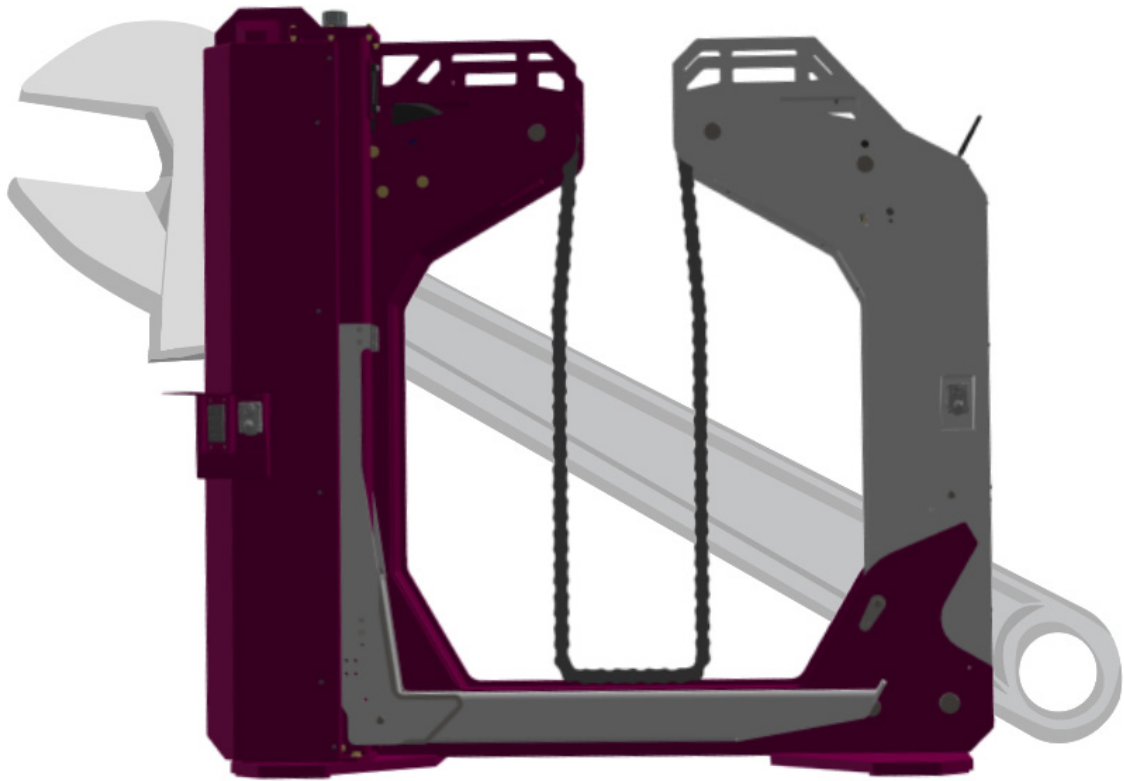


BeamChamp 360-25

Service & Repair

IBC-36025



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IBC-36025.SR

InnovaTech Manufacturing
4360 N WECCO Rd
Cedar City, UT 84721
<https://innova.tech>

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support@innova.tech

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1. Safety

Safety Alerts

Hazard Level	Signal Word	Signal Color	Signal Symbol	Signal Example	Signal Meaning
Extreme	DANGER	RED			DANGER indicates a hazardous situation which, if not avoided, WILL result in death or serious injury.
High	WARNING	ORANGE			WARNING indicates a hazardous situation which, if not avoided, COULD result in death or serious injury.
Medium	CAUTION	YELLOW			CAUTION indicates a hazardous situation which, if not avoided, MAY result in moderate injury.
Low	CAUTION	YELLOW	no symbol		CAUTION (without a symbol) indicates a hazard or practice not related to personal injury.
NA	NOTICE	BLUE	no symbol		NOTICE addresses practices not related to personal injury, but may give information for safe use.

1.1 General

This section contains the general safety precautions which must be observed during maintenance of BeamChamps. It is of utmost importance that maintenance personnel pay strict attention to these warnings and precautions to avoid possible injury to themselves or others, or damage to the equipment. A maintenance program must be followed to ensure that the machine is safe to operate.

 **WARNING: SAFETY VIOLATION!**

MODIFICATION OF BEAMCHAMPS WITHOUT CERTIFICATION BY INNOVATECH IS A SAFETY VIOLATION.

Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

The specific precautions to be observed during maintenance are inserted at the appropriate point in the manual. These precautions are, for the most part, those that apply when servicing hydraulic and electrical component parts.

 **WARNING: USE LOCK-OUT/TAG-OUT!**

Failure to use LOCK-OUT/TAG-OUT when servicing BeamChamps is a safety violation.

 **WARNING: OPERATOR RESPONSIBILITY!**

SINCE THE MACHINE MANUFACTURER HAS NO DIRECT CONTROL OVER THE FIELD INSPECTION AND MAINTENANCE, SAFETY IN THIS AREA IS THE RESPONSIBILITY OF THE OWNER/OPERATOR.

1.2 Protective Covers

BeamChamps have many covers. It is the responsibility of the maintenance personnel who removes the covers to ensure they are replaced and properly secured before a BeamChamp is returned to service.



1.3 Hydraulic System Safety

It should be noted that the BeamChamp hydraulic system operates at extremely high, potentially dangerous pressure. Every effort should be made to relieve any system pressure prior to disconnecting or removing any portion of the system.

Relieve system pressure by cycling the applicable control several times with the engine stopped and ignition on, to direct any line pressure back into the reservoir. Pressure feed lines to system components can then be disconnected with minimal fluid loss.

- Do not allow long hair, wear unrestrained, or loose-fitting clothing, or neckties that could get entangled in equipment.
- Observe and obey all warning and cautions on machine and in service manual.
- Keep oil, grease, water, etc. wiped from standing surfaces and handholds.
- Before making adjustments, lubricating or performing any other maintenance, follow lockout and blockout procedures.
- Keep all support equipment and attachments stowed in their proper place.

1.4 Electrical System



DANGER: HIGH VOLTAGE!

- The BeamChamps are powered by 3 phase 480 volt which is a considerable shock hazard. Ensure the power is disconnected before working on the electrical system.

The hydraulic pump is powered by a 480 volt 3 phase motor. The motor is controlled by a variable frequency drive and a programmable controller 24 volt.

- Follow appropriate NFPA 70E guidelines for appropriate arc-flash rated PPE when testing electrical systems of the BeamChamps. Do not service electrical system without following lockout/tagout procedures.

1.5 Maintenance



WARNING: SAFETY COMPLIANCE!

FAILURE TO COMPLY WITH SAFETY PRECAUTIONS LISTED IN THIS SECTION MAY RESULT IN MACHINE DAMAGE, PERSONNEL INJURY OR DEATH AND IS A SAFETY VIOLATION.

- Ensure replacement parts or components are identical or equivalent to original parts or components.
- Remove all rings, watches and jewelry when performing any maintenance.



2. Service & Repair Prep

2.1 Stabilize Moving Parts

1. Remove load from Chain.
2. Lower Support Arm completely.
3. Extend Chain completely (cylinder completely down).
4. Close Jaw completely.

2.2 Lifting BeamChamps

⚠ WARNING **ELECTRICAL CORDS!** Failure to unplug BeamChamp before lifting could result in serious injury or death.

⚠ DANGER **CRUSH HAZARD!** Keep body and body parts out from under suspended load.

1. Apply Lockout/tagout
1. Unplug BeamChamp
2. Use Fork Pockets to lift BeamChamp
3. Avoid lifting BeamChamp higher than necessary.
4. Set BeamChamps on stable surface, such as blocks, to perform service that requires them to be lifted.

2.3 Protective Covers

All maintenance to the BeamChamps is accessed by removing a protective cover. Each BeamChamp has thirteen protective covers. (See Safety:1.2 Protective Covers.)

A. BASE FRAME TOP COVER

ACCESS:

- Drive System
- Drive Motor

B. JAW TOP COVER

ACCESS:

- Chain Tension System,
- Motor

C. BASE FRAME BACK COVER

ACCESS:

- Chain Slack Cylinder,
- Wiring,
- E-Stop Module

D. HINGED COVER

ACCESS:

- Hydraulic Filter,
- Support System & Cylinder

E. JAW INSIDE COVERS

ACCESS:

- Jaw Open/Close Cylinders
- Chain Tension System, Brake Caliper,
- Tension Motor



F. BASE FRAME INSIDE COVERS

ACCESS:

- Hydraulic Valves,
- Hydraulic Pump,
- Electric Motor,
- Chain Drive System,
- Flange bearing grease zerks

G H I. FLOOR COVERS

ACCESS:

- Chain Guide
- Hoses and Wires

J. HIGH VOLTAGE COVER

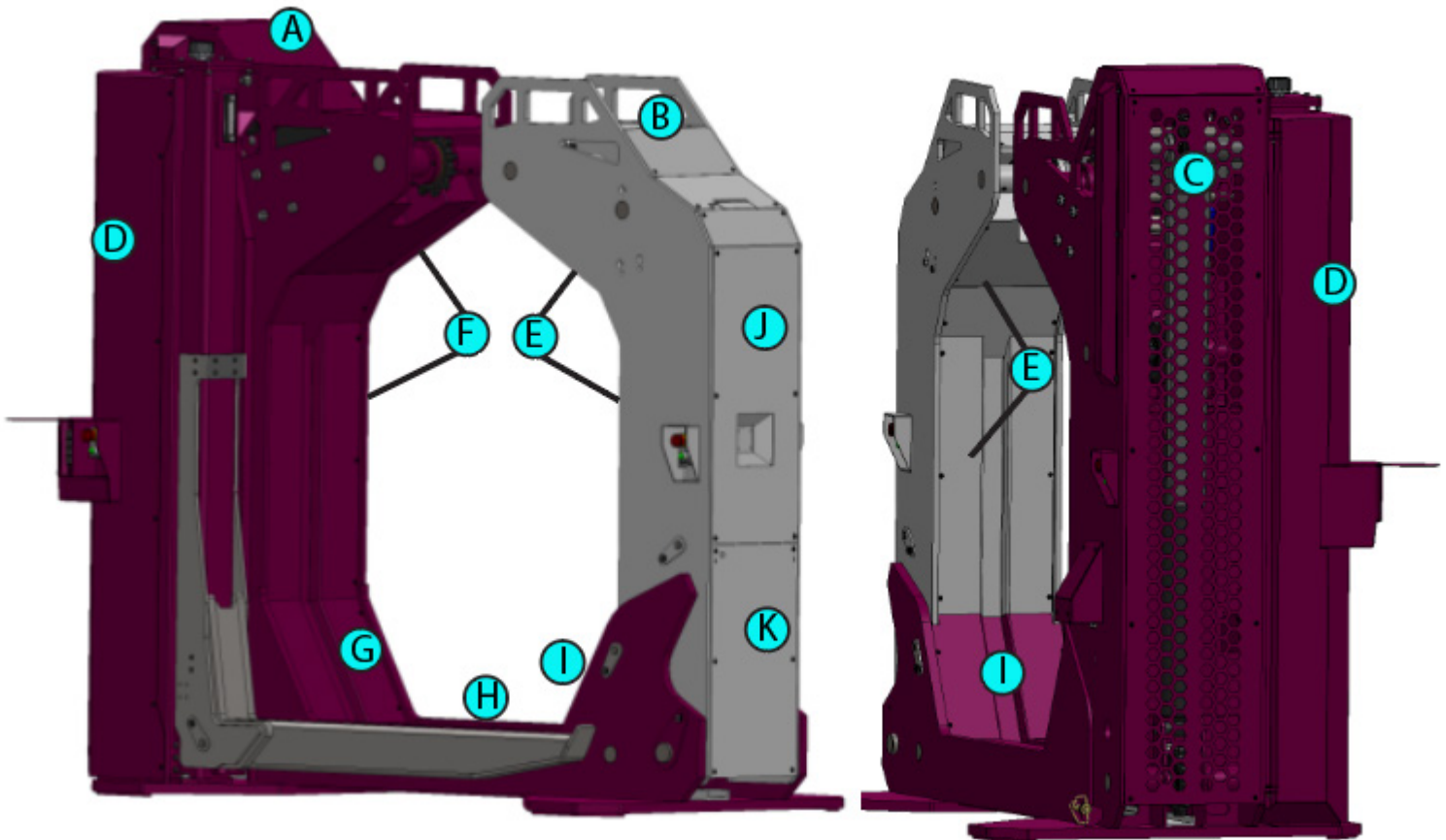
Access:

- Main Power Switch
- VFD (Variable Frequency Drive)
- Low Voltage Power Supply
- Breakers

K. LOW VOLTAGE COVER

Access:

- Controller
- Distribution Module
- Remote Control Module
- Can Network Hub



3. Grease Zerks

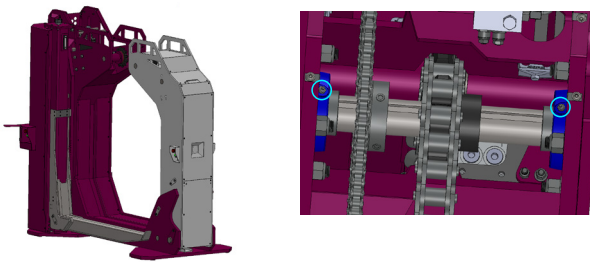
There are six grease zerks, 2 on the Flange bearings behind the Base Frame Inside Cover and 4 on the Hydraulic Cylinders behind the Inside Jaw Cover. (See Footer nomenclature E, F, I.)

3.1 Flange Bearings

Access: Base Frame Top Cover

Lubricate every 3 months

2 zerks



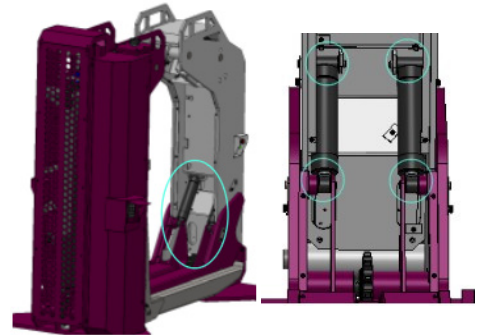
3.2 Hydraulic Cylinders

Remove Lower Voltage Cover to access upper grease zerks.

Remove Inside Jaw Cover to access lower grease zerks.

Lubricate every 3 months

4 zerks



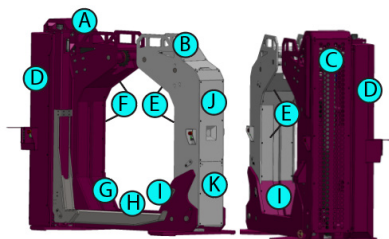
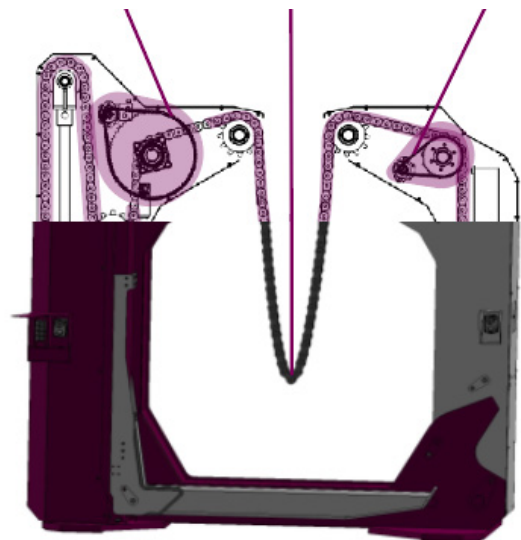
4. Service Chain

Chain Lubrication

1. Follow Lock-out procedure.
2. Lubricate with chain lube
 - Drive Chain
 - Main Chain
 - Tension Chain

Lubricate Chains every 6 Months.

Drive Chain Main Chain Tension Chain

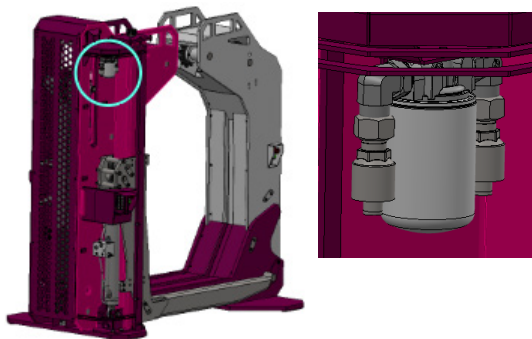


5. Service Hydraulics

5.1 Hydraulic Filter

Access: Hinged Cover

Change filter every 3 months



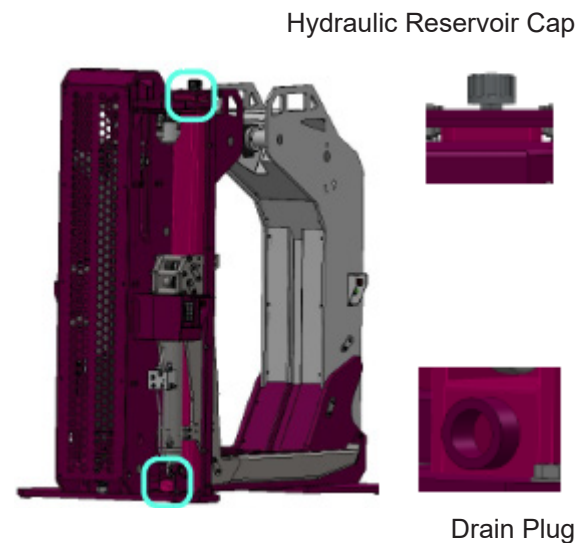
1. Follow Lockout procedure.
2. Remove Filter.
3. Install new filter.
 - Lubricate filter seal.
 - Screw filter on filter base until rubber seal touches filter base.
 - Once filter touches base, tighten filter 3/4 of a turn.

The hydraulic filter base is installed high on the BeamChamp to keep it above hydraulic oil level.

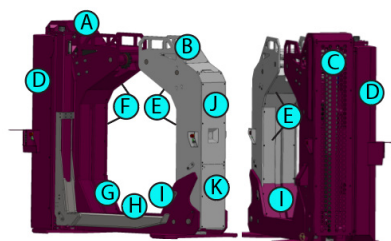
5.2 Hydraulic Oil Change

Access: Hinged Cover

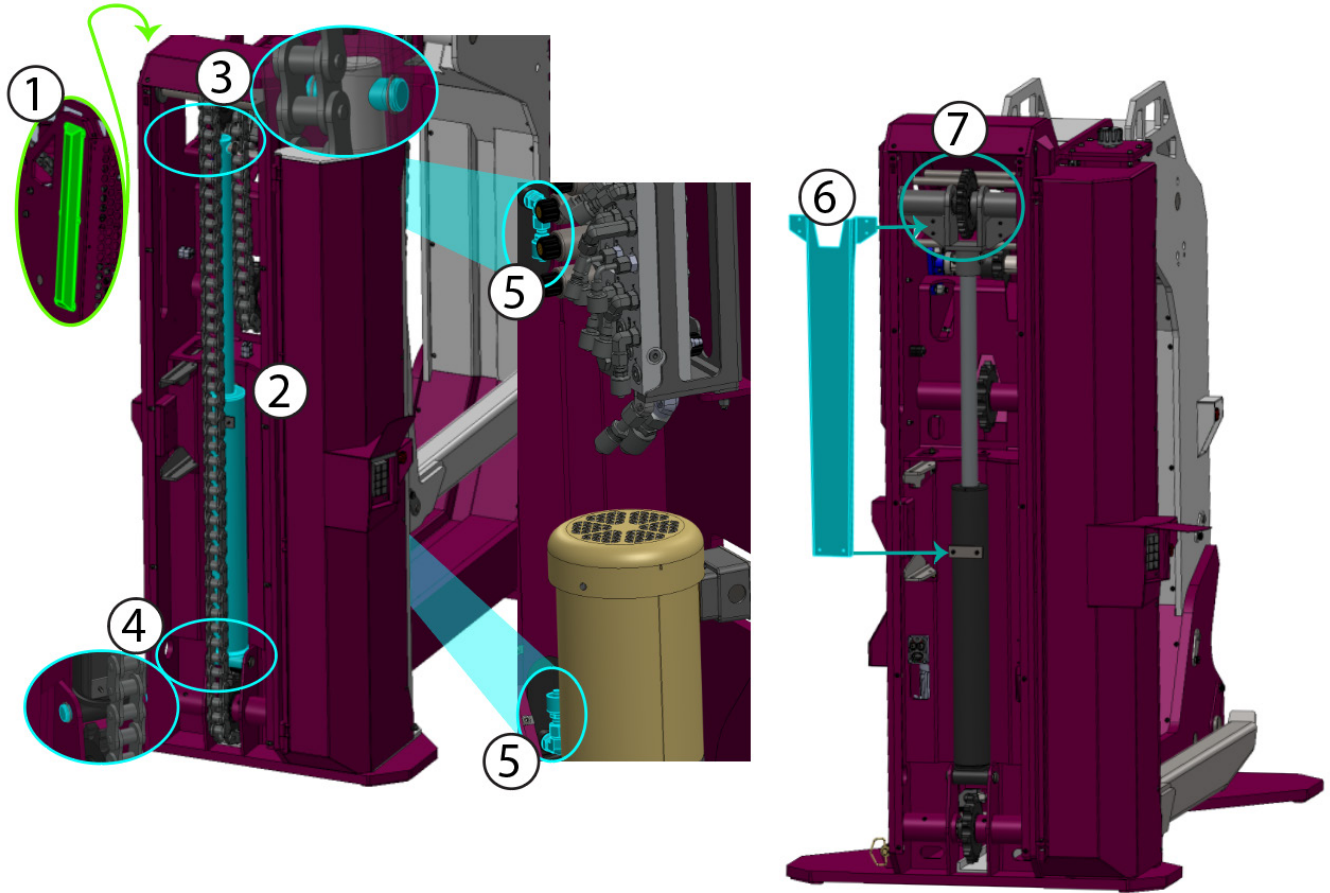
Change Hydraulic Oil every 6 Months



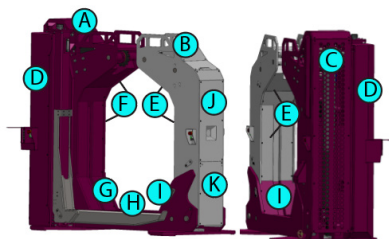
1. Follow Lockout procedure
2. Close Jaw
3. Lower Support Arm
4. Lower the chain (Retract chain cylinder)
5. Raise and stabilize BeamChamp (See Section 2:2)
6. Place a container that can hold 20 gallons below drain plug
7. Drain oil completely. Replace drain plug
8. Fill Reservoir with clean hydraulic oil up to sight glass. (AW-46 recommended)



6. Chain Slack Cylinder



- 1. Roller Guide Cover
- 2. Chain Slack Cylinder
- 3. Upper Pin Bolt
- 4. Lower Mounting Pin
- 5. Hydraulic Fittings
- 6. Cylinder Guard
- 7. Sprocket Assembly



To access the Chain Slack Cylinder, remove the Base Frame Back Cover (See Footer nomenclature - B) and open the Hinged Cover (See Footer nomenclature - C).

6.1 Replace Chain Slack Cylinder

1. Follow Lockout procedure.
2. Run the "Rotate Beam Function" until a master link is near the Chain Slack Sprocket.
3. Remove the Master Link. Disconnect the #160 Chain and set aside.
4. Remove Cylinder Guard by removing the 4 mounting bolts.
5. Remove the Base Frame Inside Covers and the Floor Covers.
6. Disconnect the hydraulic hoses and remove the hydraulic fittings from the cylinder.
7. Remove the Pin/Bolts.
8. Lift the Chain Slack Sprocket Assembly off the Chain Slack Hydraulic Cylinder. Place a 6" block inside of the roller guides.
9. Carefully rotate the cylinder flat.
10. Remove the lower cylinder mounting pin retaining ring.
11. Slide the pin out to remove the Chain Slack Cylinder.

To install, reverse removal procedure.

6.2 Replace Chain Slack Sprocket, Pin, Sliders

1. Follow lockout procedures.
2. Run the Rotate Beam function until a master link is near the Chain Slack Sprocket.
3. Remove the master link and disconnect the #120 Chain to move it out of the way.
4. Remove the Cylinder Guard by removing the 4 mounting bolts
5. Remove the Upper Cylinder Pin / Bolt

6. Remove the two Roller Bearings retaining rings
7. Carefully slide the two Roller Bearings off the Chain Slack Sprocket Pin.

NOTICE

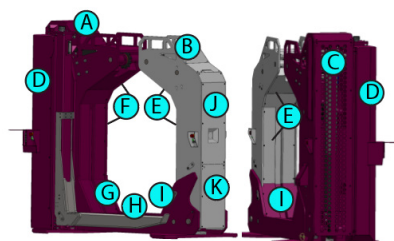
SMALL ROLLER PINS! There are small roller pins that can fall out of the Roller Bearings if the Roller Bearing is not handled carefully.

8. Lift the Chain Slack Sprocket Assembly off the Chain Slack Hydraulic Cylinder and place a 6 in block inside one of the roller guides.
9. Rotate the Chain Slack Sprocket Assembly 90 degrees so that the Hydraulic Cylinder mating part is facing the back of the Base Frame.
10. Use a rubber mallet to tap down the side of the Chain Slack Sprocket Assembly that does not have the block under it. You may need to tap the opposite side up until the Chain Slack Sprocket Assembly rotates out of the roller guides.
11. Remove the Chain Slack Sliders and Slider Plates from the Chain Slack Cylinder Bracket
12. Loosen the set screws on the Chain Slack Sprocket.
13. Slide the Sprocket out of the Chain Slack Cylinder Bracket.

NOTICE

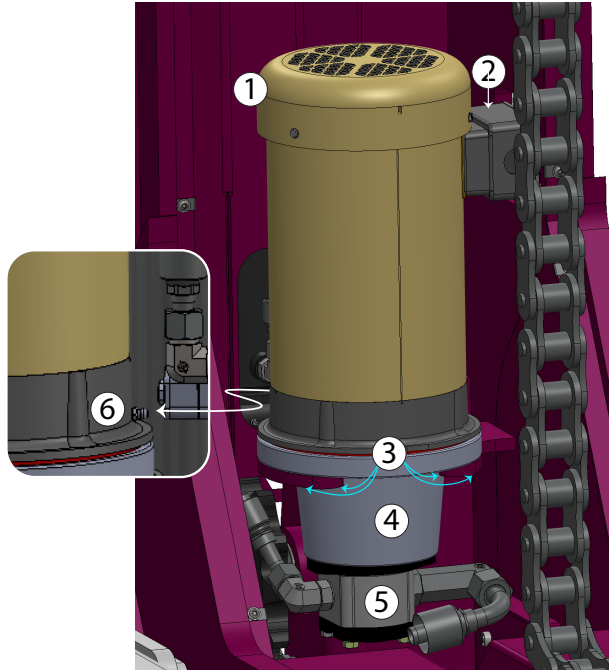
GREASE ROLLER BEARINGS! Thoroughly grease both Roller Bearings before installing).

To install reverse removal procedures.



7. Electric Motor & Hydraulic Pump

To access the Electric Motor and Hydraulic Pump, remove the Base Frame Inside Covers and one of the Floor Covers. (See Footer nomenclature F & G)



1. Electric Motor
2. Electric Access
3. Mounting Bolts (qty 4)
4. Pump to Motor Adapter
5. Pump
6. Grease Zerker

7.1 Remove Motor/Pump Assembly

1. Follow Lockout procedure.
2. Drain hydraulic oil tank. (See 6.2)
3. Remove Electrical Access Cover.
4. Disconnect wires.
5. Loosen cord grip and slide wire out of cord grip.

6. Disconnect hydraulic hoses from pump. (You may need a crow's foot wrench to reach the fittings.)
7. Remove mounting bolts and lift motor and Pump Assembly out of Base Frame.

7.2 Replace Hydraulic Pump

1. Follow Lockout procedure.
2. Remove Motor and Pump Assembly (See 7.1)
3. Remove the 2 mounting bolts and slide the pump out of the Pump to Motor Adapter.
4. Transfer any hydraulic fittings from the old pump to the new pump, or attach new fittings.

NOTICE REPLACE O-RINGS TO PREVENT LEAKS!

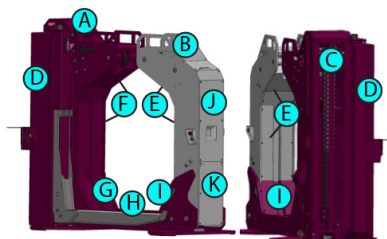
To install, reverse removal procedure.

7.3 Replace Electric Motor

1. Follow Lockout procedure.
2. Remove Motor and Pump Assembly. (See 7:1)
3. Remove the 4 bolts that mount the Pump to Motor Adapter.
4. Slide motor off the Pump to Motor Adapter.

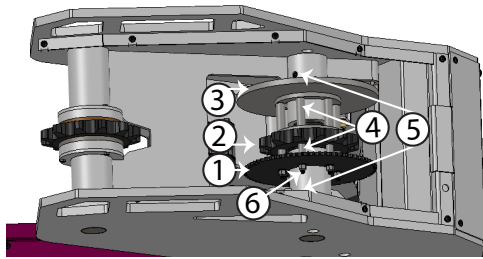
To install, reverse removal procedure

NOTICE FLUSH SYSTEM! When replacing a pump, flush entire system of debris before installing new pump.



8. Chain Tension System

To access the Chain Tension System, remove the two Jaw Inside Covers (I) and the Jaw Top Cover (H). See *Footer*



- | | |
|------------------|-----------------------|
| 1. #60 Sprocket | 4. Spacers |
| 2. #160 Sprocket | 5. Set Screws |
| 3. Brake Disc | 6. Mounting Bolts (6) |

3. Disconnect hydraulic hoses.
4. Dismount the Tension Motor by removing the two mounting bolts.

NOTICE **SPACER!** between motor and mounting bracket.

5. Transfer or replace the hydraulic fittings to the new motor. Transfer the sprocket to the new Motor.

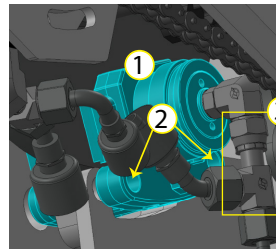
To install, reverse removal procedure.

8.1 Replace #60 Chain

1. Follow Lockout procedure.
2. Loosen the #60 Tension Chain by loosening the 3 mounting bolts on the Tension Motor.
3. Find the Master Link on the #60 Drive chain and remove the retaining clip that holds the Master Link in place.
4. Remove the Chain from the larger sprocket.

To install, reverse removal procedure.

8.3 Replace Brake Caliper

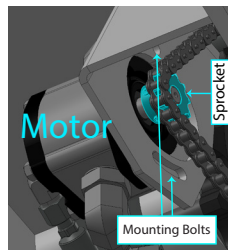
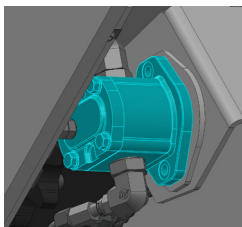


1. Brake Caliper
2. Mounting Bolts
3. Hydraulic Fitting

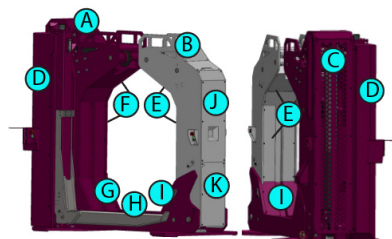
1. Follow Lockout procedure.
2. Disconnect hydraulic hoses.
3. Loosen brake pad tension spring.
4. Dismount brake caliper by removing the two mounting bolts.

To install, reverse removal procedure.

8.2 Replace Tension Motor



1. Follow Lockout procedure.
2. Remove the #60 Tension Chain. (See 8.1)



8.4 Replace Smaller #60 Sprocket

1. Follow Lockout procedure.
2. Remove the #60 Tension Chain.
3. Loosen the 2 set screws that mount Smaller #60 Sprocket.
4. Slide the sprocket off the motor shaft.

NOTICE **KEY!** Ensure the small key in the key-way is not lost while sliding sprocket off motor shaft.



To install, reverse removal procedure

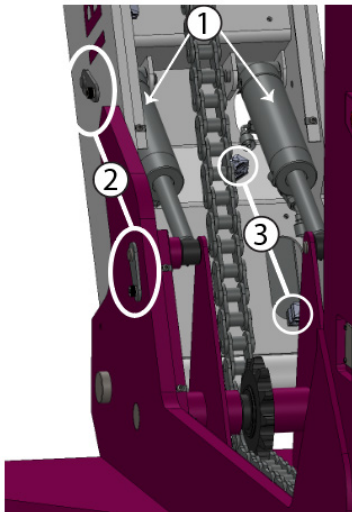
8.5 Replace Larger #60, #160 Sprockets, Brake Disc

1. Follow Lockout procedure.
2. Remove #60 Tension Chain. (See 8.1)
3. Remove Brake Caliper (See 8:3)
4. Separate Brake Disc and larger #60 Sprocket from the #160 Sprocket by removing the 6 mounting bolts, nuts, and spacers.
5. Loosen the set screws on the #160 Sprocket
6. Loosen the 2 set screws that mount the Tension Sprocket Pin.
7. Slide the Tension Sprocket Pin out of the Jaw Frame and the #160 Sprocket.

To install, reverse removal procedure

9. Jaw Open & Close Cylinders

To access the Jaw Open & Close Cylinders, remove the Jaw Inside Covers and one of the Floor Covers. (See Footer nomenclature E & I.)

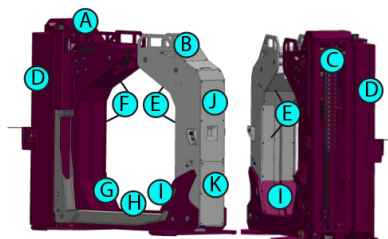


1. Open and Close Cylinders
2. Cylinder Pins
3. Hose Clamps

Removal Procedure

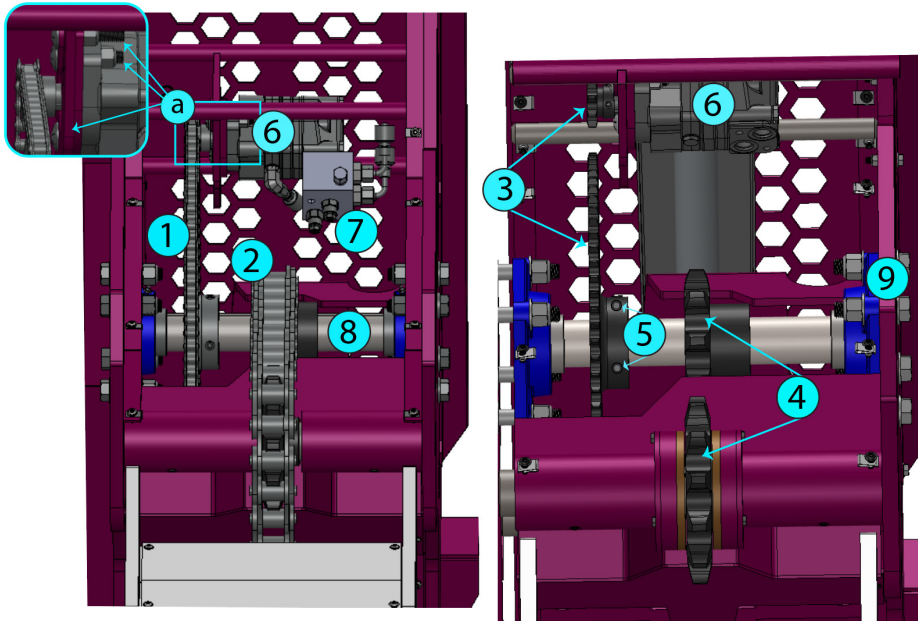
1. Follow Lockout procedure.
2. Remove the Hose Clamp Mounts.
3. Remove the screws securing the cylinder pins to the Base Frame and Jaw.
4. Lift the Cylinders out of the Beam Champ.
5. Disconnect and cap the hydraulic hoses from the Jaw Open / Close Cylinders.

To install reverse removal procedures.



10. Drive System

To access the drive system, remove the Base Frame Top Cover and the Base Frame Inside Covers. (See Footer nomenclature A, D, & F.)



1. #60 Chain
2. #160 Chain
3. #60 Sprockets
4. #160 Sprockets
5. Set Screws
6. Drive System Motor
 - a. Mounting Bolts (qty 3)
7. Hydraulic Block and Fittings
8. Keyed Drive Shaft
9. Flange Bearings (qty 2)

10.1 Replace Drive Chain

1. Follow Lockout procedure.
2. Loosen the #60 Drive Chain by loosening the 3 mounting bolts on the Drive Motor.
3. Find the master link on the #60 Drive Chain and remove the retaining clip that holds the master link in place. Separate the Chain.
 - The drive axle will spin freely once the chain is removed.
 - You may need to rotate the drive axle to remove the chain from the bigger #60 Sprocket.

To install, reverse removal procedures.

CAUTION CHAIN TENSION! Set tension on chain to prevent slipping.

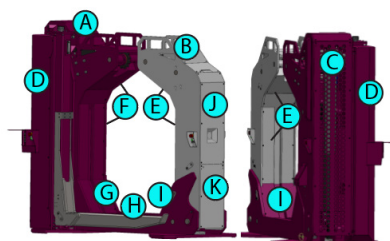
10.2 Replace Smaller #60 Drive Sprocket

1. Follow Lockout procedure.
2. Remove #60 Drive Chain. (See 10.1)
3. Loosen the 2 set screws on the sprocket.
4. Slide the sprocket off the Drive Motor shaft.

NOTICE **KEY!** Ensure the small key in the key-way is not lost while sliding sprocket off motor shaft.

To install, reverse removal procedures.

CAUTION **PREVENT PREMATURE WEAR!** Ensure the Smaller #60 Chain Drive Sprocket and the Larger #60 Chain Drive Sprockets are lined up before tightening the set screws to prevent wear on sprockets and chain.



10.3 Replace Drive Motor

1. Follow Lockout procedure.
2. Remove #60 Drive Chain. (See 10.1)
3. Disconnect hydraulic hoses and plug the hoses and ports
4. Dismount the motor by removing the 3 mounting bolts.

NOTICE **SPACER!** There is a spacer between the motor and mounting bracket.

5. Transfer the holding valve block, any hydraulic fittings, and the sprocket to the new motor. (See 10.2)
6. Mount the motor using the 3 mounting bolts. Snug tighten the bolts as you will need to set the chain tension later
7. Reconnect hydraulic hoses.

NOTICE **REPLACE O-RINGS!** to prevent oil leaks.

8. Install Drive Chain (See 10.1)

10.4 Replace Drive Axle Bearings

1. Follow Lockout procedure.
2. Remove #60 Drive Chain. (See 10.1)
3. Lift the #160 chain off the #160 Drive Sprocket and tie it back to the Base Frame Support Rod.
4. Dismount the entire Drive Axle and sprockets by removing the 8 mounting bolts that mount flange bearings to the Base Frame.

To install, reverse removal procedure.

10.5 Service Larger #60 Drive Sprocket

1. Follow Lockout procedure.
2. Remove Drive Axle Assembly (See 10.4)

3. Remove sprocket position retainers on the side of the larger sprocket.
4. Loosen the 2 set screws.
5. Slide the sprocket off the keyed drive shaft.
6. Transfer the piece of key stock to the new larger #60 Chain Drive Sprocket.

To install, reverse removal procedures.

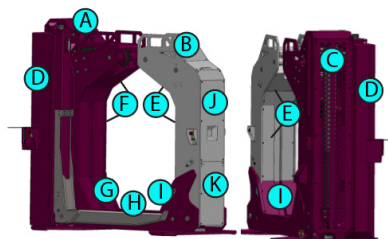
CAUTION **PREVENT PREMATURE WEAR!** Once the Drive Axle Assembly is installed, reposition the Larger #60 Chain Drive Sprocket to line up with the smaller #60 Chain Drive Sprocket.

10.6 Service #160 Drive Sprocket

1. Follow Lockout procedure.
2. Remove Drive Axle Assembly. (See 10.4)
3. Remove sprocket position retainers on the side of the #160 Chain Drive Sprocket.
4. Loosen the 2 set screws.
5. Slide the sprocket off the keyed drive shaft.
6. Transfer the piece of key stock to the new #160 Chain Drive Sprocket.

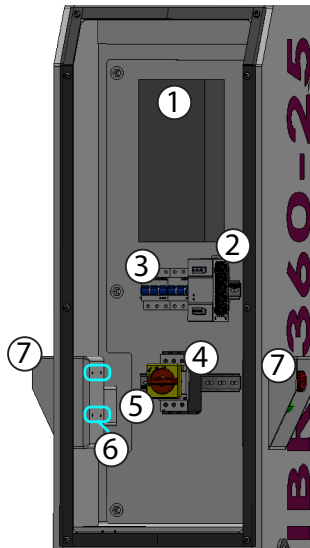
To install, reverse steps 1-4.

CAUTION **PREVENT PREMATURE WEAR!** Once the Drive Axle Assembly is installed, reposition the #160 Chain Drive Sprocket to line up with the Upper Base Frame Sprocket and the Idler Sprocket.



11. High Voltage

To access the High Voltage Panel, remove the High Voltage Cover. (See Footer nomenclature J)



⚠ DANGER

1. VFD
2. AC to DC 24 V Module
3. Smaller Breakers
4. Main Breaker
5. Power Switch
6. E-Stop Mounting Screws
7. E-Stops

11.1 Replace VFD^{Variable Frequency Drive}

1. Follow Lockout procedure.
2. Disconnect the wires going to the motor.
3. Disconnect the wires going into the VFD.
4. Disconnect the CAN wires and the start wire.
5. Dismount the VFD from the DIN rail.

To install reverse removal procedure

11.2 Replace AC to DC 24V Module

1. Follow Lockout procedure.
2. Disconnect the wires going into the AC to DC Module.
3. Disconnect the wires coming out of the AC to DC Module.
4. Dismount the AC to DC module from the DIN rail.

To install the reverse removal procedures.

11.3 Replace Power Switch

1. Follow Lockout procedure.
2. Remove the Power Switch Rod from the Main Breaker.
3. Dismount the switch from the High Voltage Cover by removing the 4 mounting screws.

To install reverse removal procedures.

11.4 Replace Main Breaker

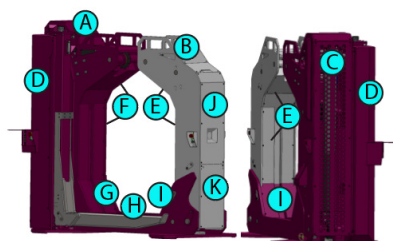
1. Follow Lockout procedure.
2. Disconnect the wires going into the Main Breaker.
3. Disconnect the wires going out of the Main Breaker.
4. Dismount the Main Breaker from the DIN rail.
5. Transfer the Power Switch Rod to the new Breaker.

To install reverse removal procedures.

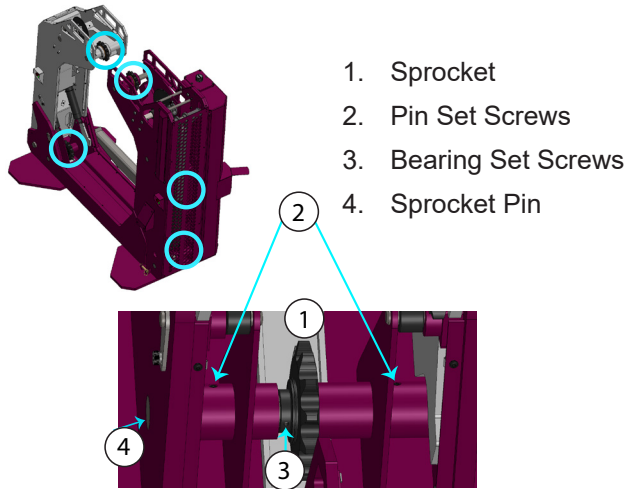
11.5 Replace Small Breakers

1. Follow Lockout procedure.
2. Remove the Breaker connecting devices.
3. Disconnect the wires coming out of the Breakers.
4. Dismount the Breakers from the Din rail.

To install reverse removal procedures.



12. Idler Sprockets



12.1 Replace Upper Jaw Idler Sprockets or Bushings

1. Follow Lockout procedure.
2. Loosen the two set screws that mount the Upper Jaw Sprocket Pin.
3. Remove the 6 bolts that mount the two bushing and spacer assemblies to the Jaw Frame.
4. Slide the Upper Jaw Sprocket Pin out of Jaw Frame.

To install reverse removal procedures.

12.2 Replace Upper Base Frame Idler Sprocket or Bushings

1. Follow Lockout procedure.
2. Loosen the two set screws that mount the Upper Base Frame Sprocket Pin.
3. Remove the 6 bolts that mount the two bushing and spacer assemblies to the Base Frame.
4. Slide the Upper Base Frame Sprocket Pin out of Base Frame.

To install reverse removal procedures.

12.3 Replace Lower Jaw Idler Sprocket

1. Follow Lockout procedure.
2. Open the Jaw and remove the Floor Cover closest to the Jaw. (See pg 17 Footer nomenclature I.)
3. Loosen the two set screws that mount the Lower Jaw Sprocket Pin.
4. Loosen the two set screws in the Lower Jaw Sprocket bearing.
5. Slide the Lower Jaw Sprocket Pin out of Base Frame.

To install reverse removal procedures

12.4 Replace Lower Base Frame Idler Sprocket

1. Follow Lockout procedure.
2. Remove the Base Frame Back Cover. (See pg 17 Footer nomenclature C.)
3. Loosen the two set screws that mount the Lower Base Frame Sprocket Pin.
4. Loosen the two set screws in the Lower Base Frame Sprocket bearing.
5. Slide the Lower Base Frame Sprocket Pin out of Base Frame.

To install reverse removal procedures

12.5 Replace Center Base Frame Idler Sprocket

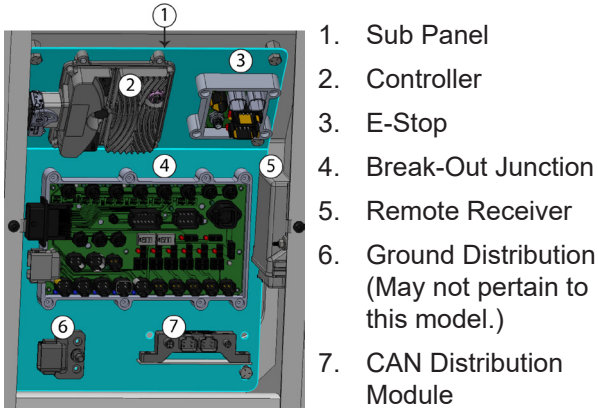
1. Follow Lockout procedure.
2. Remove the Base Frame Inside Covers. See pg 17 Footer nomenclature F.)
3. Loosen the two set screws that mount the Center Base Frame Sprocket Pin.
4. Loosen the two set screws in the Center Base Frame Sprocket bearing.
5. Slide the Center Base Frame Sprocket Pin out of Base Frame.

To install reverse removal procedures



13. Low Voltage

To access the Low Voltage System, remove the Low Voltage Cover. (See Footer nomenclature K.)



13.1 Remove Sub-panel Assembly

1. Follow Lockout procedure.
2. Disconnect all the electrical connectors from the Junction Module, E-stop module, Remote Control module and CAN Distribution Module.
3. Dismount the Sub-panel Assembly from the Jaw Frame.

To install reverse removal procedures.

13.2 Replace Controller

1. Follow Lockout procedure.
2. Remove Sub-panel Assembly
3. Disconnect the controller from the Breakout Junction Module.
4. Unmount the Controller from the Sub-panel by removing the 4 mounting bolts.

To install reverse removal procedures.

13.3 Replace Breakout Junction Module

1. Follow Lockout procedure.
2. Remove Sub-panel Assembly.
3. Disconnect the controller from the Breakout Junction Module.
4. Unmount the Breakout Junction Module from the Sub-panel by removing the 4 mounting screws.

To install reverse removal procedures.

13.4 Replace Remote control

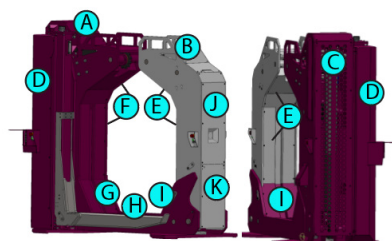
1. Follow Lockout procedure.
2. Remove Sub-panel Assembly. (See 13.1)
3. Unmount the Remote-Control module from the Sub-panel by removing the 2 mounting bolts.

To install, reverse removal procedures.

13.5 Replace CAN Distribution Module

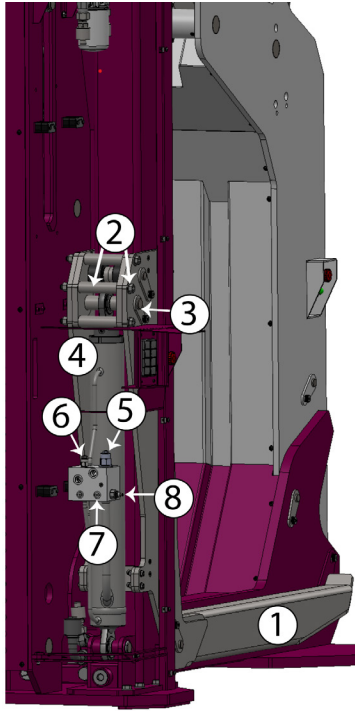
1. Follow Lockout procedure.
2. Disconnect the wires from the CAN Distribution Module.
3. Unmount the CAN Distribution Module by removing the two mounting bolts.

To install reverse removal procedures



14. Support Arm

To access the Support Arm, open the Hinged Cover. (See Footer D)



- | | |
|---------------------------------|----------------------------------|
| 1. Support Arm | 6. Smaller Counter Balance Valve |
| 2. Support Rods/Pins (qty 3) | 7. Pressure Sensor |
| 3. Upper Cylinder Pin | 8. Sequencing Valve |
| 4. Hydraulic Cylinder | |
| 5. Larger Counter Balance Valve | |

14.1 Replace Support Arm Cylinder.

1. Follow Lockout procedure.
2. Raise the Support Arm and place a 6 in block under the Support Arm.
3. Carefully lower the arm onto the block until the Upper Cylinder Pin is unloaded.
4. Remove the screw securing the Upper Cylinder Pin in place.
5. Slide the pin out of the Cylinder.

6. Retract the Cylinder by running the Lower Support Arm function.
7. Disconnect and cap the Hydraulic Hoses.
8. Unplug the M12 Pressure Sensor connector.
9. Rotate the Cylinder out of the Beam Champ to unload the Lower Cylinder Pin
10. Remove the retaining rings from the Lower Cylinder Pin
11. Slide the Lower Cylinder Pin out of the Hydraulic Cylinder.
12. Transfer the Pressure Sensor, Hydraulic Fittings, and Valves from the old Cylinder to the new Cylinder.

NOTICE

REPLACE O-RINGS! to prevent oil leaks.

To install, reverse removal procedures.

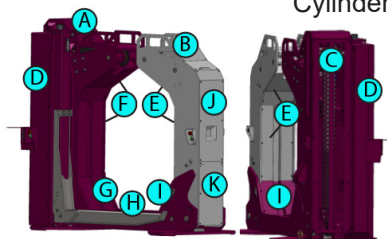
14.2 Replace Larger Counter-Balance Valve.

1. Follow Lockout procedure.
2. Thread the old Counter-Balance Valve out of the Cylinder.
3. Thread the new Counter-Balance Valve into the Cylinder.

NOTICE

HYDRAULIC OIL! will flow from the tank to this port while the Counter-Balance Valve is removed).

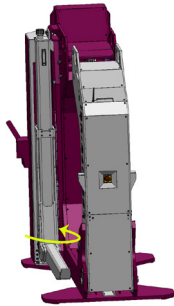
4. Replacing the Smaller Counter-Balance Valve.
5. Thread the old Counter-Balance Valve out of the Cylinder.
6. Thread the new Counter-Balance Valve into the Cylinder.
7. Replacing the Sequencing Valve.
8. Thread the old Sequencing Valve out of the Cylinder.
9. Thread the new Sequencing Valve into the Cylinder.



14.3 Set Sequencing Valve

1. Follow Lockout procedure.
2. Connect a Hydraulic Gauge to the port on the Cylinder Rod.
3. Loosen the lock nut on the sequencing valve.
4. Adjust the sequencing valve.
5. The gauge should read 1000psi while running the Lift Support Arm function.
6. When the Support arm reaches the top, the pressure will drop momentarily and then continue up to system pressure.

14.4 Replace Laser Sensor



1. Follow Lockout procedure.
2. Unplug the M12 connector on the Laser Sensor.
3. Remove the Lower Slider Bracket by removing the 4 bolts and nuts mounting the Lower Slider Bracket to the Support Arm.
4. Block up the end of the Support arm to unload the Upper Rollers.
5. Remove the screw that holds the Upper Roller Pin.
6. Slide the Upper Roller Pin out of the Support Arm and remove the Upper Rollers and Spacers.
7. Remove the bolt and nut to the lowest support rod to remove the lowest support rod on the Support Arm.
8. Lift and block the end of the Support Arm, rotating it on the Upper Cylinder Pin. This allows access to the Laser Sensor mounting screws.
9. Remove the mounting screws and nuts and remove the Laser Sensor.

To install, reverse removal procedures.

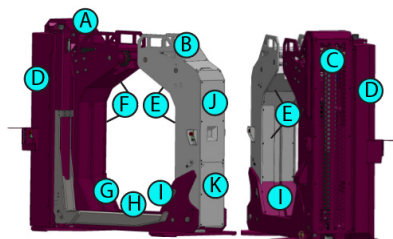
14.5 Calibrate Laser Sensor

1. Follow Lockout procedure.
2. Lower the Support Arm completely
3. Place a target at the Support Arm in front of the laser.
4. Press and hold the button on the top of the Laser Sensor until the lights on the sensor start to blink.
5. Release and press the button once. The lights on the Laser sensor should be off unless there is an object closer than where the target was used during calibration.

14.6 Replace Upper Rollers

1. Follow Lockout procedure.
2. Remove the Lower Slider Bracket by removing the four bolts and nuts mounting the Lower Slider Bracket to the Support Arm.
3. Block up the end of the Support arm to unload the Upper Rollers.
4. Remove the screw that holds the Upper Roller Pin.
5. Slide the Upper Roller Pin out of the Support Arm and remove the Upper Rollers and Spacers.

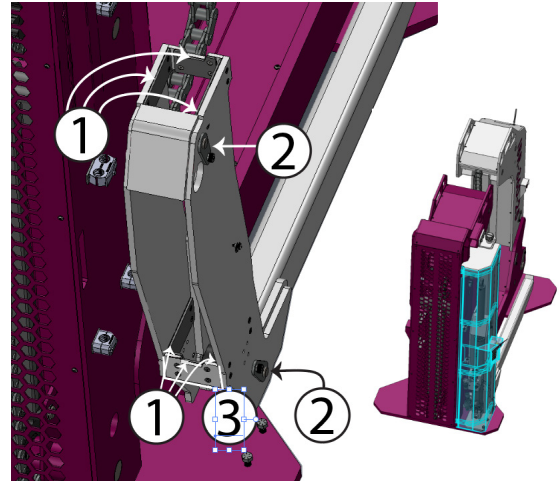
To install reverse removal procedures



14.7 Replace Lower Rollers

1. Follow Lockout procedure.
2. Lift the Support Arm up about 12 inches.
3. Remove the Lower Slider Bracket by removing the 4 bolts and nuts mounting the Lower Slider Bracket to the Support Arm.
4. Remove the screw that holds the Lower Roller Pin.
5. Block up the end of the Support Arm to unload the lower Rollers.
6. Slide the Lower Roller Pin out of the Support Arm and remove the Lower Rollers and Spacers.

To install, reverse removal procedures.



1. Slider Plates
2. Roller Pins
3. Slider Bracket

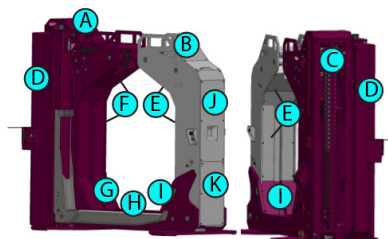
14.8 Replace Slider Plates

1. Follow Lockout procedure.
2. Remove the three Support Rods and spacers by removing the 3 bolts and nuts mounting them to the Support Arm.
3. Unplug the Pressure Sensor on the hydraulic Cylinder.
4. Remove the screw securing the Upper Cylinder Pin in place and rotate the cylinder out of the way.
5. Remove the Lower Slider Bracket by removing the 4 bolts and nuts mounting the Lower Slider Bracket to the Support Arm.
6. Block up the end of the Support arm to unload the Upper Rollers.
7. Remove the screw that holds the Upper Roller Pin.
8. Slide the Upper Roller Pin out of the Support Arm and remove the Upper Rollers and Spacers.
9. Unplug the M12 connector on the Laser Sensor
10. Slide the Support Arm Assembly off the Hydraulic Oil Tank.
11. Remove each Slider Pad by removing the 4 mounting screws.

NOTICE

SPACERS! Each slider pad has a unique set of spacers behind it that needs to be accounted for and remounted in the same place.

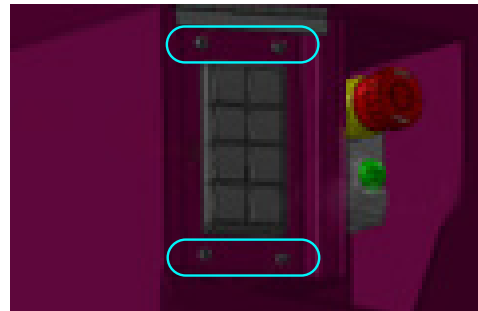
To install, reverse removal procedures.



15. Replace Keypad

1. Follow Lockout procedure.
2. Remove the 4 screws that mount the keypad sub-plate.
3. Slide the keypad sub-plate assembly out of the hinged door.
4. Unplug the keypad.
5. Remove the two keypad mounting nuts.
6. Separate the keypad from the sub-plate.

Sub-plate Screws



To install, reverse removal procedures.

16. E-Stop

16.1 Replace E-Stop

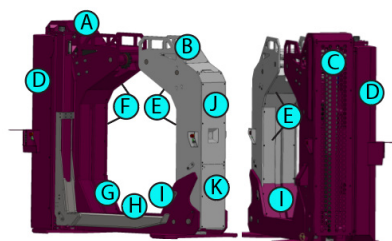
1. Follow Lockout procedure.
2. Remove the E-stop face cover and button using a security torque tool.
3. Loosen up the cord grip on the bottom of the E-stop.
4. Disconnect the wires inside the E-stop.
5. Dismount the E-stop housing by removing the 4 mounting screws from the back.
6. Transfer any jumper wires inside the old E-stop to the new E-stop.

To install reverse removal procedures.

16.2 Replace E-Stop Module

1. Follow Lockout procedure.
2. Remove the Base Frame Inside Covers. (See Footer nomenclature F.)
3. Unplug the 3 connectors from the E-stop Module.
4. Remove the 4 mounting bolts to dismount the E-stop Module.

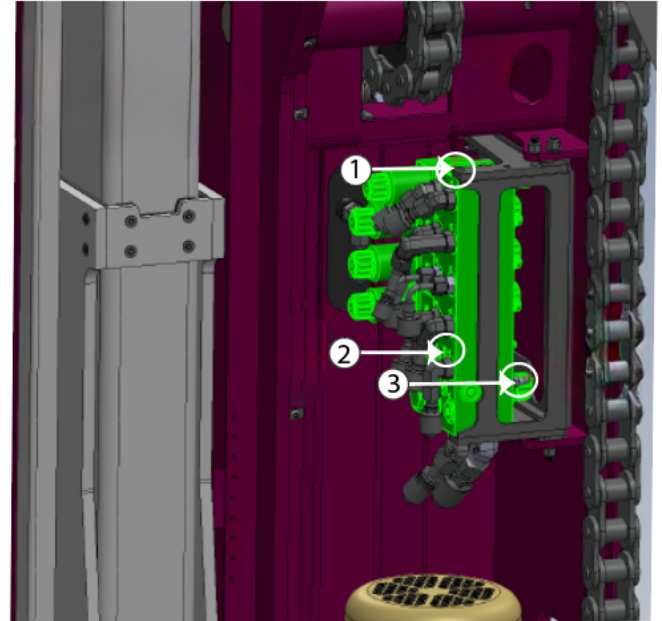
To install reverse removal procedures.



17. Valve Block

To access the Valve Block, remove the Base Frame Inside Covers. (See Footer F)

1. System Pressure Port
2. System Pressure Sequencing Valve
3. System Pressure Sensor



17.1 Fix Oil Leak on Valve Block

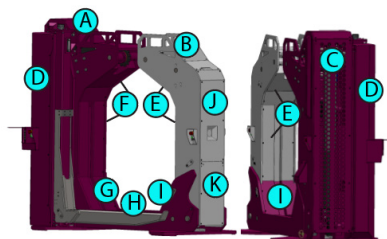
1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly.
3. Remove the hose at the leaking port.
4. Remove the hydraulic fitting or plug at the leaking port.
5. Replace damaged O-ring.

Reverse removal procedures.

17.2 Remove Valve Block Assembly

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Disconnect and cap all the hydraulic hoses.
4. Disconnect all the valve solenoids.
5. Remove the 4 mounting bolts.
6. Slide the valve out of the valve block bracket.

To install, reverse removal procedures.



17.3 Replacing a Hydraulic Fitting

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Remove the hose from the affected port.
4. Remove the Hydraulic Fitting.

To install, reverse removal procedures.

17.4 Replace Hydraulic Valve

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Disconnect the valve solenoids from the affected port.
4. Remove the 4 mounting screws and slide the actuating valve and counter-balance valve combo from the main valve body. (Note: there are 4 little O-rings between each valve and the main valve body).
5. Transfer the valve solenoids from the old valve to the new valve.

To install reverse removal procedures.

NOTICE

USE GREASE! When reassembling actuating valve and counter-balance valve combo, use a little grease to keep the O-rings in position).

17.5 Replace Valve Solenoid

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Disconnect the valve solenoid from the affected port.
4. Remove the solenoid mounting nut on the affected valve.
5. Slide the solenoid off the valve.

To install, reverse removal procedures.

17.6 Replace System Pressure Sensor

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Disconnect the M12 connector from the sensor.
4. Thread the sensor out of the main block.

To install, reverse removal procedures.

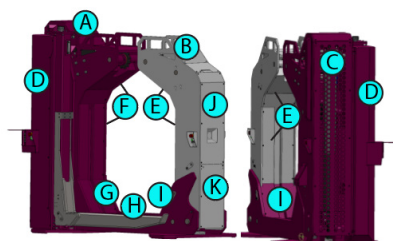
17.7 Replace System Pressure Sequencing Valve

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Thread the sensor out of the main block.

To install, reverse removal procedures.

17.8 Set System Pressure

1. Follow Lockout procedure.
2. Remove the two locking bolts from the Valve Block Slider assembly and slide the valve block out.
3. Attach a gauge to the system pressure port located on the top of the main Valve Body.
4. Loosen the locking nut on the Sequencing Valve located on the right side of the main valve body.
5. Run the Jaw Close function until dead head.
6. Using the gauge adjust the system pressure while running a function on dead head.
7. System pressure should be 3000 PSI.
8. After setting the system pressure tighten lock nut.



18. Specifications

General

Dimensions

Length	
Jaw Closed	96.5 in.
Jaw Open.....	120 in.
Width.....	48 in.
Height.....	92 in.
Weight.....	5,700 lbs

Capacity

Capacity	25,000 lbs
----------------	------------

Systems

Electrical System

Phase.....	3 Phase
Voltage	480 Volt
Control Voltage	12 Volt
Electrical Plug	CS8175

Hydraulic System

Max Pressure.....	3500 psi
Normal Pressure	3000 psi
Reservoir Capacity.....	14.75 gal
System Capacity	18 gal
Hose Burst Strength.....	10,000 psi
Ambient Air Temperature Range.....	0° to 120°
Hydraulic Fluid Recommended.....	AW46
Hydraulic Oil Filter.....	Donaldson P564967



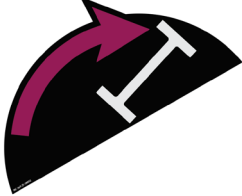

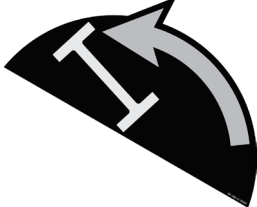

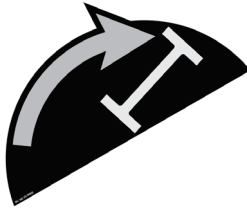





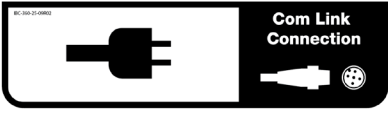
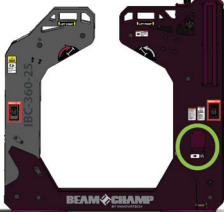
Appendix A: Labels and Decals

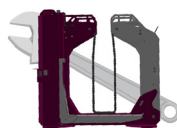
Decal and Label Chart			
Decal ID	Qty	Decal Visual	Decal Application
IBC-360-25-01R02	2		
IBC-360-25-02R02	2	IBC-360-25	
IBC-360-25-13R02	1		
IBC-360-25-12R02	1		
IBC-360-25-07R02	1		
IBC-360-25-03R02	1		

Labels & Decals









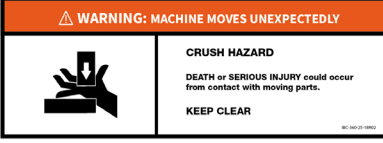
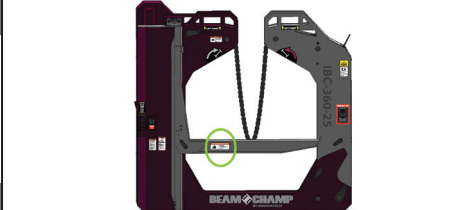




Appendix A: Labels and Decals

IBC-360-25-04R02	1		
IBC-360-25-05R02	1		
IBC-360-25-06R02	1		
IBC-360-25-11R02	3		
IBC-360-25-10R02	1		
IBC-360-25-09R02	1		

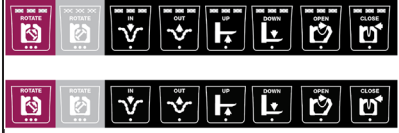







Appendix A: Labels and Decals

<p>IBC-360-25-08R02</p>	<p>4</p>		
<p>IBC-360-25-21R02</p>	<p>2</p>		
<p>IBC-360-25-06R02</p>	<p>2</p>		
<p>IBC-360-25-19R02</p>	<p>2</p>		
<p>IBC-360-25-18R02</p>	<p>1</p>		
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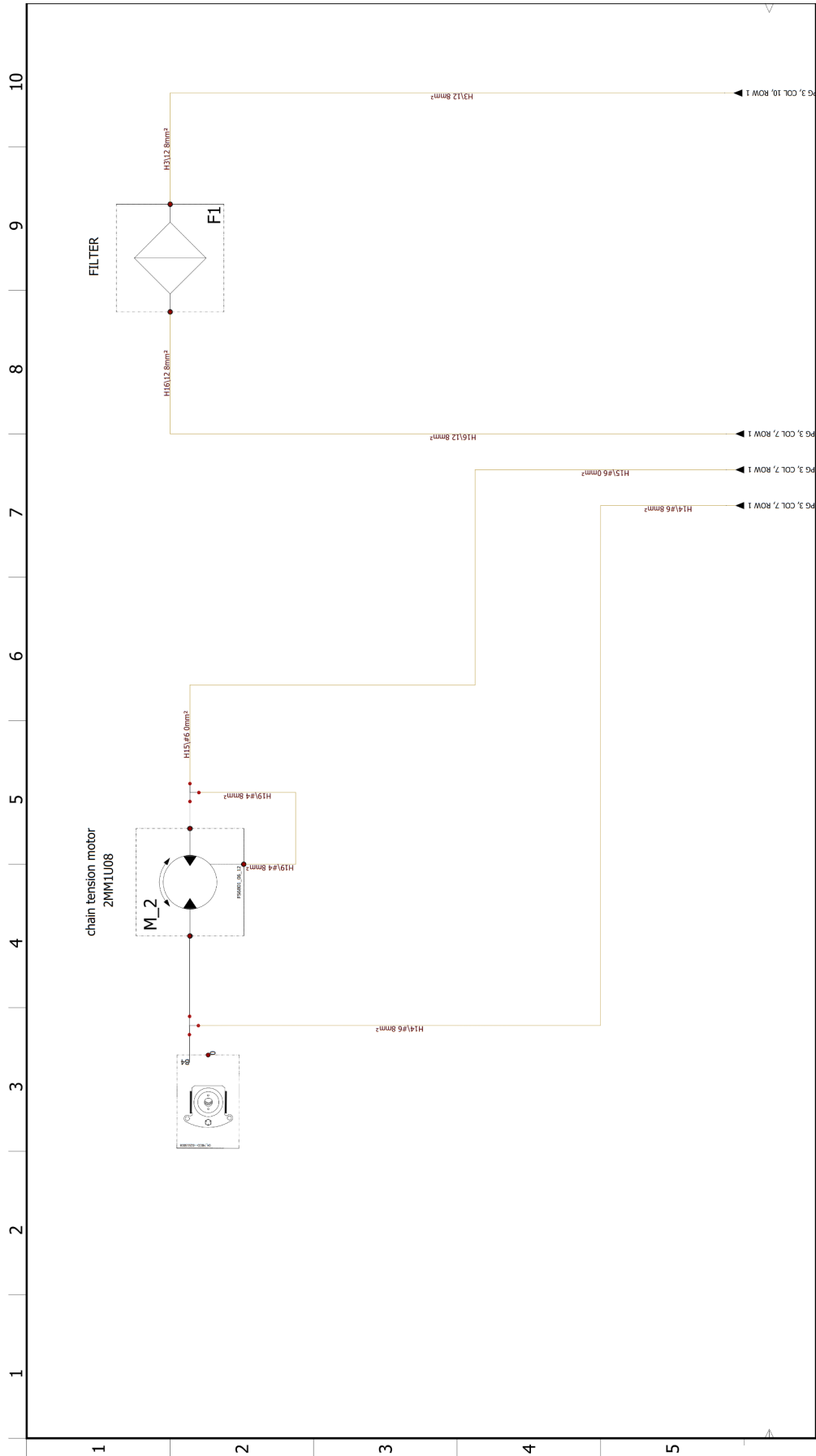


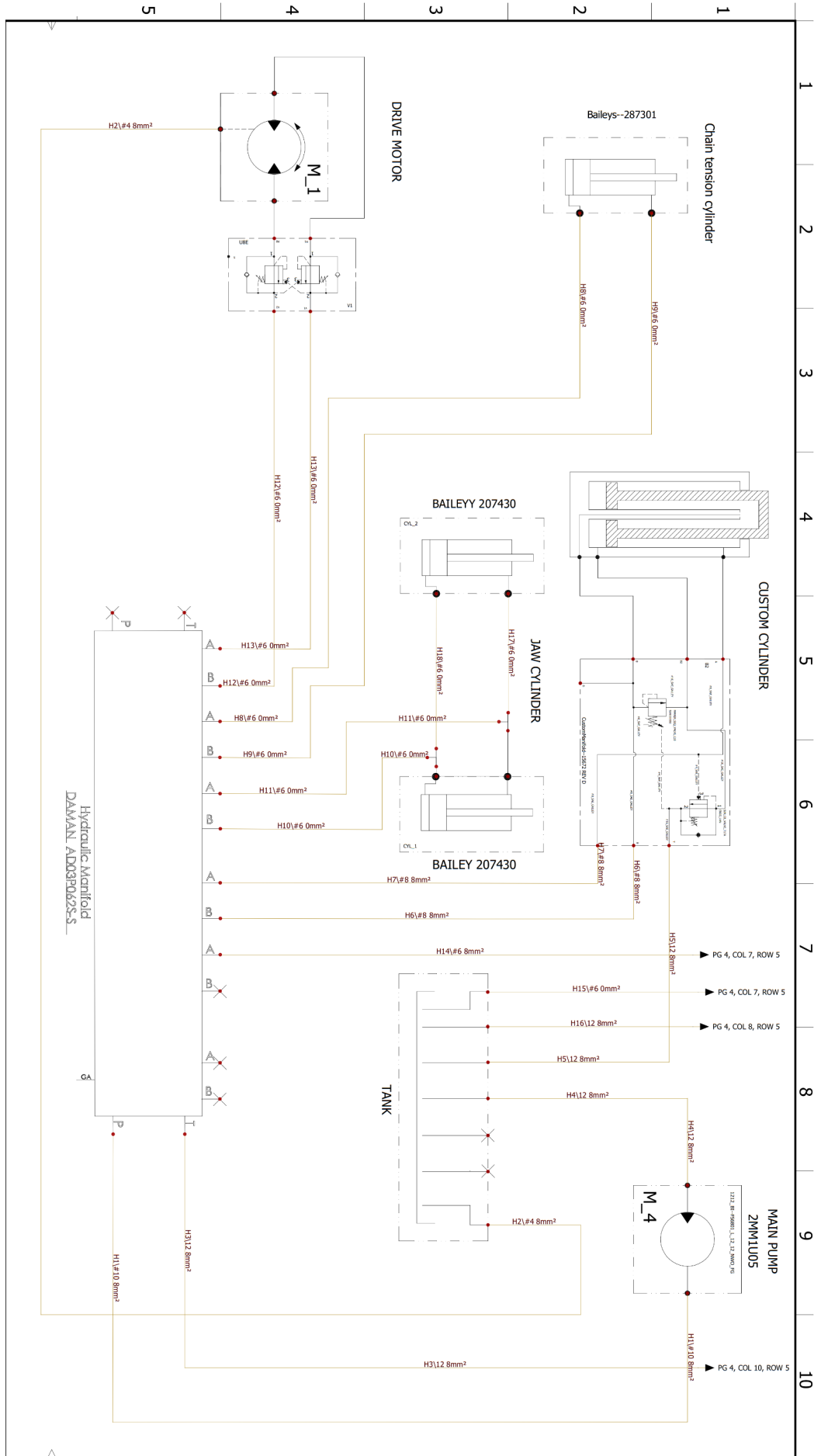
Appendix A: Labels and Decals

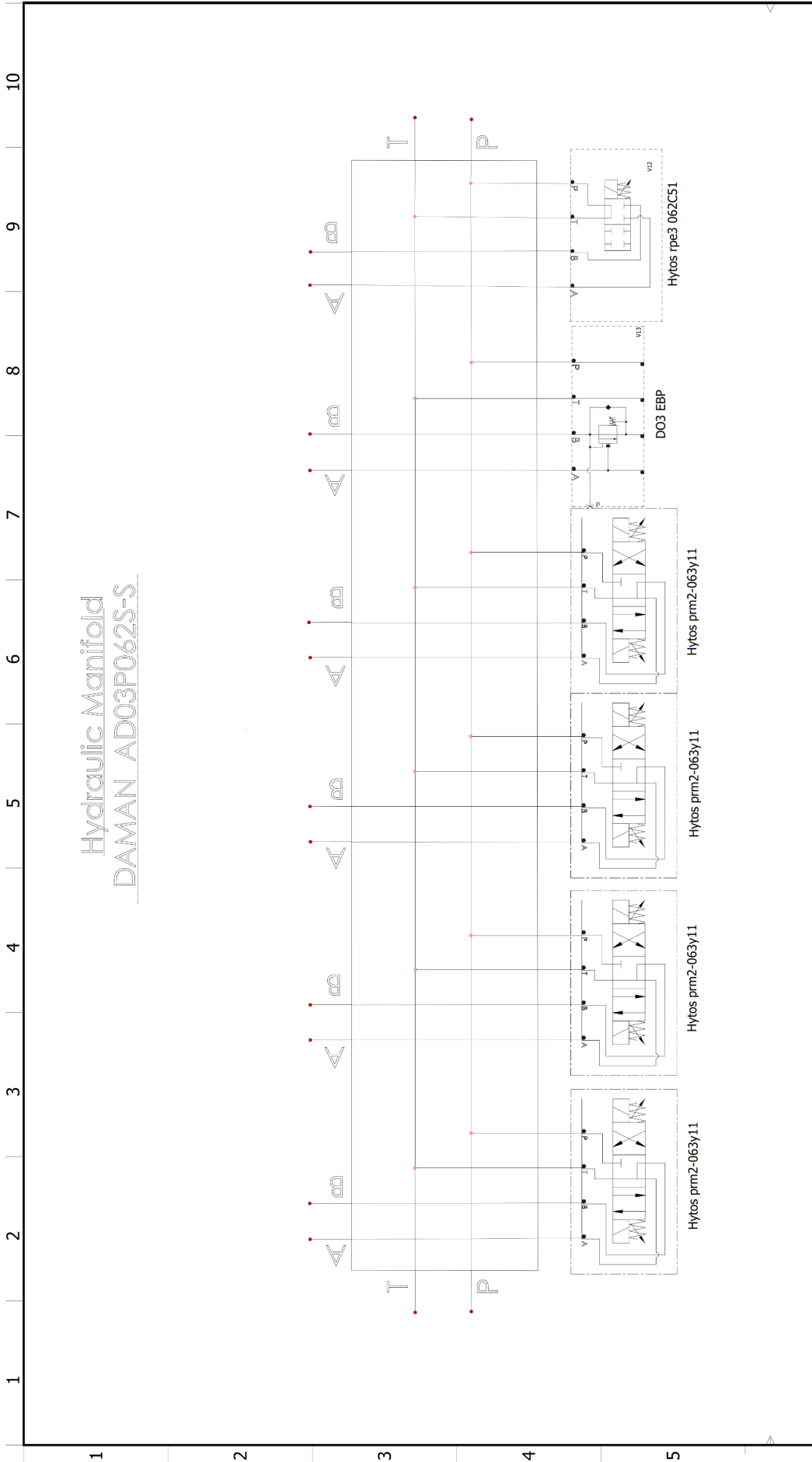
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<p>IBC-360-25-16R02</p>	<p>1</p>		
<p>IBC-360-25-15R02</p>	<p>1</p>		



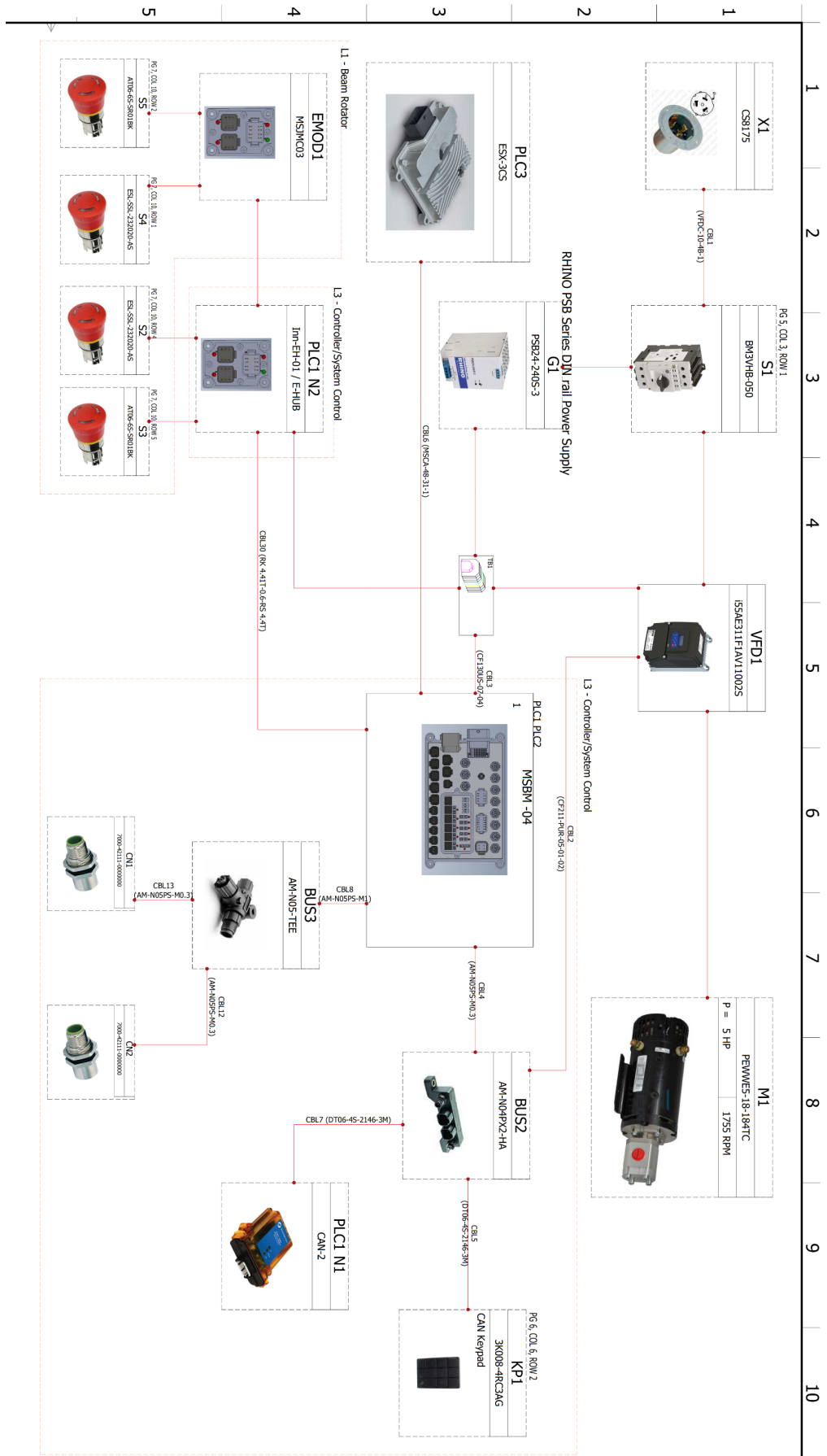
Appendix B: Hydraulic Schematics

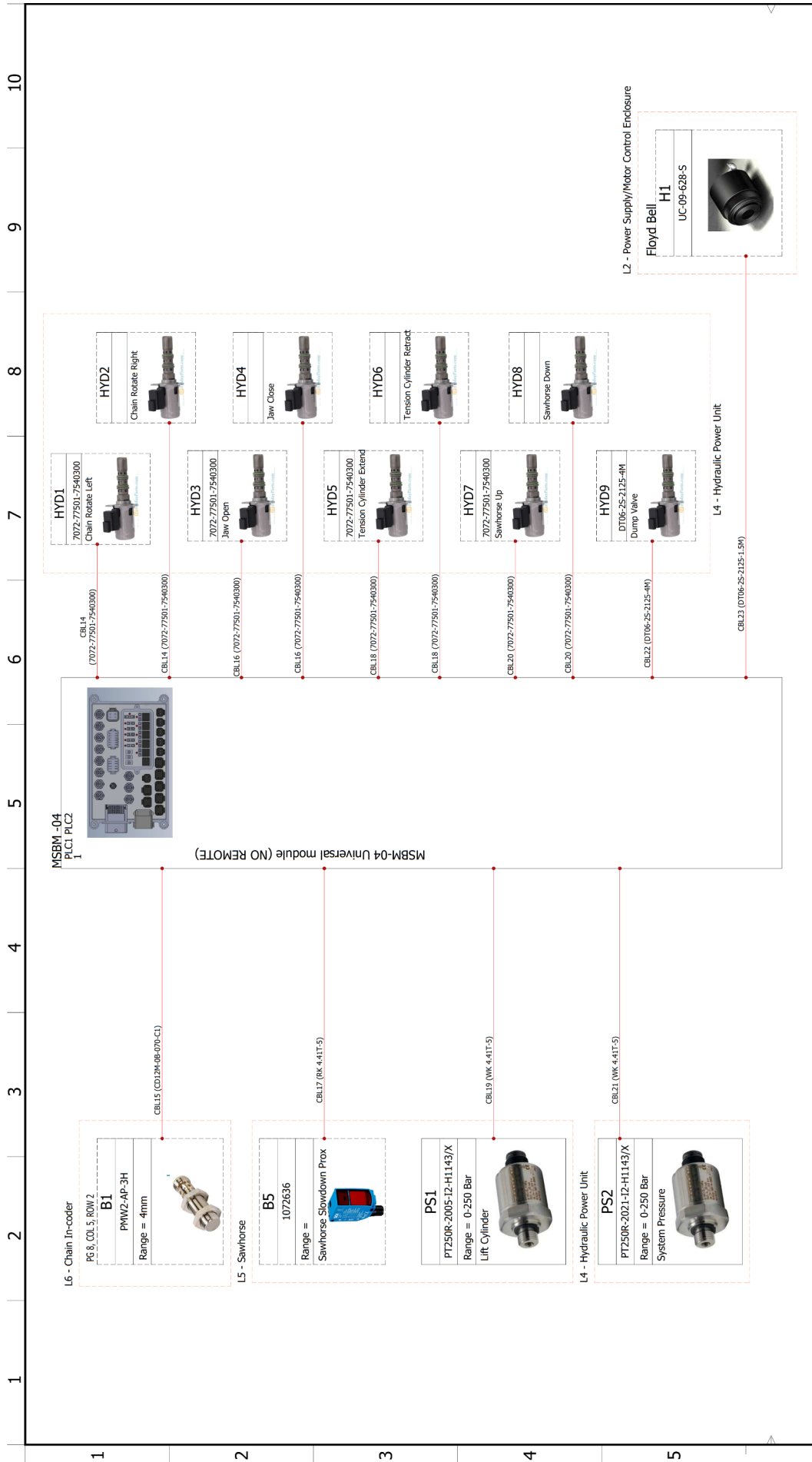


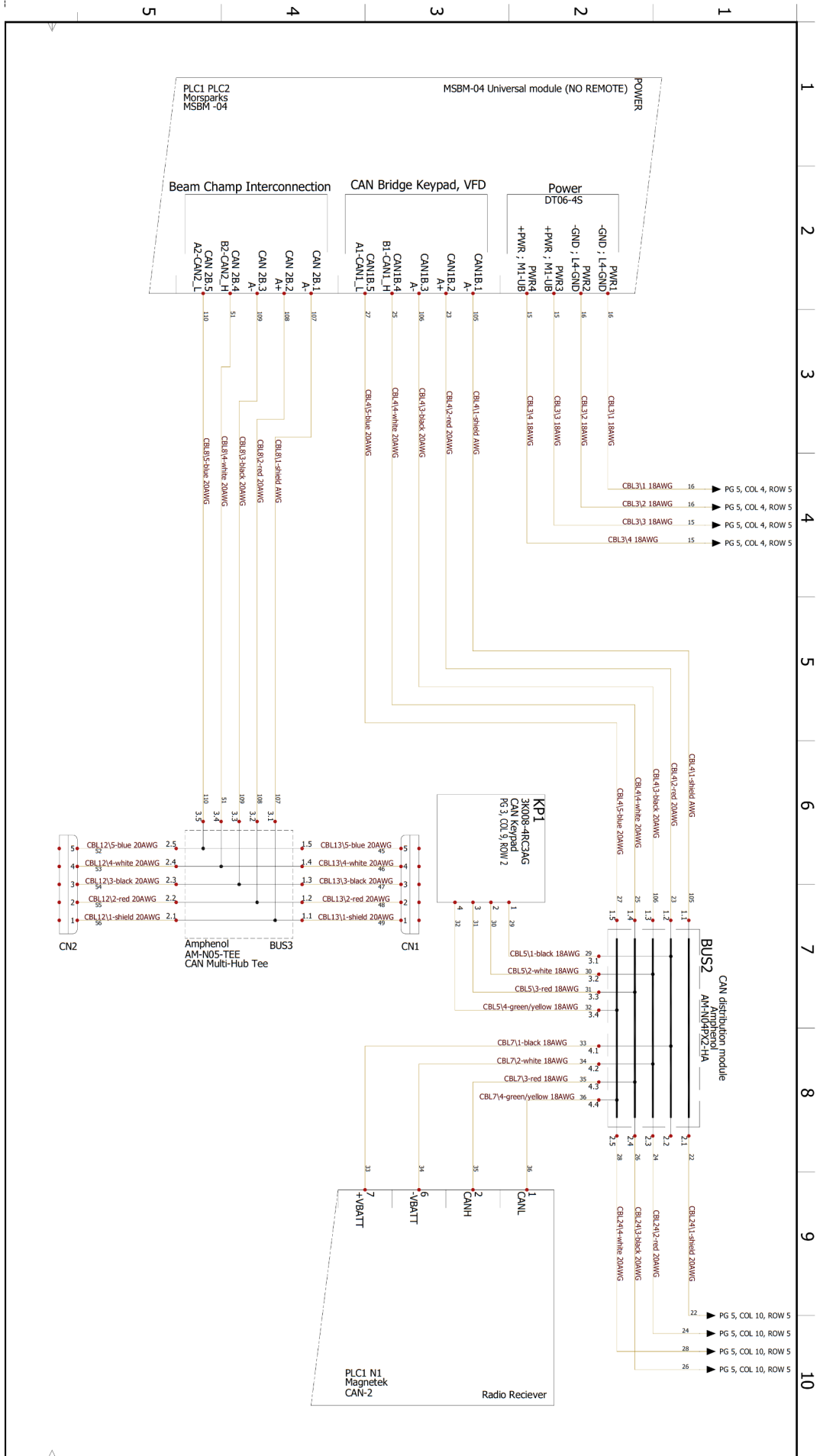


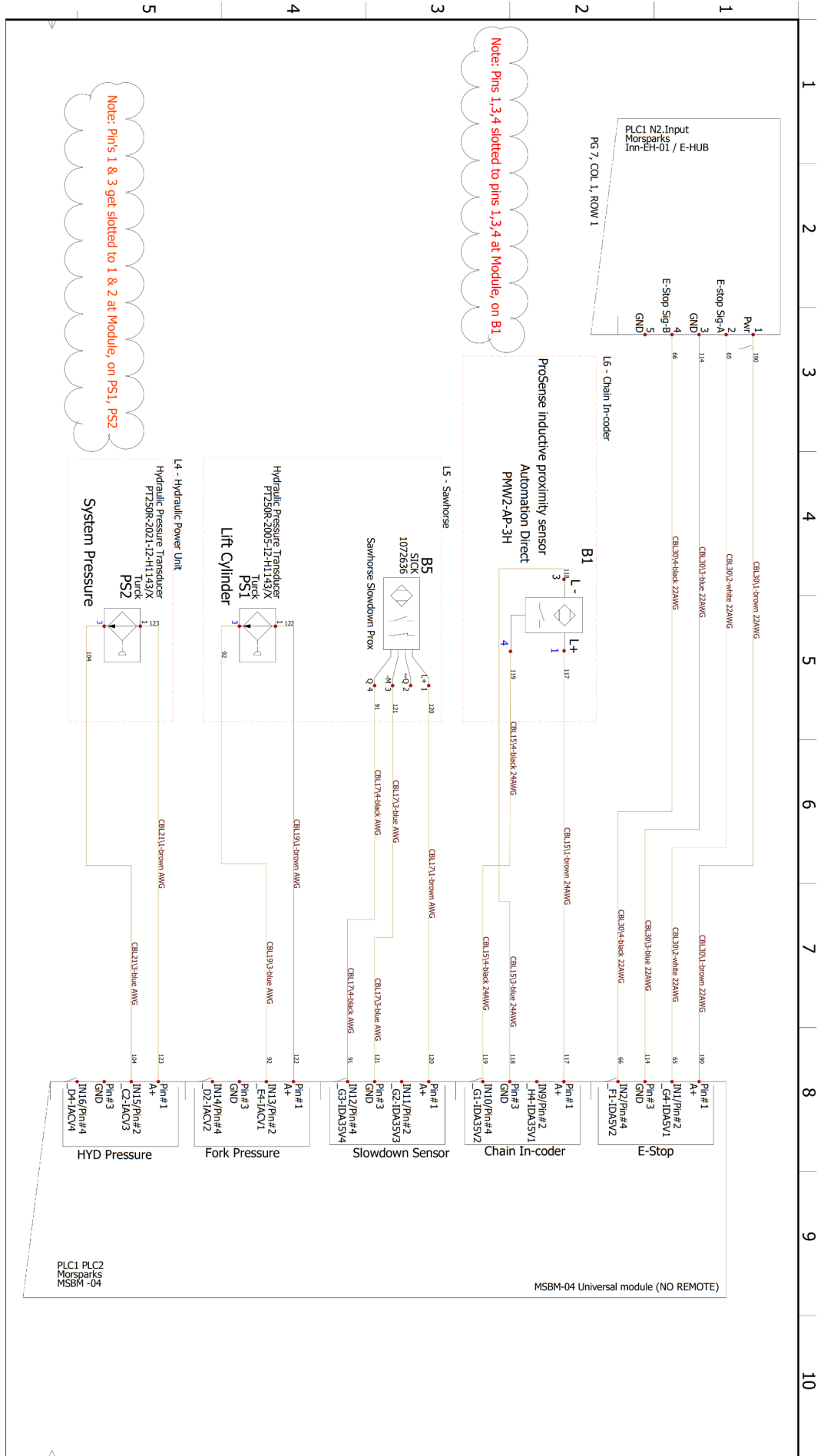


Appendix C: Electrical Schematics









INNOVATECH

ENGINEERED TO DO MORE.

InnovaTech Manufacturing
4360 N WECCO Rd
Cedar City, UT 84721
<https://support.innova.tech>

