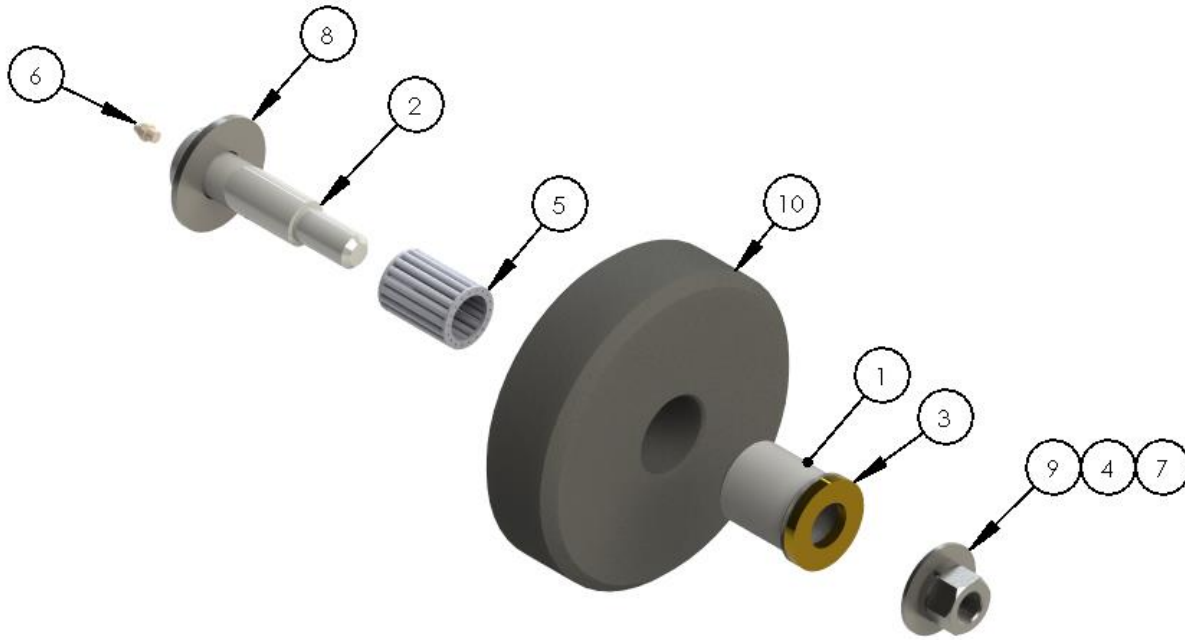
### Drive Station



Item #	Part	Description	Quantity
1	13566	DRIVE HUB	1
2	14131	BOLT, HHCS, .75" X 1.25"	1
3	14133	WASHER, LOCK, .75"	1
4	14134	LOCK WASHER CASTING	1
5	15612	# 4 MSAE X # 4 MJIC 90° ELBOW, ( 2062-4-4)	1
6	15739	# 10 MSAE X #10 MJIC 90° ELBOW, (2062-10-10)	1
7	15790	# 10 MSAE X # 10 MJIC LONG 90° ELBOW	1
8	16298	1/4" x 1-1/4" KEY	1
9	16391	CHARLYNN HYD MOTOR	1
10	17149	SET SCREW, .3125"-18 X .3125"	2
11	22510	WHEEL, 18001JT, GROOVED	1

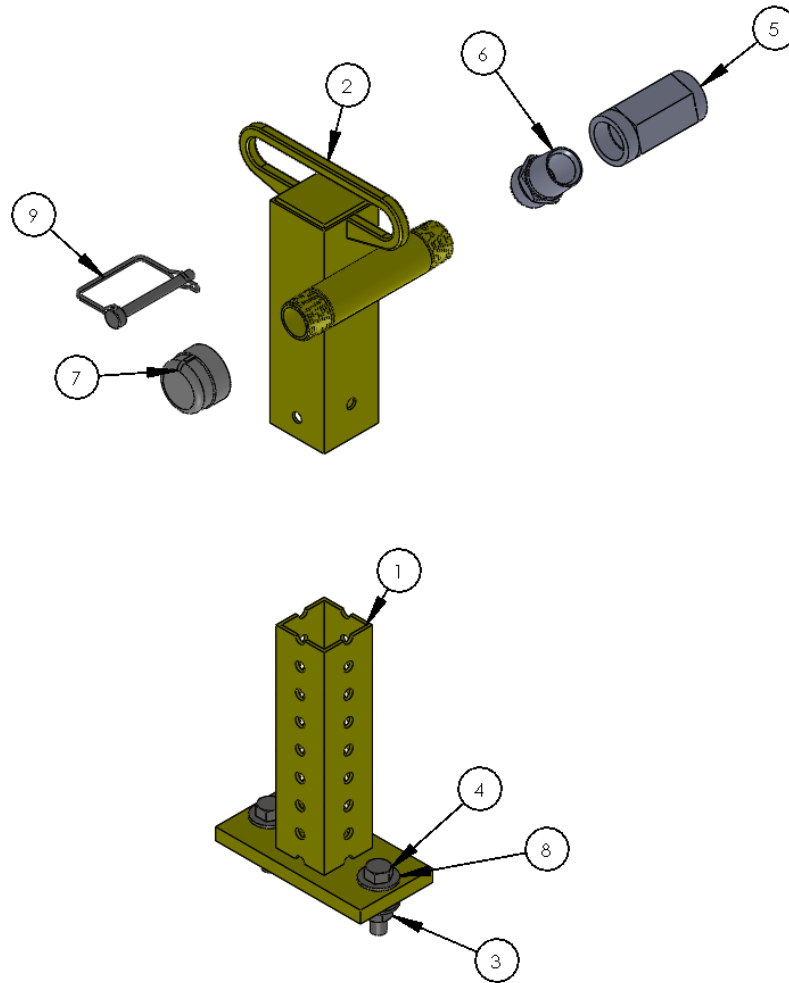


### Idler Station



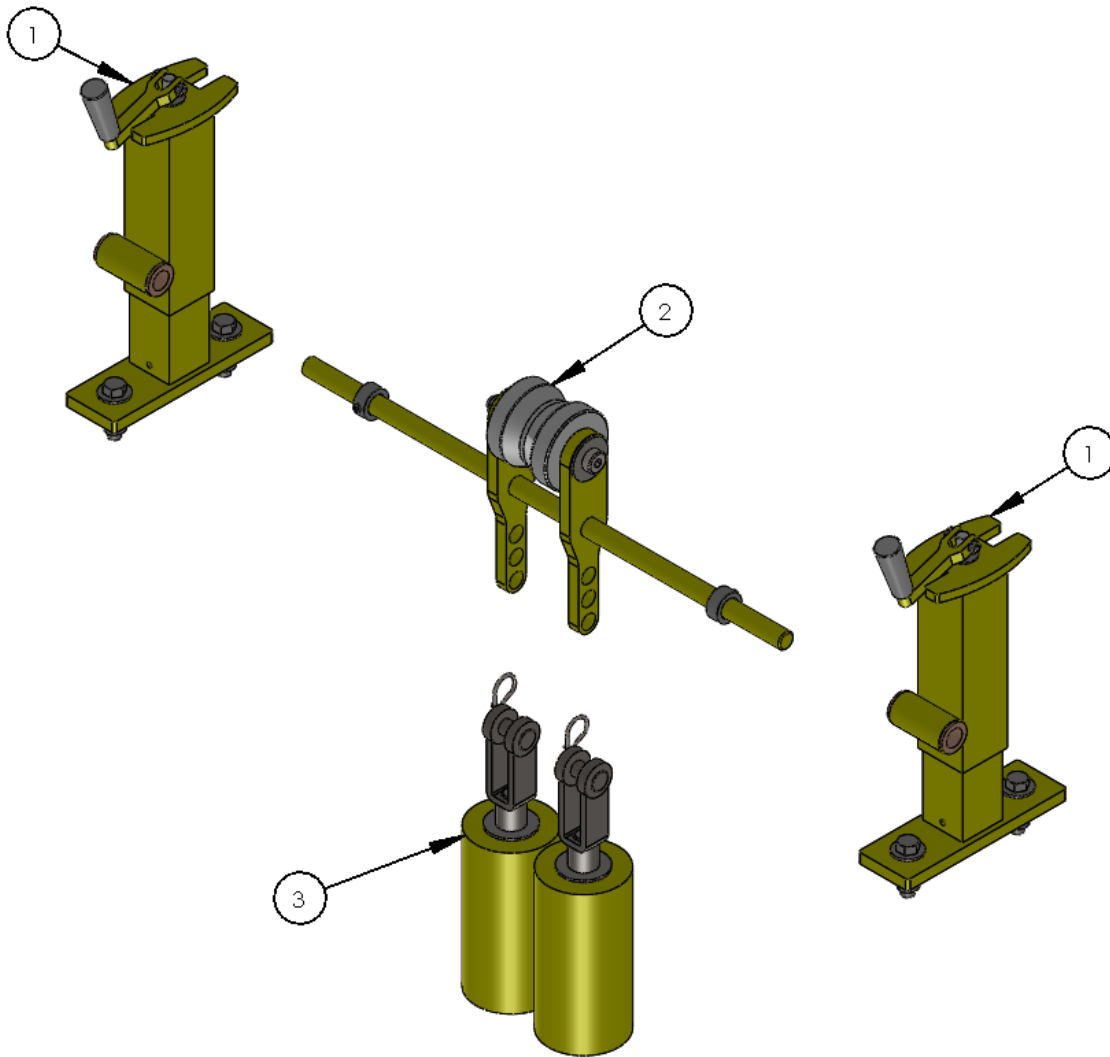
Item #	Part	Description	Quantity
1	28991	NEEDLE BEARING RACER, W. FLANGE	1
2	14435	1" X 2.5" SHOULDER BOLT	1
3	13979	WASHER, FLAT, 1" X 2" X .125" BRASS	2
4	14133	WASHER, LOCK, .75"	1
5	14641	NEEDLE BEARING	1
6	16082	GREASE FITG, .25"-28 X .75"	1
7	16485	NUT, HEX, .75" NC	1
8	17652	WASHER, FLAT, 1"	1
9	17653	WASHER, FLAT, .75"	1
10	22531	RUBBER WHEEL , SMOOTH	1

### Rear lance Assembly



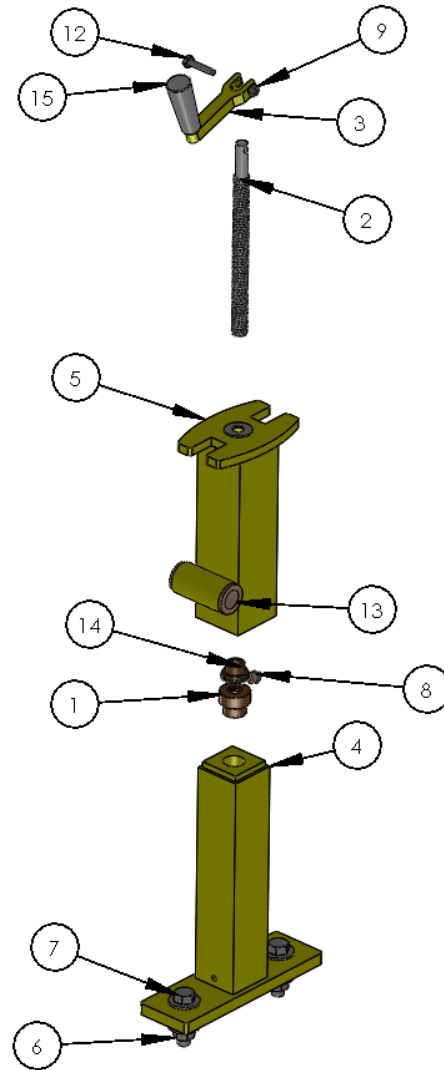
Item #	Part #	Description	Quantity
1	117-700-012-00	PERFORATED TUBE ASSEMBLY (REAR PINED TYPE)	1
2	117-700-029-00	REAR ELEVATION COVER (PINED TYPE)	1
3	14124	NUT, HEX, .5" NC	2
4	14312	BOLT, HHCS, .50" X 2" NC GR5	2
5	15599	# 16 FNPT TEE, ( 2090-16-16)	1
6	15667	# 16 MNPT X # 16 MJIC ADAPTOR, (2021-16-16)	1
7	16642	1" NPT PIPE CAP, (4638K256)	1
8	17649	WASHER, FLAT, .50"	4
9	49619	PIN, SS LOCKING , 5/16" X 2-1/2"	1

## Front Lance Support



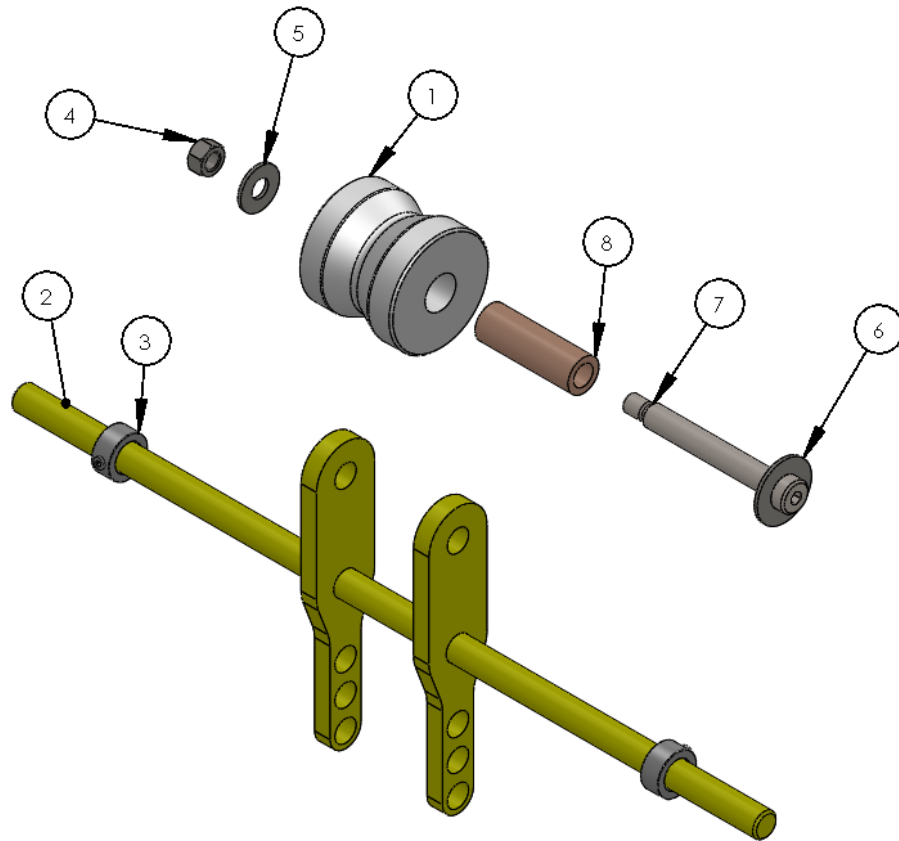
Item #	Description	Quantity
1	FRONT LANCE SUPPORT SIDE ASSEMBLY	2
2	FLS, SHAFT ASSEMBLY	1
3	COUNTER WEIGHT ASSEMBLY	2

### Front Lance Support Side Assembly



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	107-551-530-036	NUT, ACME	1
2	107-551-911-XXX	ACME ADJUSTMENT SCREW	1
3	107-551-917-018	HANDLE LEVER	1
4	107-700-099-00	LOWER FRONT LANCE SUPPORT	1
5	107-700-100-00	FRONT LANCE ADJ. COVER	1
6	14124	NUT, HEX, .5" NC	2
7	14312	BOLT, HHCS, .50" X 2" NC GR5	2
8	16086	GREASE ZERK, 1/8 NPT	1
9	16530	NUT, JAM, .25"-20	1
10	17649	WASHER, FLAT, .50"	4
11	17654	WASHER, FLAT, .4375"	3
12	23172	BOLT, HHCS, .25" X 1.25" GR 5	1
13	48511	BEARING, .7874"X1.023" FLG BRONZE SLEEVE	2
14	49817	1/2" SHAFT FLANGED SLEEVE BEARING	1
15	49942	HANDLE, 1" OD, ALUM WITH STUD 3/8"-16	1

### FLS Shaft Assembly



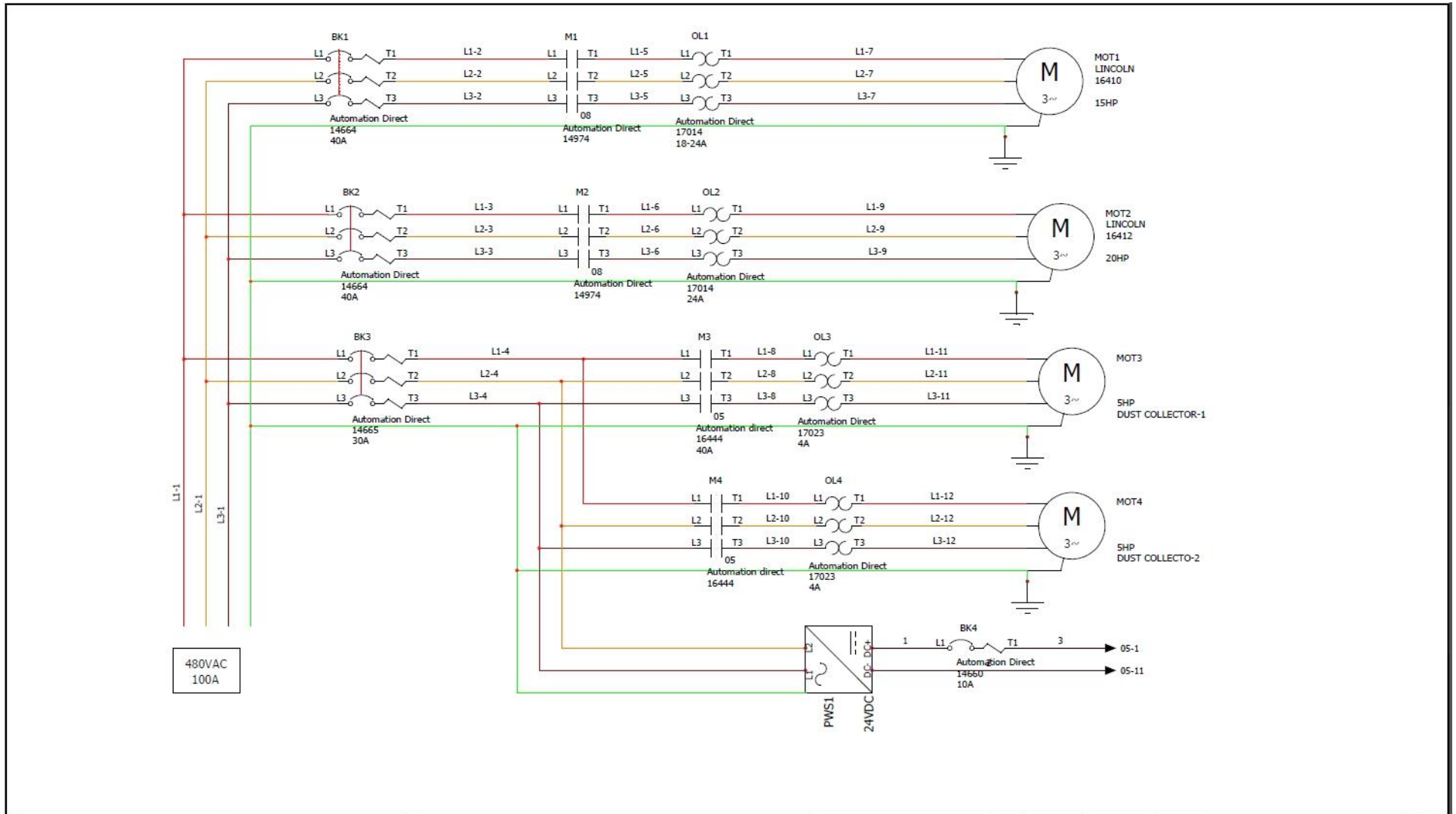
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	107-551-918-018	FLS, ROLLER, UNIVERSAL	1
2	107-700-902-00	FLS, SHAFT FAB ASM	1
3	14038	1-3/16 SHAFT COLLAR	2
4	14124	NUT, HEX, .5" NC	1
5	17649	WASHER, FLAT, .50"	1
6	17651	WASHER, FLAT, .625"	1
7	27322	BOLT, SHOULDER, .625" X 4.25" X .5-13	1
8	49614	BEARING, .625" SH 1" OD X 3" OIL EMBEDDED	1

## Recommended Spare Parts

<b>Minimum recommended spare parts list</b>			
<b>Item #</b>	<b>Part #</b>	<b>Description</b>	<b>Recommended Quantity</b>
1	48129	WIRE WHEEL 10", HUB CITY IRON WORKS	10
2	22531	RUBBER WHEEL , SMOOTH	15
3	22510	WHEEL, 18001JT, GROOVED	9
4	28991	NEEDLE BEARING RACER, W. FLANGE	6
5	14435	1" X 2.5" SHOULDER BOLT	6
6	13979	WASHER, FLAT, 1" X 2" X .125" BRASS	12
7	14133	WASHER, LOCK, .75"	6
8	14641	NEEDLE BEARING	6
9	16082	GREASE FITG, .25"-28 X .75"	2
13	13566	DRIVE HUB	4
15	14133	WASHER, LOCK, .75"	2
16	14134	LOCK WASHER CASTING	2
20	16298	1/4" x 1-1/4" KEY	6
21	16391	HYD MOTOR	2
22	17149	SET SCREW, .3125"-18 X .3125"	2
23	14588	BRUSH SHAFT BEARING	4
24	15012	SPIDER COUPLING HUB	2
25	15027	SPIDER ELEMENT	4
26	13592	PADDLE WEAR PAD	4
27	16513	BRUSH SHAFT NUT	1
28	13909	BRUSH SHAFT	
<b>Premium recommended spare parts addition</b>			
26	15157	LOAD CYLINDER	1
27	15290	ROD EYE	2
28	14638	ROD END RIGHT HAND	1
29	14627	ROD END LEFT HAND	1
30	36189	PRECISION REGULATOR	1
31	36184	AIR VALVE	1
32	16987	LANCE REGULATOR	1
33	17564	LANCE AIR VALVE	1
34	17704	DUST COLLECTOR BLADE	1
35	16091	LINEAR BEARING	4
36			

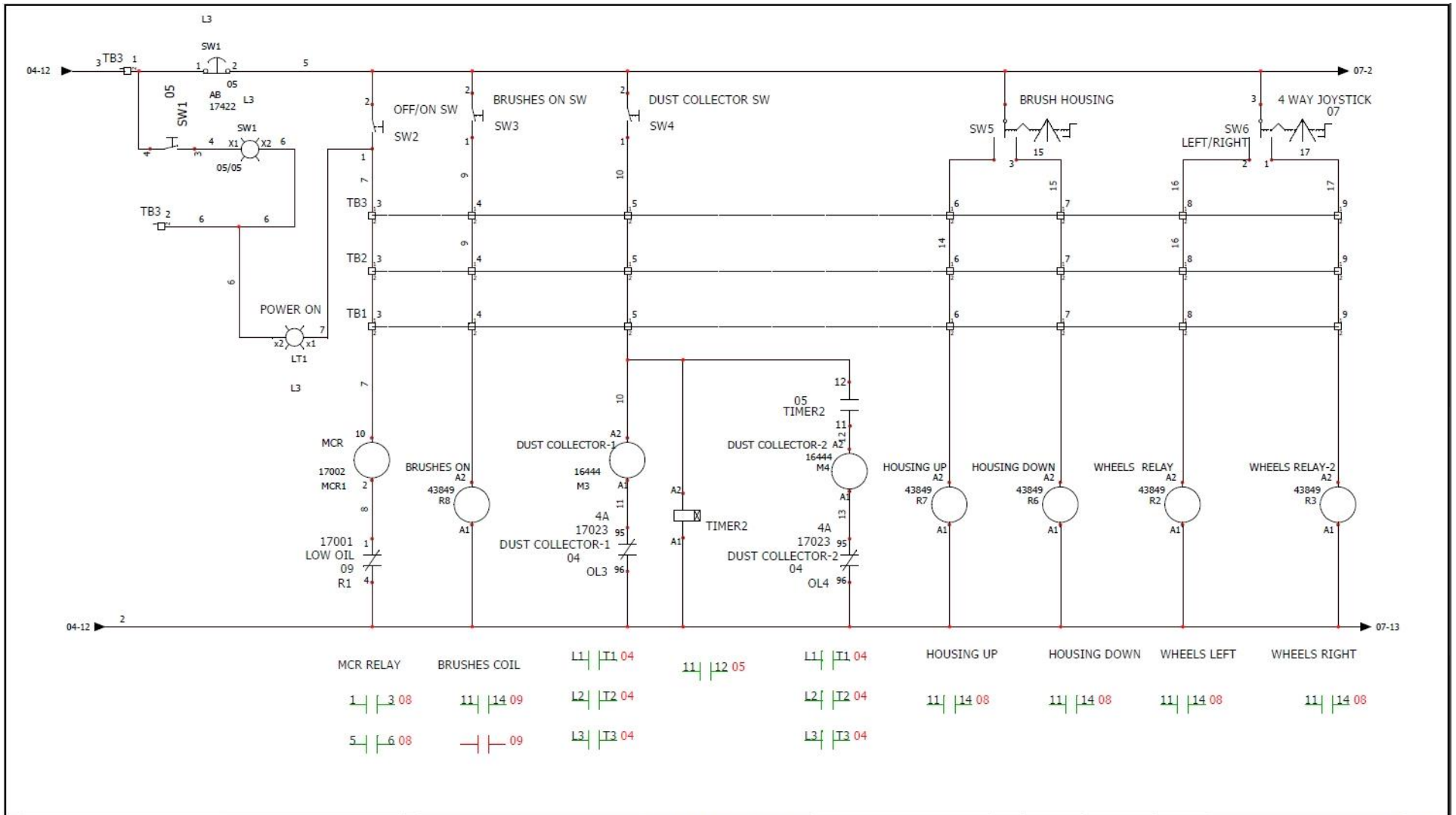
# Electrical Schematics

## Power Supply Panel Schematic



		<b>Power</b>			REVISION
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		0	2/14/2014	igonzalezjalme	
		REV.	DATE	NAME	CHANGES
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		User data 2			04

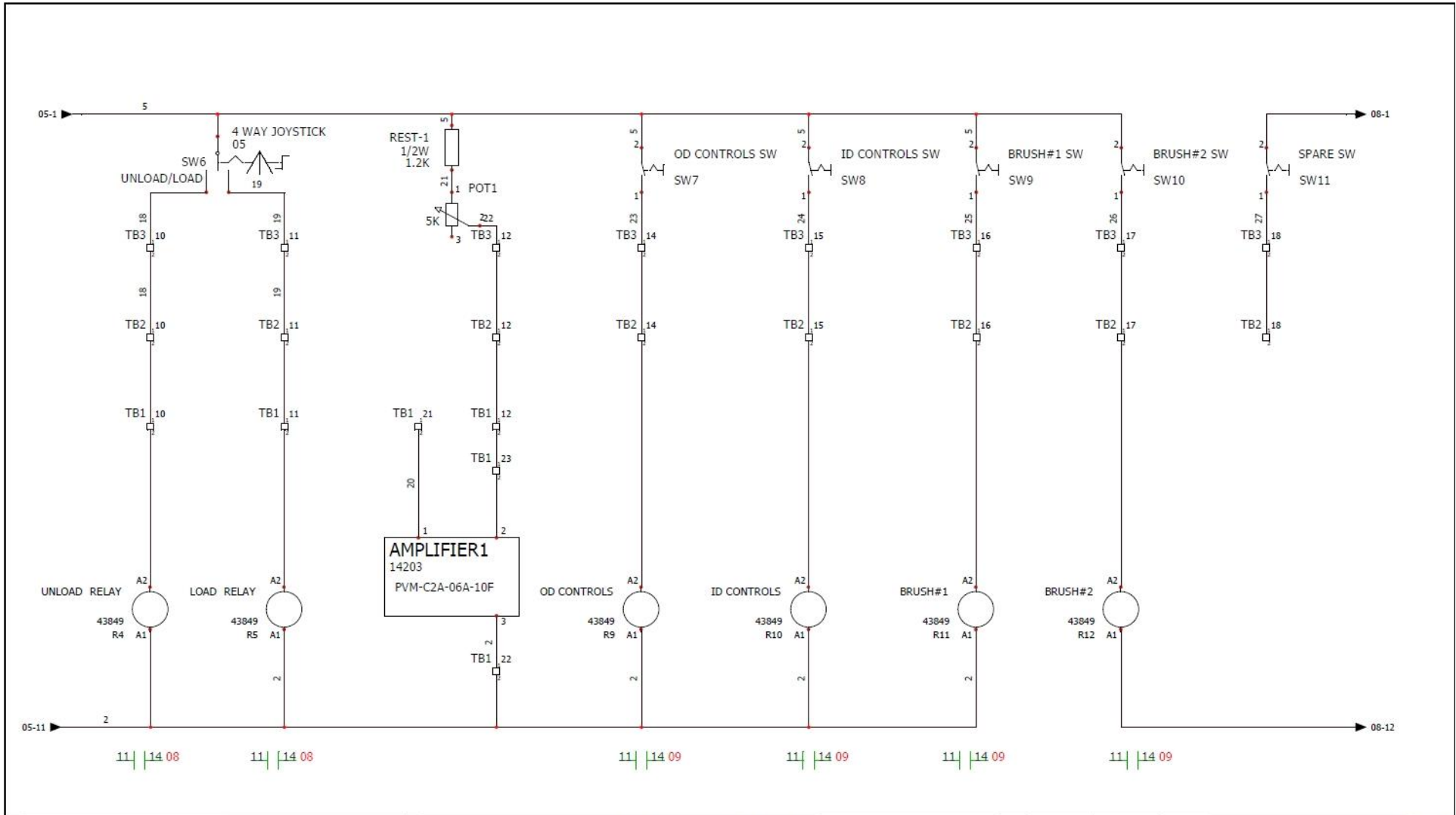
### Control Head 1



<b>CONTROL HEAD-1</b>		REVISION		
		0		
		0	2/14/2014	igonzalezjalme
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		User data 2		SCHEME 05



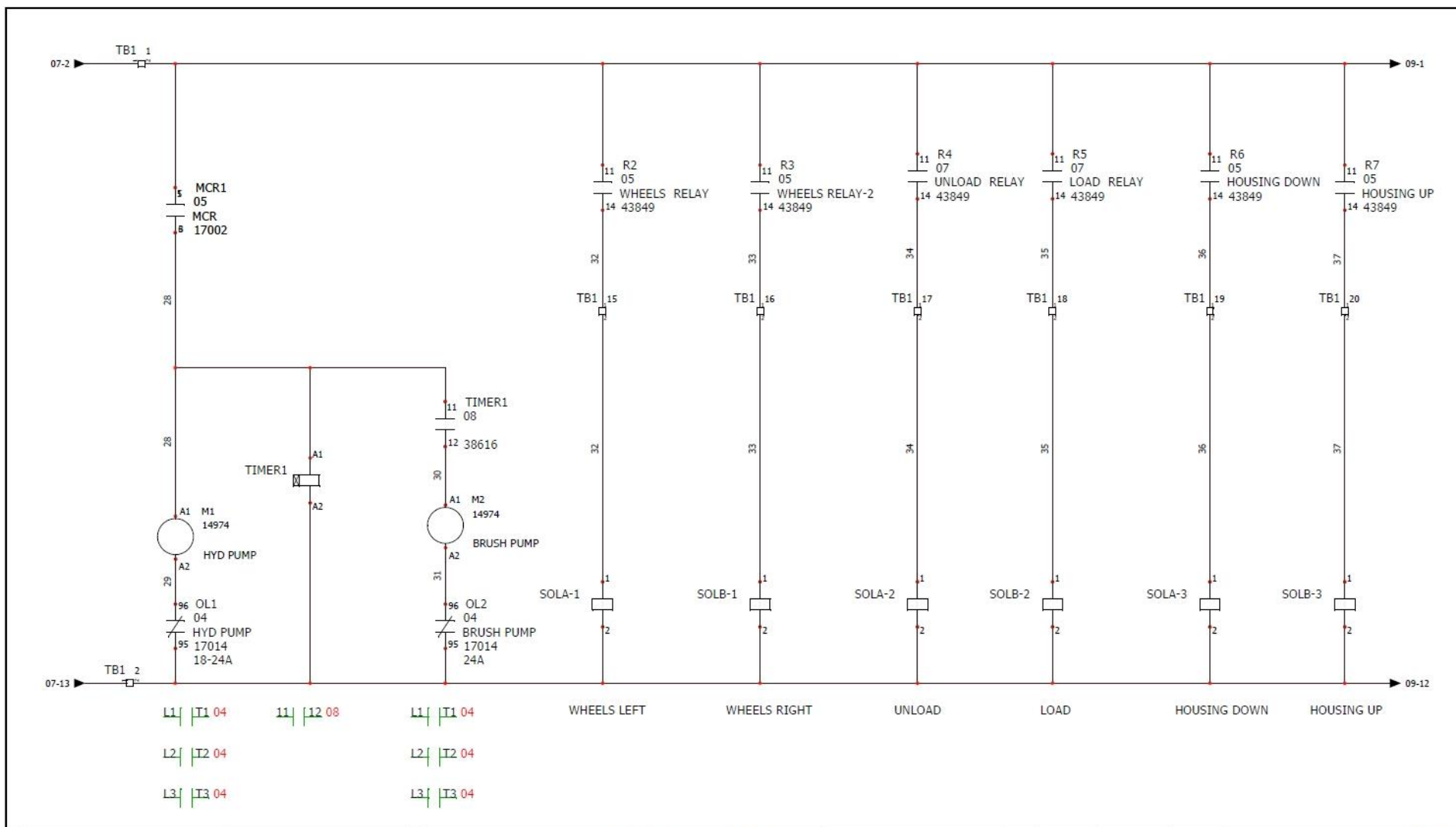
### Control Head 2



### CONTROL HEAD-2

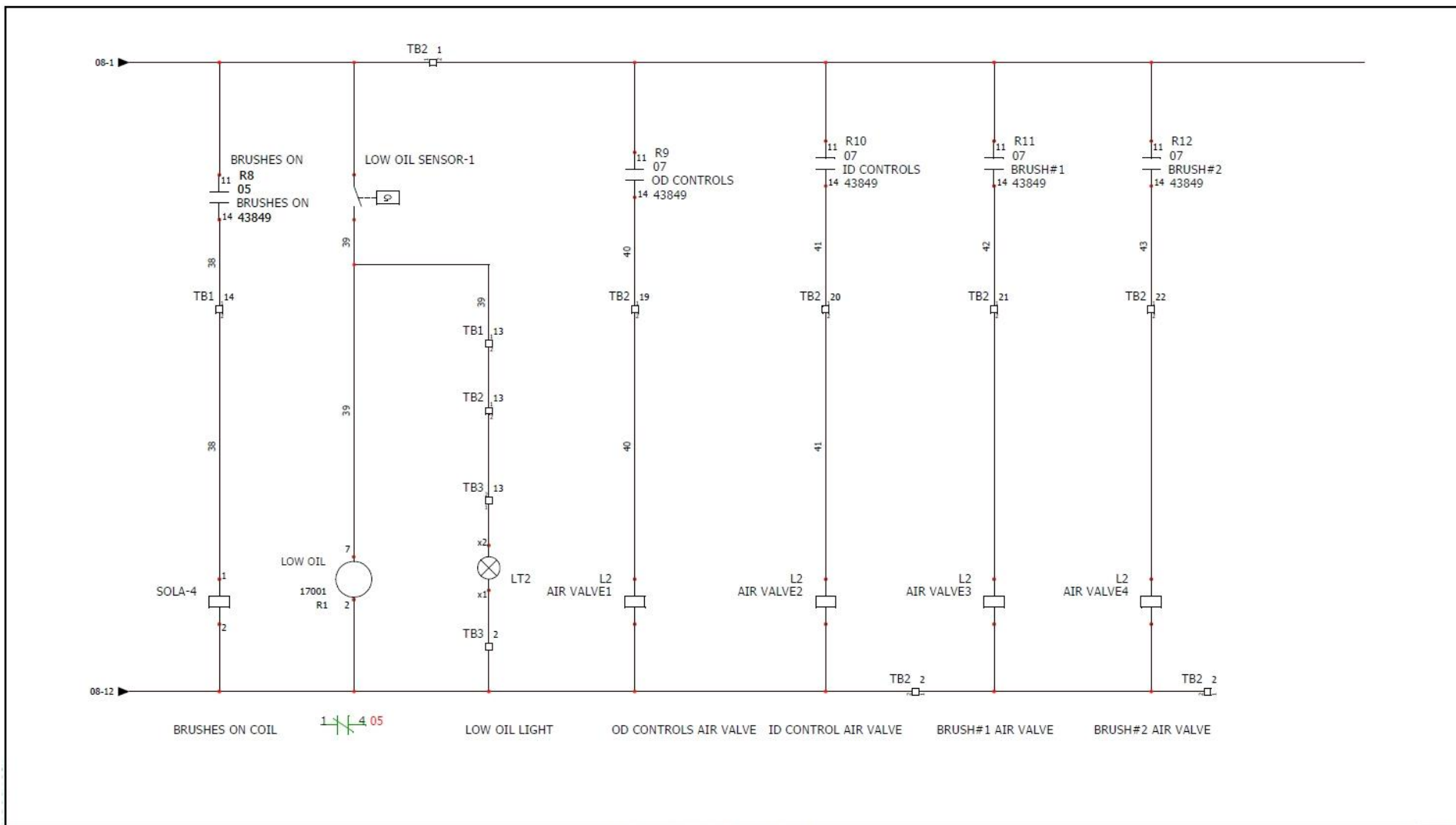
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			NAME	lgonzalezjaim
			CHANGES	
			SCHEME	07
			USER DATA 2	

### Relay Schematic 1



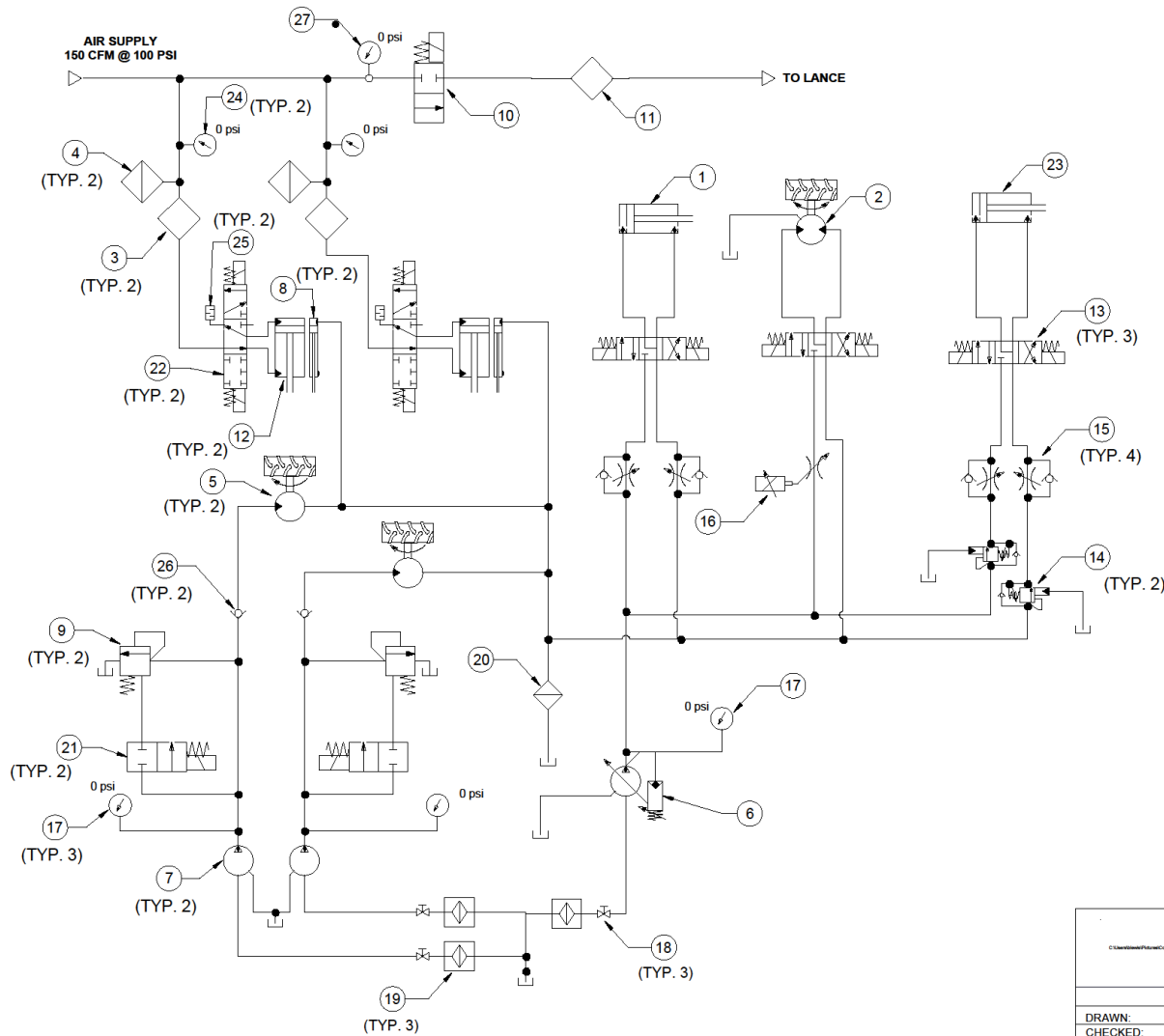
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CONTRACT N° :	LOCATION: L1	POWER SUPPLY PANEL			SCHEME
					08

### Relay Schematic 2



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0	2/21/2014	jgonzalez@me
REV.	DATE	NAME
		CHANGES
User data 2		
CONTRACT N° :	LOCATION: L1	POWER SUPPLY PANEL
		SCHEME 09

# Hydraulic & Pneumatic Schematic



ITEM	QTY.	DESCRIPTION	PART NO.
1	1	PADDLE CYLINDER	15157
2	1	CONVEYOR HYD. MOTOR, 9.7 in3	16392
3	2	LUBRICATOR	16326
4	2	FILTER	15313
5	2	BRUSH MOTOR	16383
6	1	HYDRAULIC PUMP	XXXXX1
7	2	BRUSH PUMP	24063
8	2	AUX. HYD. CYLINDER	15098
9	2	RELIEF VALVE	21016
9.1	2	BODY, RELIEF VALVE	37715
10	1	RATTLER MOTOR VALVE	17565
11	1	RATTLER MOTOR LUBRICATOR	16327
12	2	BRUSH FRAME AIR CYLINDER	15097
13	3	HYD. DIRECTIONAL VALVE	17600
14	2	COUNTER BLANCE CARTRIDGE	24159
14.1	2	COUNTER BLANCE BODY	14757
15	4	FULLY ADJUSTABLE NEEDLE WITH REVERSE FLOW CHECK CARTRIDGE	14765
15.1	2	REVERSE FLOW CHECK BODY	14754
16	1	PROPORTIONAL FLOW CONTROL VALVE	14802
17	3	PRESSURE GAUGE	16066
18	3	N.C. SHUT OFF VALVE (2-WAY)	29257
19	3	SCREEN CARTRIDGE	40575
20	1	FILTER	40477
21	2	HYDRAULIC DIRECTIONAL VALVE	40577
21.1	2	BODY, 2 WAY DIVERTER	40576
22	2	HYDRAULIC DIRECTIONAL VALVE	17602
23	1	REAR BRUSH CYLINDER	15164
24	2	REGULATOR	16023
25	2	MUFFLER	16448
26	2	CHECK VALVE	22382
26.1	2	BODY, SUN DAL	14804
27	1	REGULATOR	16987

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<b>TITLE:</b> <b>PCM 7625 HYDRAULIC SCHEMATIC</b>			<b>DWG. No.:</b> <b>107-800-001-00</b>	
<b>DRAWN:</b> BL	<b>BY:</b> JBB	<b>DATE:</b> 02/19/13	<b>REV.:</b> A	
<b>CHECKED:</b> JBB	<b>APPROVED:</b> JBB	<b>DATE:</b> 04/16/13	<b>WT:</b> <b>LBS:</b> <b>SHEET 1 OF 1</b>	