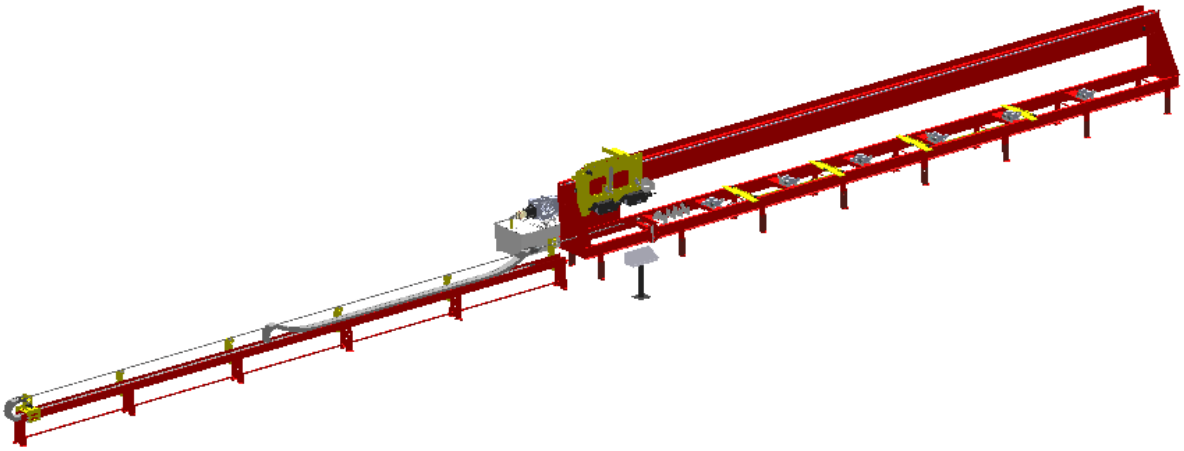

Tubular Cleaning Unit, SuperMax

R&R Manufacturing LLC
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Broussard, La 70592
337.330.2757
www.RR-mfg.com
Sales@RR-mfg.com

Table of Contents

Introduction

At R&R we provide over 80 years of combined experience in the engineering, R&D, manufacturing and installation of tubular cleaning units, pipe handling/cleaning equipment and all forms of conveyance systems.

In addition to the manufacturing of new equipment we also have a seasoned service staff that can perform on site repairs, maintenance and refurbishment (both mechanical and electrical). R&R also carries a variety of replacement parts for all of your tubular cleaning units as well as new and improved patent pending products exclusively provided by our company.

Warranty

R&R Manufacturing products are guaranteed for 12 months to be free from defects of material or workmanship and to perform as promised when maintained in accordance with manuals and operated under the conditions for which they were designed. Wear items such as wheels, brushes and wear tabs are excluded. Damage due to improper electrical or mechanical applications void this warranty. Use of other than genuine R&R Manufacturing replacements parts or service work performed by other than authorized R&R Manufacturing service agents will void the warranty.

Machine specifications

TUBULAR CLEANING UNIT, SUPERMAX

The R&R Manufacturing Tubular Cleaning Unit SuperMax model provides inside and outside diameter cleaning for an array of tubular sizes and types with high production and increased effeciency in mind. The unit has a durable design, user friendly controls, minimized maintenance and is manufactured with the highest quality.

R&R MANUFACTURING

TUBULAR CLEANING UNIT, SUPERMAX MODEL (10200.016)

STANDARD FEATURES

- Pipe rotates in place at adjustable RPM while cleaning heads travel linearly along pipe. Eliminating pipe slippage with wet/muddy pipe therefore increasing efficiency and production.
- Two wire brush assemblies for tubular outside diameter, Qty 14, 2" Wide 10" diameter wire brushes
- Pneumatic brush assembly floating system to handle dimensional variations
- Inside diameter cleaning via rigid pipe to accommodate rattling motor or high pressure water attachments.
- 60 HP electric powered hydraulic system to efficiently perform all pipe handling operations
- Left of Right tubular loading setup
- Operator and maintenance friendly electric control pedestal positioned up to 25' away for maximum safety

OPTIONAL FEATURES

- Enclosures to reduce sound levels below 85db and contain dust and debris
- Dust and debris collection system with filtered exhaust. Dust is forced across cartridge style filter elements while debris falls into 55 gallon drum virtually eliminated any airborne particles
- Outside diameter extreme scale and rust removal system
- Range 3 tubular capacity
- Water blasting accessory package to accept up to 40,000 psi water blasting system. Systems with 20,000psi water attachments do not require any pre or post unit cleaning. Tubular goods are inspection ready upon unloading.

BUILDING & SERVICE REQUIREMENTS

Electrical
230/480v, 3ph, 50/60 Hz, Others by request
Pneumatic
110 psi @ 175 cfm (ID Rattling)
110 psi @ 45 cfm (Non-ID Rattling)

-Work area as per layout drawing 10800.116
-Customer responsible for all service terminations & building modifications
-Signed installation agreement, if applicable

See more product information including videos, technical manual, spare parts by scanning QR code

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Safety

To ensure this quality product is safely and correctly utilized, all instructions within this manual must be read and understood prior to equipment start-up. Be aware of all safety labels on machinery. If you do not understand any of the safety instructions contact your supervisor or product supplier immediately!

Compliance with safety standards, including federal, state and local codes or regulations is the responsibility of the purchaser(s). A safety study should be made of the products application by the purchaser(s). It is the purchaser's responsibility to provide any additional guards, safety labels or other safety equipment deemed necessary based on this safety study.

The information contained in this safety manual is correct at the time of printing. Due to the continuing development of product lines, changes in specifications are inevitable. The company reserves the right to implement such changes without prior notice.

If you suspect fire hazards, safety hazards, dangers towards health or any other job safety concerns, consult your federal, state or local codes.

Inspect equipment for safety labels. Make sure personnel are aware of and follow safety instructions. Maintain an orderly environment in the vicinity of the conveyor at all times. Clean up spilled materials or lubricants immediately. All personnel shall be instructed regarding the necessity for continuous care and attention to safety during the operation. They must be trained to identify and immediately report all unsafe conditions or practices relating to the conveyor and its operation. Know your company's machine specific Lockout / Tagout procedure. Do not perform maintenance until electrical disconnect has been turned off! Replace all safety devices, guards and guarding prior to equipment start-up.

All electrical installations and wiring shall conform to federal, state and local codes

Control stations should be so arranged and located that the operation of the affected equipment is visible from them. Control stations shall be clearly marked or labeled to indicate the function controlled.

Remotely and automatically controlled products, and products where operator stations are not manned or are beyond voice or visual contact from drive areas, loading areas, transfer points and other potentially hazardous locations on the conveyor path not guarded by location, position or guards shall be furnished with emergency stop buttons, pull cords, limit switches or similar emergency stop devices. Where the design, function and operation of such conveyor clearly is not hazardous to personnel, an emergency stop device is not required. The emergency stop devices shall be installed so that they cannot be overridden from other locations.

Only trained, qualified personnel shall be permitted to operate a machine. Training shall include instruction in operation under normal conditions and emergency situations.

The product shall be used to transport only a load that it is designed to handle safely.

It is the responsibility of the purchaser of this unit to train operating personnel in the proper manner of operation. It is furthermore understood that R&R Manufacturing assumes no responsibility for injury, disability, or death resulting from improper operation, removal, or bypassing of any electrical or mechanical safety devices incorporated in the design and manufacturing of this product.

The proper clothing for the job is always to be worn. Several types of protective equipment are available which can help you to avoid injury.

Service Requirements

Hydraulic Oil

The performance of the hydraulic system depends largely on the quality of the hydraulic fluid used and should be selected according to the operating conditions.

The service life of hydraulic fluid is greatly influenced by contaminants (particulate & water) and cracking induced by high temperatures.

- Contaminants should adhere to ISO 4406 19/17/14
    - New hydraulic oil does not necessarily fulfil the required cleanliness requirement and should be filtered before adding to tank.
- Mixing different types/grades of oils should be avoided. This may lead to undesirable chemical reactions causing sludge.
- Tank temperature should be below 175°F

The primary consideration when determining hydraulic oil is operating viscosity. Other choices must be considered such as fluid type, (synthetic, petroleum and water based) and other addetives.

- Viscosity slected based on ambient operating temperatures
    - Temperature: 30°F to 140°F ISO 32
      0°F to 70°F ISO 22

  additional heaters may be added to tank for cold weather environments

Electric Service

Electrical service should be commissioned by a qualified and licensed personnel according to local electrical codes. R&R Manufacturing should be consulted for electrical demands unique to each system. The following chart is provided as a reference only.

Product	Recommended Service (Amps) at 480/230 volts
Supermax, 60hp	200/400
Medium pressure pump, 5ksi/8gpm, 40hp, Electric Heat	200/400
Medium pressure pump, 5ksi/8gpm, 40hp, Gas Heat	100/200
High pressure pump, 10ksi/12gpm, 75hp	200/400
High pressure pump, 10ksi/17gpm, 100hp	200/400
High pressure pump, 20ksi/11gpm, 150hp	300/600
High pressure pump, 20ksi/15gpm, 200hp	400/800

Compressed Air

The compressed air system shown below generally yields satisfactory results, although local conditions may dictate otherwise.

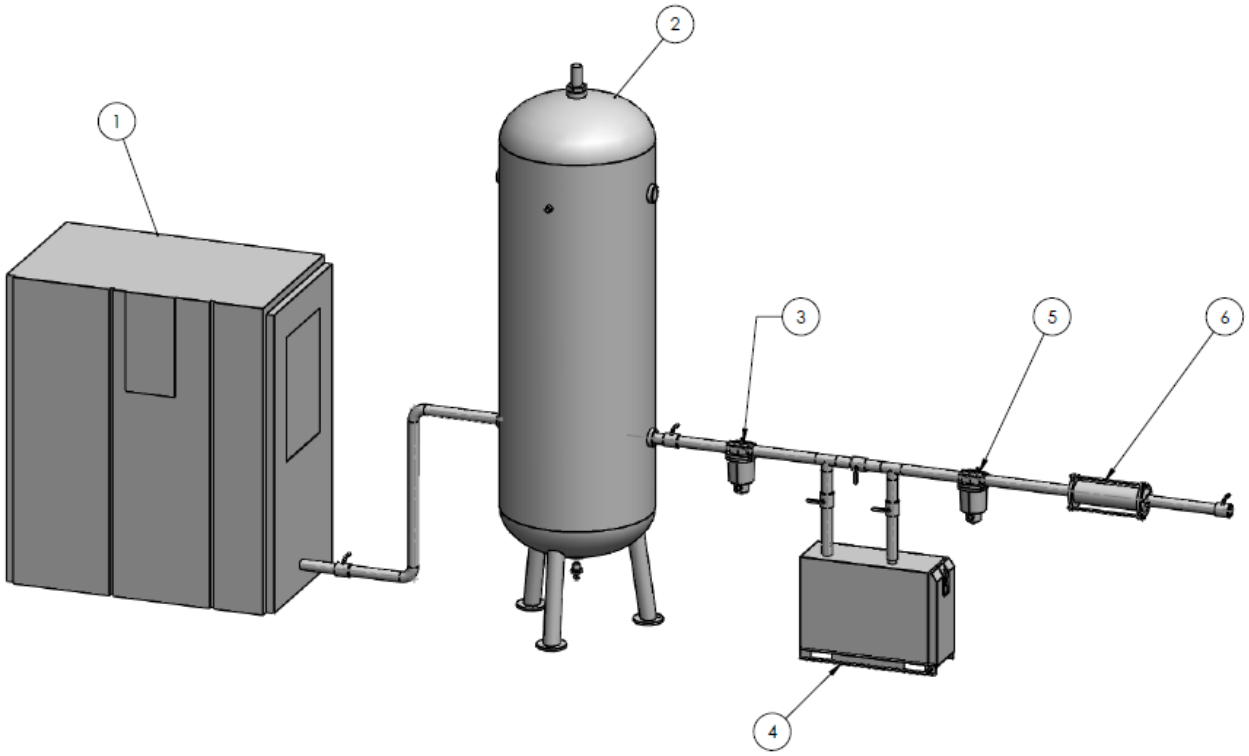
Compressed air should adhere to:

ISO 8573.1 : 2010

Particle:	Class 2
Moister:	Class 4 for ambient temperatures above 37°F
	Class 2 for ambient temperatures below 37°F
Oil:	Class 3

The compressed air system shown below generally yields satisfactory results, although local conditions may dictate otherwise.

ITEM No.	DESCRIPTION
1	Screw air compressor
2	Bulk tank w/ autodrain
3	Main line purification filter, 3 mm
4	Refridgerated air dryer, atmospheric dew point 37c
5	Coalescing oil mist seperator
6	Desiccant air dryier, If ambient air temperature is expected to fall below 37°F
R&R Manufacturing can provide components that will meet the above specifications	



Unit Setup

Unloading

R&R Manufacturing equipment is carefully inspected and packed before leaving our factory. The transportation company assumes full responsibility for safe delivery of this equipment. Visible damage or loss should be noted on freight bill and signed by person making delivery. A freight claim should be filed immediately with the transportation company. If damage is unnoticed or concealed until equipment is unpacked, notify the transportation company immediately and tell them you want to file a concealed damage claim. This must be done within fifteen (15) days after delivery was made. Be sure to retain all packing material and cartons.

WARNING: Installation of this equipment should be performed only by qualified personnel with consideration for local, state and federal regulations.

Adjustments and service work should be performed only by a qualified service technician. Service & Installation is available through R&R Manufacturing.

Assembly

1. Position frames and auxiliary equipment as indicated and loosely bolt together
2. Connect all hydraulic, pneumatic and electrical connections as per schematics.
3. Rough align the machine axially by running a string from end to end and checking the frame center to the string along the frame at wheel support members.
4. Level the machine setting the distance as indicated below using the leveling feet.
    a. The elevation tolerance is ± 1/8”
5. Check axial alignment.
    a. The axial alignment tolerance is ± 1/8”
6. Recheck elevation and adjust as necessary
7. Tighten frame connecting bolts.
8. Anchor feet to concrete foundation. A minimum of 4” thick concrete is required but local soil conditions may dictate otherwise.
9. Tighten anchor bolts as per manufacturer’s recommendation.

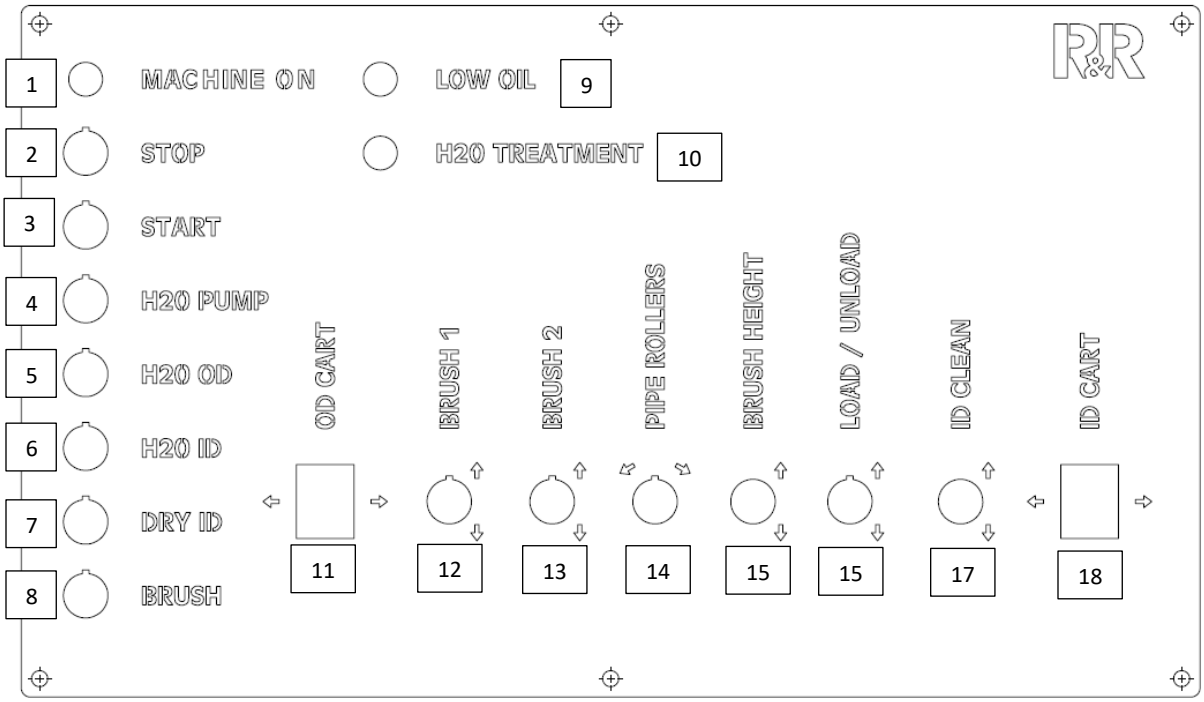
Startup

1. Ensure all hydraulic, pneumatic, and electrical lines are tight and secure.
2. Ensure hydraulic tank is filled with oil at the correct level
3. Ensure electrical motors are spinning as indicated on pump.
4. Turn hydraulic power supply on (3) and ensure:
    a. Stop button is working
    b. Dust off/on collector is working
    c. The system pressure is 1800 PSI
    d. Hydraulic oil low level switch functions properly by shutting down motor during a low oil situation.
    e. Each hydraulic and pneumatic valve is operating the correct function
        i. Function operating speed has been set at the factory, however minor adjustments may be made during start up.

Operation

Setup

The steps below are typical of most scenarios. Each action is indicated by a number in parenthesis (#) which correlates to the control drawing below. Actual control panel layout and functionality may vary.



1. Turn machine on (3), green power light (1) will come on and system pressure should be at 300-400 PSI.
2. Raise brush housing to the highest setting (15).
3. Turn OD brush motor(s) on (8).
4. Load pipe onto unit by moving load / unload lever (16).
5. Move the brush over the pipe tube body (not the upset) (11).
6. Engage the Brush (12/13).
7. Set brush housing height (15). Brush should be level when engaging the pipe.
8. Select and install desired ID cleaning head (H20 blast nozzle/rattling head).
9. Move ID cart (18) a few inches away from pipe and set the front lance support height appropriately.
10. Commence cleaning operations.

Cleaning Process

1. Ensure that all preventative maintenance is up to date and the all safety procedures are followed.
2. Load the pipe (16) with the box facing the operator.
3. Turn OD brush motor on (8).
4. Turn dust collector on (4) if applicable and cleaning by dry method; do not use during wet operations.
5. Turn pipe rollers on (43) and in the direction so that the pipe slowly walks towards the home station.
6. Move the OD cart forward (11) at the desired speed by throttling lever.
7. Select ID cleaning method (6 or 7)
    a. If cleaning with water, select H2O Pump (4) and select method (5/6).
8. Engage the brush (6) as the pipe upset is under the brush.
9. Move the ID cart forward (10) at the desired speed by throttling lever
10. Engage the ID clean (5):
    a. During dry cleaning: rattling motors should be turned on after the cutting heads clear any internal threads.
    b. During wet cleaning: spray heads may be used to clean internal threads.
11. Disengage OD brush (12/13) after the brush passes pipe.
12. Reverse OD cart direction (11)
13. Reverse ID cart direction (18) before the ID cleaning head reaches the end of the pipe. Careful consideration if using rattling head as pieces may break off if it comes out of the pipe.
14. Engage OD brush (12/13) as pipe upset is under the brush.
15. After cleaning cycle, disengage ID cleaning head (17) with consideration for 7a & 7b. Disengage OD cleaning brush (12/13).
16. Load/Unload next pipe joint (7).
17. Repeat steps 1-12.

Preventative Maintenance

- All maintenance, including lubrication and adjustments, shall be performed only by qualified and trained personnel.
- It is important that a maintenance program be established to ensure that all components are maintained in a condition which does not constitute a hazard to personnel.
- When a unit is stopped for maintenance purposes, starting devices or powered accessories shall be locked or tagged out in accordance with a formalized procedure designed to protect all persons or groups involved with the machine against an unexpected start.
- Replace all safety devices and guards before starting equipment for normal operation.

Daily

TCU, SuperMax
Daily Preventative Maintenance

Company _____
Location _____
Serial No. _____
Week _____

Perform each task at the start of each shift or one 24 hour period
Initial in each block after the task is complete and follow company procedures
Additional information can be found throughout the operations manual

Day	**Grease all points:** -Wheel assembly -Brush shaft bearings -Brush frame bearings -Paddle bearings	**Inspect Wheel Stations:** -Wheels for excessive wear -Loose or missing hardware -Hydraulic leaks	**Inspect Load/Unload System** -Wear pads for exessive wear -loose or missing hardware	**Inspect Brush Housing** -Excessive brush wear -Excessive vibration -Loose or missing hardware	**Inspect Hyd/Air System** -Leaks & loose fittings -Check oil lubrication level -Worn hoses -Correct system pressure	**Inspect Dust Collection System** -Empty debris bin -Ensure fan housing is clear of debris
1						
2						
3						
4						
5						
6						
7						

Comments:

Monthly

TCU, SuperMax
Monthly Preventative Maintenance

Company _____
Location _____
Serial No. _____
Week _____

Record data for each task
Additional information can be found throughout the operations manual

	Month											
Task	1	2	3	4	5	6	7	8	9	10	11	12
All Task/Check points on daily preventative maintenance												
Hydraulic System												
System Pressure (compare to calibrated pressure gauge)												
Return filter pressure (green/yellow/red)												
Fluid particulate count												
Sample oil and send for analysis (annually)												
Fluid flow (GPM)												
Record operating temperature (unit must be operating for 2 hrs)												
Mechanical Systems												
Cycle brush plate up and down completely 5 times												
Visually check machine alignment and level												
Check for excessive component wear or corrosion												
Electrical Systems												
Record motor amp draw												
Grease motor bearing (0.47 oz) (annually)												
Tighten all elecectrical connections (high voltage side)												
Check for excessive vibration and heat												
Check PLC/sensor cleaniness and hardware for loose components												
Manually trip motor overload protection												
Pneumatic System												
Inspect filter												
Ensure autodrain is functioning properly												
Brush pressure setting, adjust as necessary and record settings												
Check ID lance lubircation setting (level 4)												
Check for leaks and hardware for loose components												

Service Instructions

Lubrication guide

The application of grease and corrosion inhibitors are vital to operation of the unit. The table below details the appropriate lubricant grade during any service work.

Bronze bearings	Chevron SRI NLGI No. 2
Idle wheel hex head bolts	Loctite Marine Grade Anti-Seize, 34026
Motor shaft/coupling interface	Loctite Marine Grade Anti-Seize, 34026
Brush shaft bearing	Chevron SRI NLGI No. 2
Electric Motor	Chevron SRI NLGI No. 2
All other hardware not listed above	Loctite 242
All NPT connections	Loctite 567
All electrical connection	Loctite Silicon Dielectric grease, 30536

Idle wheel assembly

1. Lock out / Tag out unit as per company procedures.
2. Remove worn or damage idle wheel assembly components and replace parts as necessary.
3. Grease components as specified in lubrication guide.
4. Start machine as per Lock Out / Tag Out procedures.
5. Load and locate pipe so that the pipe tube body is over the idle wheel.
6. Adjust the wheel upwards so that the wheel slightly makes contact with the pipe.
7. Tighten to 78 ft/lbs.

Drive wheel assembly

1. Lock out / Tag out unit as per company procedures.
2. Remove worn or damage motor wheel assembly components and replace parts as necessary.
3. Grease components as specified in lubrication guide.
4. Start machine as per Lock Out / Tag Out procedures.

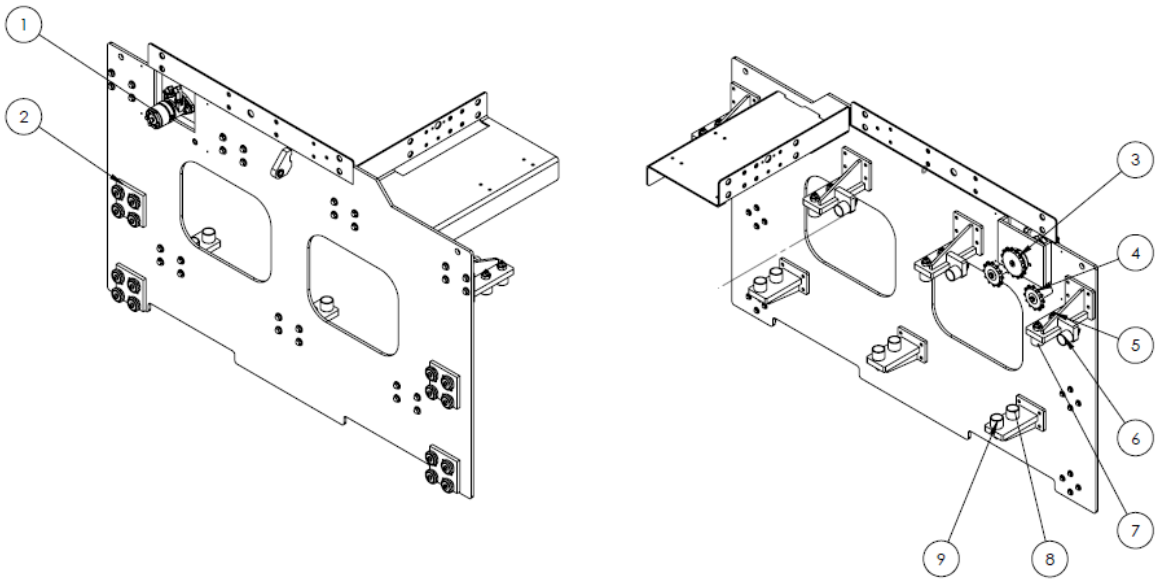
Brush housing assembly

Visit www.rr-mfg.com, and click on videos for an instructional video

1. Raise brush housing back plate to the highest position.
2. Insert brush changeover rack.
3. Lower brush housing back plate until the brush frame makes contact with changeover rack.
4. Lock out / Tag out unit as per company procedures.
5. Remove bearing bolts.
6. Loosen motor coupling and slide brush shaft coupling towards brushes.
7. Start machine as per Lock Out / Tag Out procedures.
8. Raise brush housing back plate to the highest position with brush assembly remaining in place.
9. Remove worn or damage brush housing assembly and replace parts as necessary.
10. Locate brush assembly back on changeover rack and lower brush housing frame.
11. Lock out / Tag out unit as per company procedures.
12. Install bearing bolts to 23 ft/lbs and shaft coupling.
13. Turn brush on and ensure no vibration, adjust as necessary.

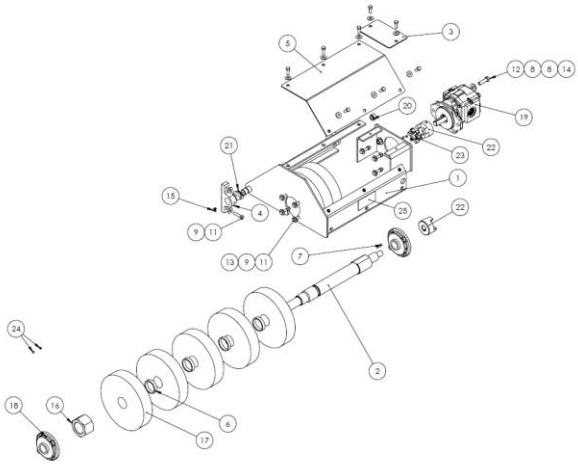
Parts

Brush Plate Assembly



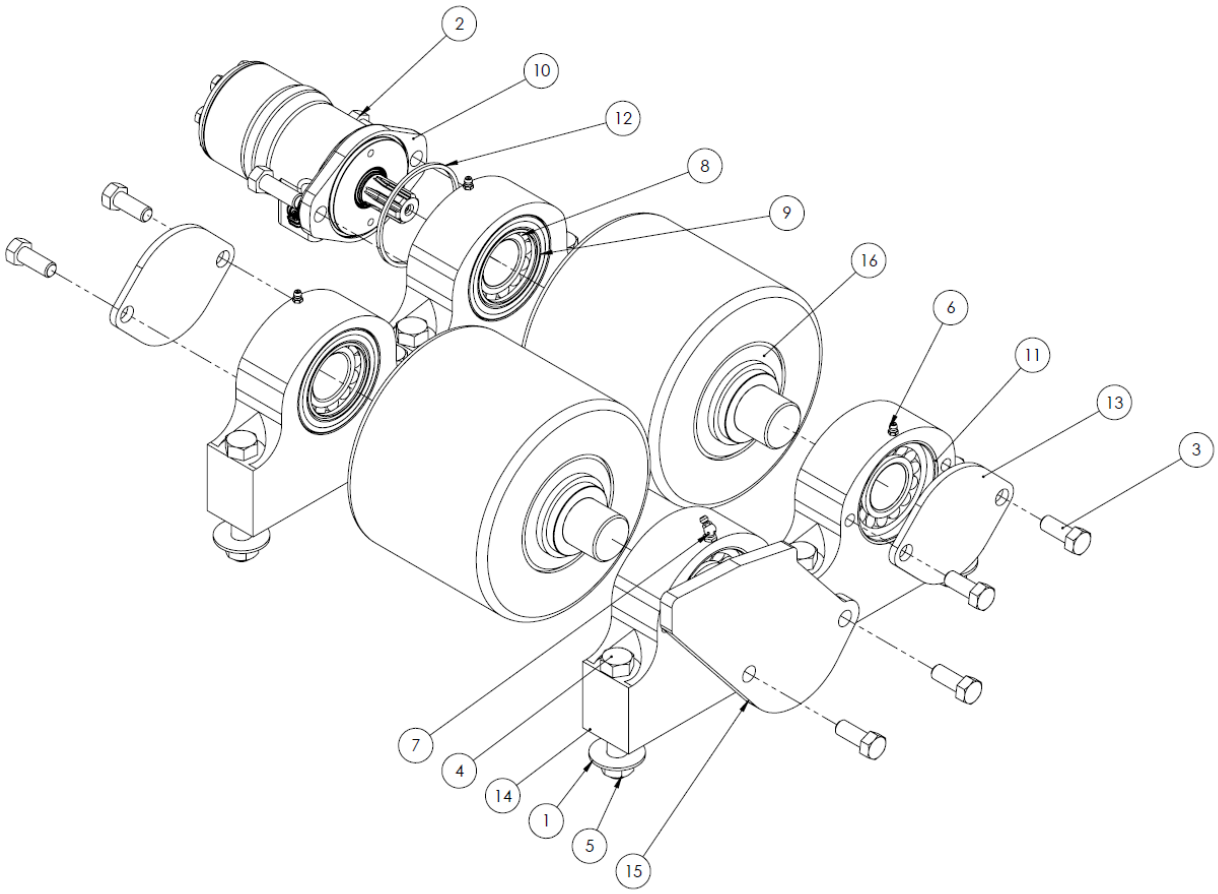
ITEM NO.	PART NO.	DESCRIPTION
1	50690	HYDRAULIC MOTOR
2	50098	WHEEL CARRIAGE ASSEMBLY
3	50350	DRIVE SPROCKET
4	50353	IDLE SPROCKET
5	50595	CARRIER WHEEL, TOP INSIDE
6	50594	CARRIER WHEEL, TOP MIDDLE
7	50594	CARRIER WHEEL, TOP OUTSIDE
8	50594	CARRIER WHEEL, BOTTOM INSIDE
9	50595	CARRIER WHEEL, BOTTOM OUTSIDE
*	50688	LIFT HYDRAULIC CYLINDER (NOT SHOWN)

Brush Assembly



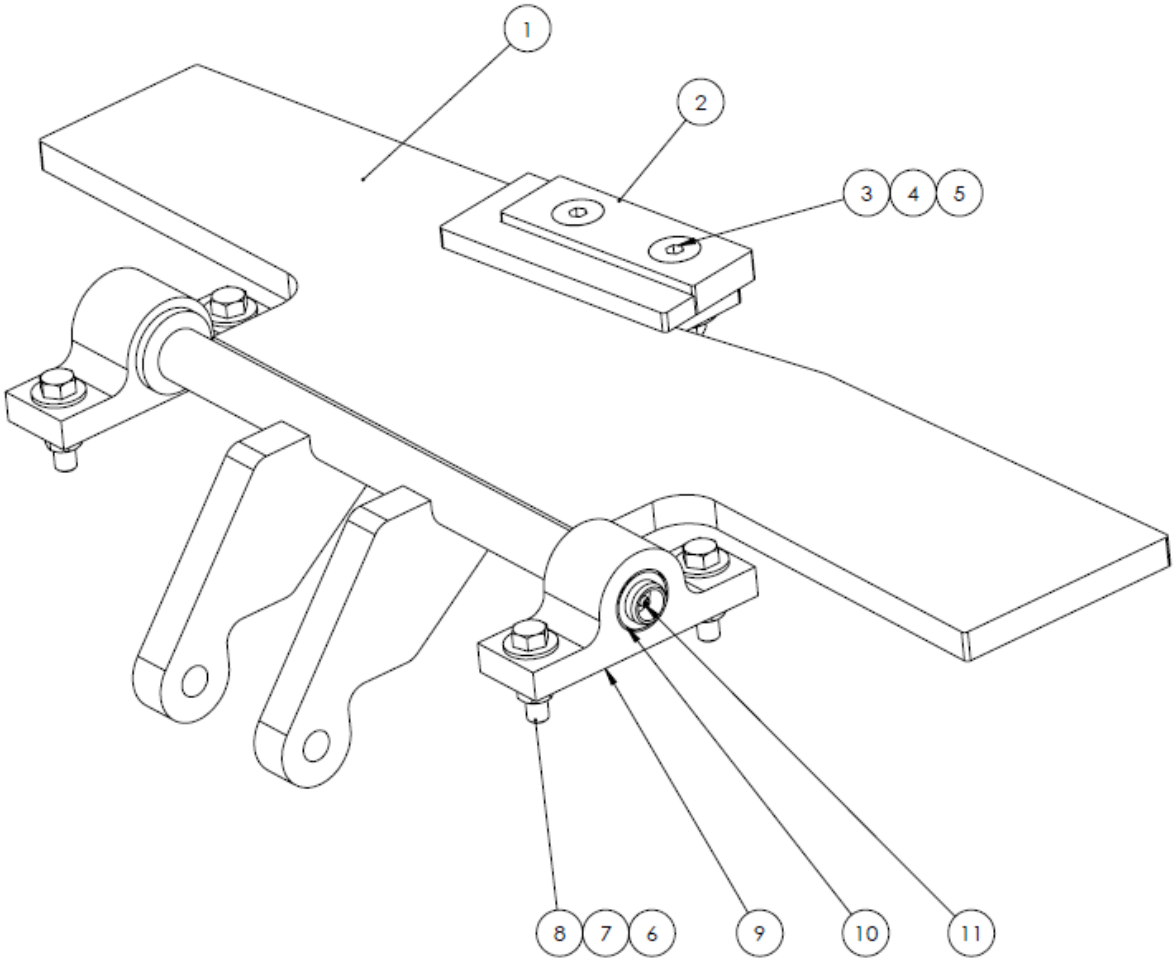
ITEM NO.	PART NO.	DESCRIPTION
1	1020-036	BRUSH FRAME
2	1050-001	BRUSH SHAFT
3	1050-005	BRUSH FRAME COUPLING COVER
4	1050-006	BRUSH FRAME BEARING BLOCK
5	1050-007	BRUSH FRAME COVER
6	1050-021	BRUSH SPACER
7	50112	MACHINE KEY
8	30000	FLAT WASHER, 0.500”
9	30007	FLAT WASHER, 0.375”
10	30662	HEX BOLT, 0.375-16 X 1”
11	30686	HEX BOLT, 0.375-16 X 1.75”
12	31182	HEX BOLT, 0.500-13 X 1.75”
13	33976	HEX NUT, 0.375-16
14	33992	HEX NUT, 0.500-13
15	34075	GREASE ZERK, 0.250-28, 90
16	34084	BRUSH SHAFT NUT
17	50150	WIRE WHEEL
18	50014	BRUSH SHAFT BEARING
19	50026	BRUSH MOTOR
20	50080	BUSHING, 0.5”
21	50082	BUSHING, 1”
22	50086	COUPLING HUB
23	50185	COUPLING SPIDER
24		BEARING SET SCREW

Wheel Station



ITEM NO.	PART NO.	DESCRIPTION
1	30014	WASHER, FLAT 0.6250
2	30071	BOLT, HEX 0.5000-13 X 1.5
3	31166	BOLT, HEX 0.5000-13 X 1.25
4	31518	BOLT, HEX 0.6250-11 X 4
5	34008	NUT, HEX 0.6250-11
6	34076	GREASE ZERK, 1/4-28, STR
7	34158	GREASE ZERK, 1/4-28, 45
8	50269	BEARING
9	50270	BEARING SEAL
10	50412	HYDRAULIC MOTOR
11	50421	GREASE COVER PLATE SEAL
12	50464	BEARING SEAL
13	9542-003	GREASE COVER
14	9542-004	BEARING HOUSING
15	9542-006	PIPE GUIDE
16	9542-100	ROLLER

Load/Unload Paddle



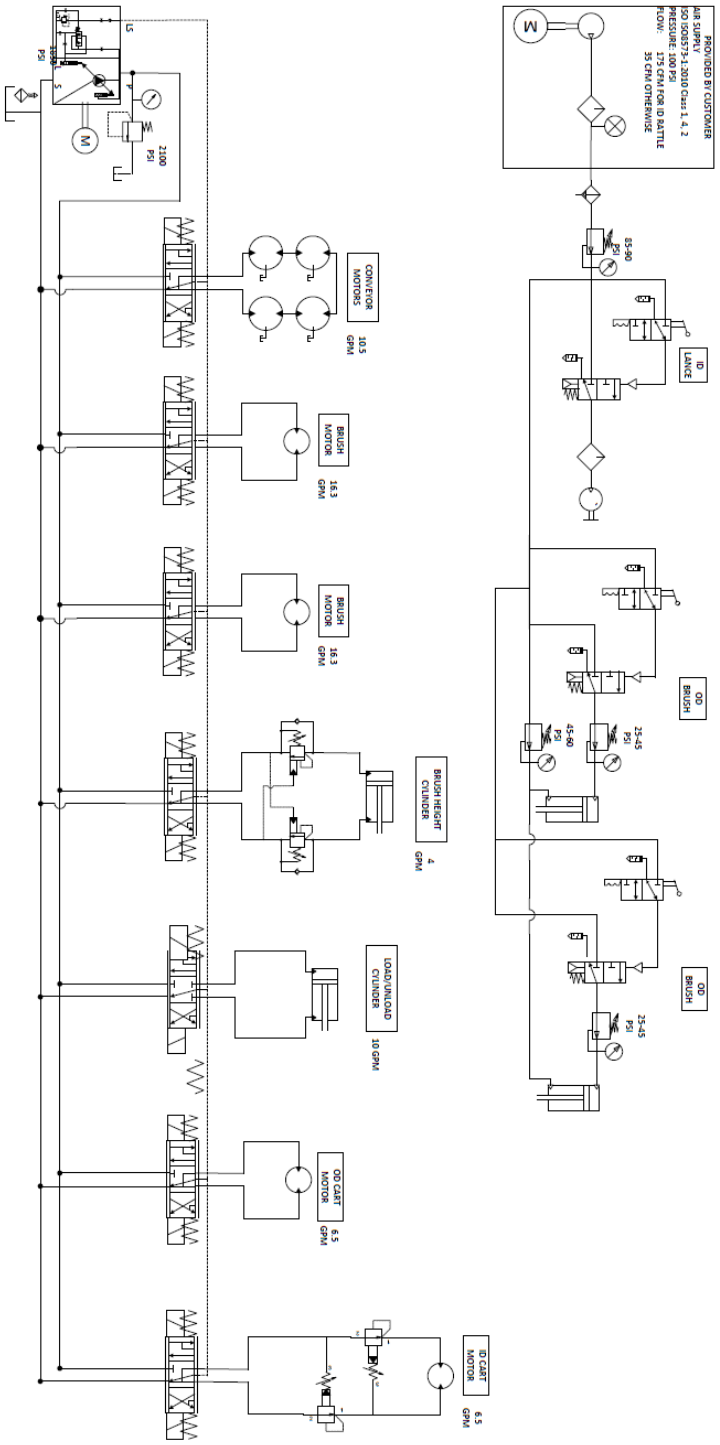
ITEM NO.	PART NO.	DESCRIPTION
1	1020-027	PADDLE
2	1045-010	WEAR TAB
3	34079	FLAT SOCKET HEAD BOLT, 0.625 – 11 X 2.5”
4	30014	FLAT WASHER, 0.625”
5	34008	HEX NUT, 0.625 - 11
6	30000	FLAT WASHER, 0.5”
7	33992	HEX NUT, 0.5-13
8	31190	HEX BOLT, 0.5-13 X 2”
9	1045-001	BEARING HOUSING
10	1045-004	BEARING
11	34076	GREASE ZERK
-	50022	HYDRAULIC CYLINDER
-	50044/50053	CLEVIS AND PIN
-	50054	REAR CYLINDER MOUNTING BRACKET

Schematics

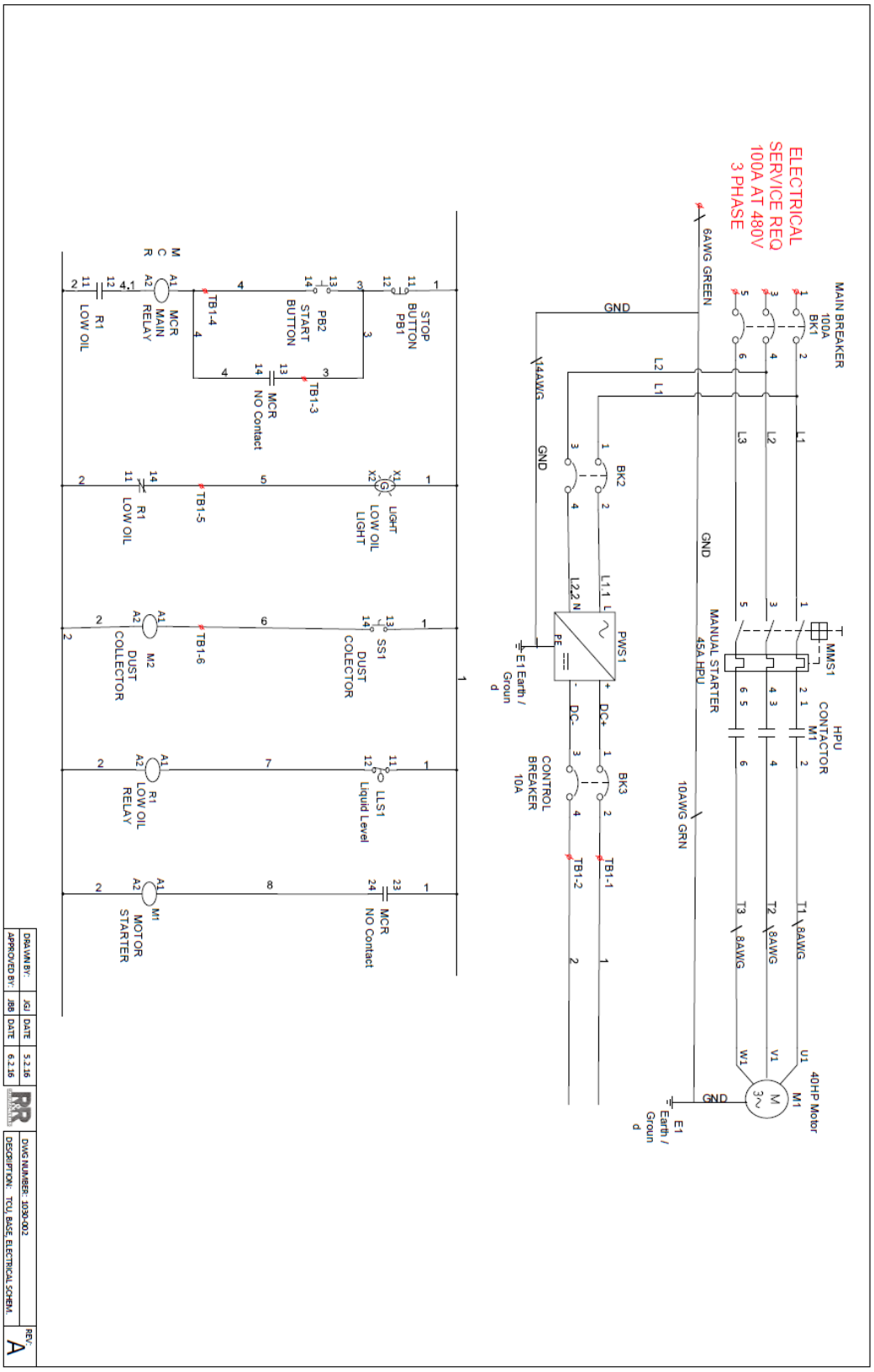
The schematics below is a general guideline, consult R&R Manufacturing for machine specific schematics.

Pneumatic/Hydraulic

TCU, SuperMax



Electrical


ELECTRICAL SERVICE REQ 100A AT 480V 3 PHASE
MAIN BREAKER 100A BK1
6AWG GREEN
GND
L1
L2
L3
MMS1
HPU CONTACTOR M1
MANUAL STARTER 45A HPU
10AWG GRN
T1 8AWG
T2 8AWG
T3 8AWG
U1
V1
W1
40HP Motor M1
E1 Earth / Ground
14AWG
BK2
PWS1
L1.1
L2.2 N
DC+
DC-
CONTROL BREAKER 10A
BK3
TB1-1
TB1-2
STOP BUTTON PB1
START BUTTON PB2
MCR NO Contact
TB1-3
TB1-4
MCR MAIN RELAY
R1 LOW OIL
TB1-5
LIGHT LOW OIL LIGHT
TB1-6
M2 DUST COLLECTOR
SS1 DUST COLLECTOR
LLS1 Liquid Level
R1 LOW OIL RELAY
MCR NO Contact
M1 MOTOR STARTER
DRAWN BY: AGI DATE 5.2.16
APPROVED BY: JBB DATE 6.2.16
DWG NUMBER: 1030-002
DESCRIPTION: TCU BASE ELECTRICAL SCHEM.
REV: A