

Lantech®



Installation Instructions

C0013536

Pallet Grip®

Q Series® Semi-Automatic Machines

Manufacture Date before July, 2010

RETROFIT INSTALLATION

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RETROFIT INSTALLATION

1.0 Introduction

These instructions tell the operator and maintenance personnel how to safely install and operate the retrofit.

For support, use the phone and email data below:

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Note: Lantech is not responsible for non-approved changes to a machine. If the components on your machine are different from the drawings in this document, contact Lantech.

RETROFIT INSTALLATION

2.0 Safety

This manual tells the operator and maintenance personnel how to safely install and operate the machine. The section includes:

- General safety
- Personnel safety
- Safety & Environmental Controls
- Warnings, Cautions and Notes

General Safety

- Read the manual to install, operate, and repair the machine safely.
- Obey all safety labels.
- Obey all warnings to prevent an injury to personnel.
- Obey all cautions to prevent damage to the machine.
- Obey all Lockout/Tagout procedures before you change, adjust, and repair a part.
- Refer to the adjustment data to prevent a safety hazard.

Personnel Safety

- To prevent an injury and safety risk, do not install, operate, and repair the machine while influenced by drugs, alcohol, and medication.
- A part that moves can catch loose clothing, long hair, jewellery and cause injury to personnel.
- Data on Personal Protective Equipment (PPE) is in the Installation section of this manual.
- Refer to the Installation section for personnel and tools to safely install the machine.

RETROFIT INSTALLATION

Safety & Environmental Controls

- Make sure that you recycle all waste.
- Release all chemical waste to a certified Waste Processing Company only.
- To decommission the machine, the owner of the machine and all auxiliary equipment, must:
 - Obey applicable environmental regulations and discard electrical components safely.
 - Obey all applicable environmental, plant, and industrial safety regulations.

This applies to local, regional, and federal controls, and includes all OSHA and CE regulations.

Lockout/Tagout

Obey these procedures to prevent an injury from unexpected energizing, start-up, release of stored energy.

This applies to local, regional, and federal controls, and includes the current controls for:

- Australia – OSHA – Prevention of Unexpected Startup
- Europe – CE – Machinery Directive – Isolation of Energy Sources
- USA – OSHA – Control of Hazardous Energy

Warnings, Cautions, and Notes

Warning – Tells the operator that there is a hazard that can cause a serious injury.

Caution – Tells the operator that there is a hazard that can cause:

- A minor injury
- Damage to the equipment, environment.

Note – Gives additional data to help the operator.

RETROFIT INSTALLATION

3.0 General Data

This is an option for the Q300 and Q300XT.

The Pallet Grip locks the load to the pallet. As the FDS lowers, the Pallet Grip® engages and makes a cable of film. This cable attaches below the top boards of the pallet to lock the load to the pallet.

Note: The Pallet Grip® option decreases the wrap diameter of the turntable approximately 5”.



CAUTION

If the diameter of the load is larger than the wrap diameter, damage to the Pallet Grip® will occur.

3.1 Warranty

The warranty on Retrofits is 1 Year.

3.2 Sequence of Operation

The sequence of operation starts with a load on the turntable.

3.2.1 Q300

1. Push the “Film Assist” button.
2. Pull the film and attach it to the load.
3. Push the “Start” button.
4. The turntable turns and the FDS moves up. The speed of the FDS is set on the operator control panel.
5. The film pre-stretches and is applied to the load.
6. The load height sensor senses the top of the load and the FDS stops to apply the top wrap.
7. The FDS lowers to wrap the bottom of the load.
8. The Pallet Grip® engages and makes a cable of film on the bottom edge of the film.
9. The pivoting roller engages and attaches the film cable to the pallet.
10. If the machine has Auto Film Cut-off™:
 - On the last revolution of the bottom wraps, the Auto Film Cut-off™ engages then the pre-stretch motor stops.
11. When the turntable stops at the home position, the FDS raises and disengages the Pallet Grip®.
12. If the machine does not have the Auto Film Cut-off™, the operator cuts the film.
13. The operator removes the load from the turntable.

RETROFIT INSTALLATION

3.2.2 Q300XT

1. Push the “Film Assist” button.
2. Pull the film and attach it to the load.
3. Push the “Start” button.
4. The turntable turns and the FDS moves up. The speed of the FDS is set on the operator control panel.
5. The film pre-stretches and is applied to the load.
6. The load height sensor senses the top of the load and the FDS stops to apply the top wrap.
7. The FDS lowers to wrap the bottom of the load.
8. The Pallet Grip® engages and makes a cable of film on the bottom edge of the film.
9. The pivoting roller engages and attaches the film cable to the pallet.
10. On the last revolution of the bottom wraps, the XT unit engages to clamp and cut the film.
11. At the end of the wrap cycle, the FDS raises and disengages the Pallet Grip®.
12. The operator removes the load from the turntable.

RETROFIT INSTALLATION

4.0 Installation Instructions

Read the Installation section and do the steps in sequence

Note: Illustrations are for reference only.



WARNING
Obey all safety decal instructions and warnings.



WARNING
Obey all Lockout/Tagout procedures before you change, adjust, repair a part.

4.1 Personnel, Equipment and Tools

Personnel

- 1 Electrical/Mechanical Technician
- 1 Forklift Operator

Equipment

- 1 Forklift with 2000 kg (4400 lbs) capacity and minimum 5 m (15') Lift

Tools

- Metric and Standard Wrenches and Sockets
- Allen wrenches
- Drill with a 9/32" Bit
- Torque Wrench

| Metric Fastener Torque Chart | | |
|------------------------------|-------|--------------------|
| Fasteners | Class | Torque |
| 6 mm | 8.8 | 14 N-m (10 lb-ft) |
| 8 mm | 8.8 | 24 N-m (18 lb-ft) |
| 10 mm | 8.8 | 47 N-m (35 lb-ft) |
| 12 mm | 10.9 | 102 N-m (75 lb-ft) |

RETROFIT INSTALLATION

4.2 Components

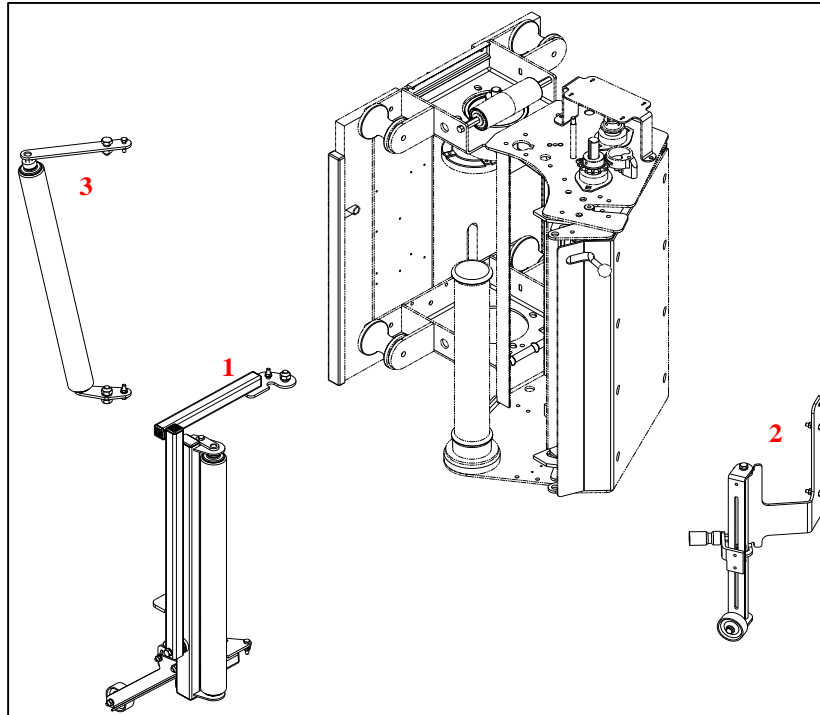


Figure 4.1

| | |
|---|-----------------|
| 1 | Pivoting Roller |
| 2 | Film Roper |
| 3 | Angled Roller |

Angled Roller – moves the film down and helps to align the edge of the film on the groove roller.

The roller attaches to the gate.

Film Roper – is adjustable to increase, decrease the quantity of film that makes the cable.

The roper attaches to the gate.

Pivoting Roller – engages when the roller touches the base.

The roller moves the film cable down on the pallet.

The actuator is adjustable to increase, decrease the angle of the roller.



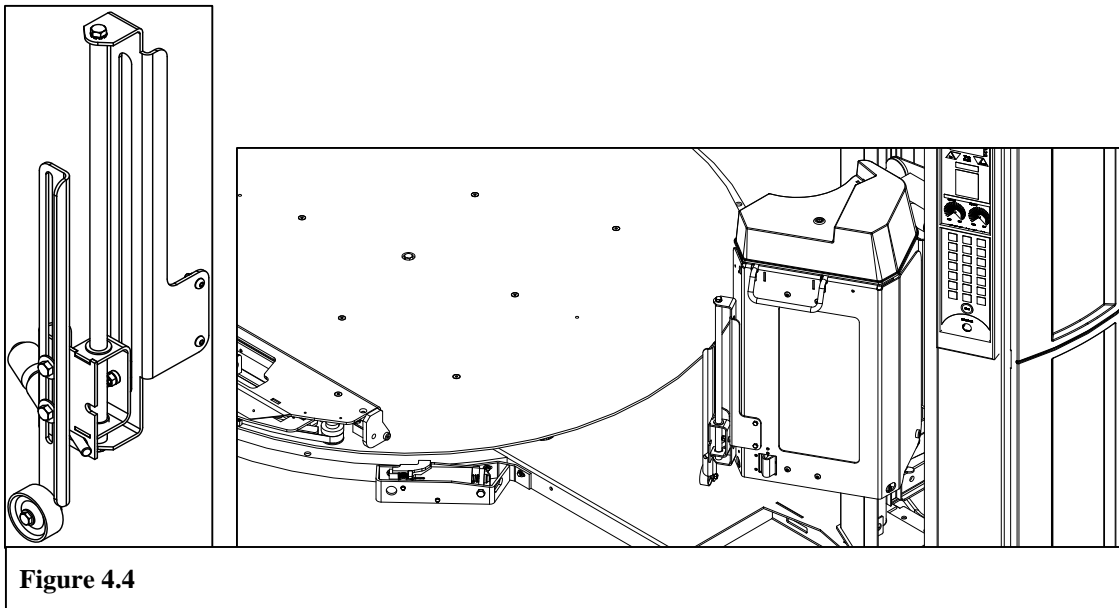
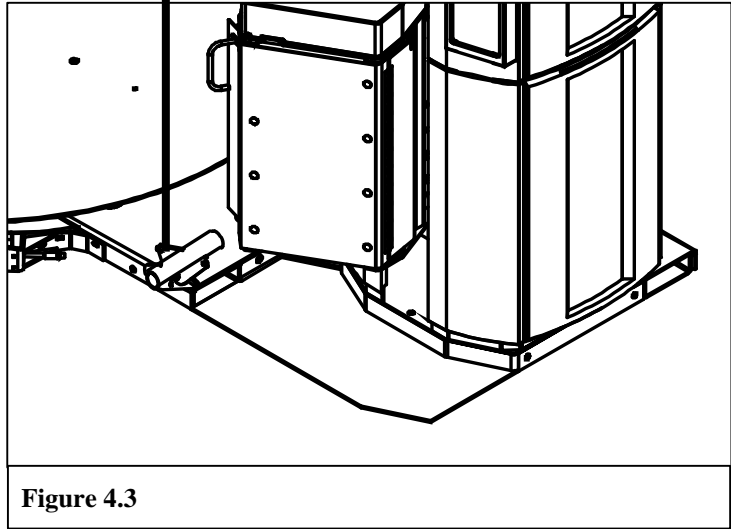
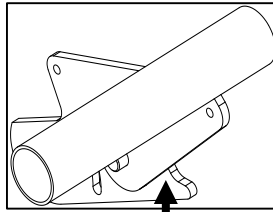
Figure 4.2

RETROFIT INSTALLATION

4.3 Components to Remove

The installation includes the removal of the components in the list below.

- The last idler roller on the gate
 - The Film roper
1. Move the actuator forward to release the film from the XT clamp.
 2. Raise the FDS 457 mm – 610 mm (18" - 24") above the floor.
 3. Disconnect the power to the machine.
 4. If the machine is a Q300XT, remove the roper. The roper has 2 mount positions:
 - a. Remove the fasteners that attach the roper to the base of the machine.
 - b. Remove the fasteners that attach the roper to the FDS.



RETROFIT INSTALLATION

5. Open the gate of the FDS.
6. Remove the film from the FDS.
7. Remove the FDS cover.

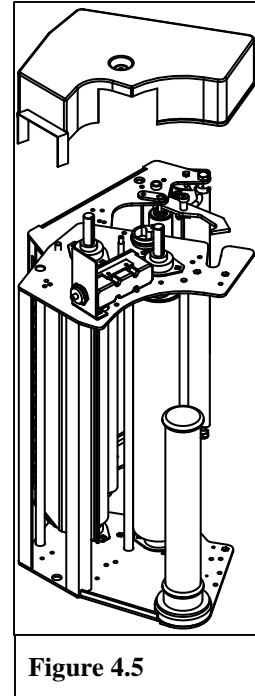


Figure 4.5

4.4 Installation

1. If the machine was built before January 2005, you must make changes to the frame of the Film Delivery System.

If the manufacture date is after January 2005, go to Step 2.

- a. Refer to the drawings.
- b. Make 1 hole in the top plate of the FDS
- c. Make 2 holes in the bottom plate of the FDS.

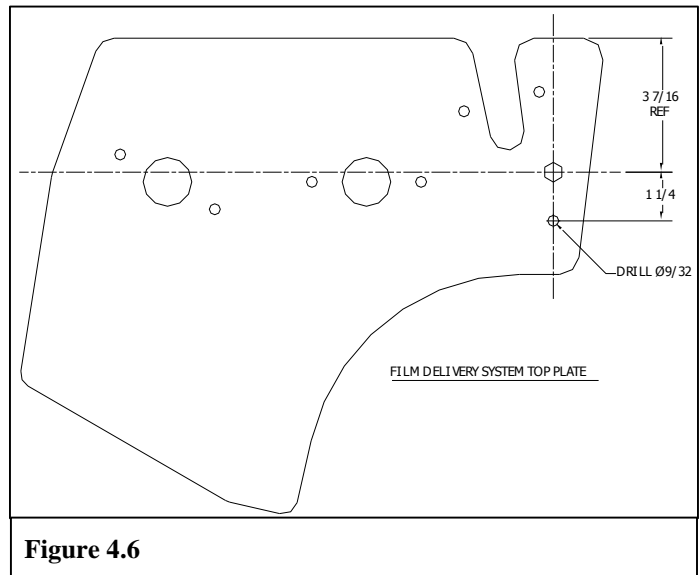


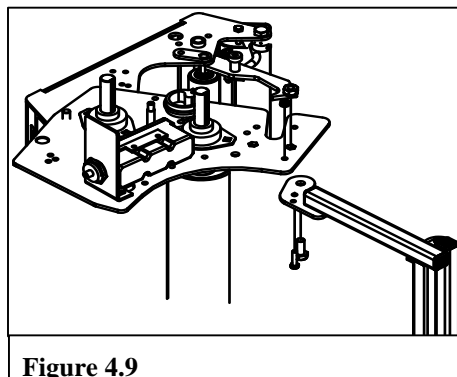
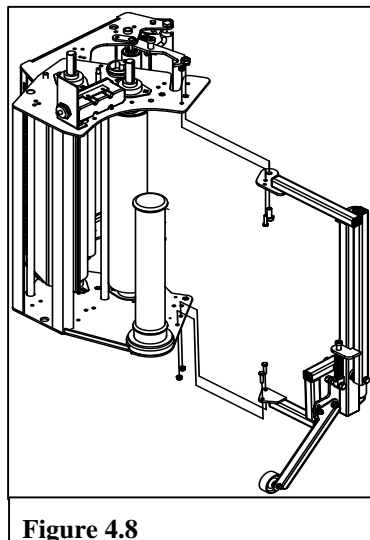
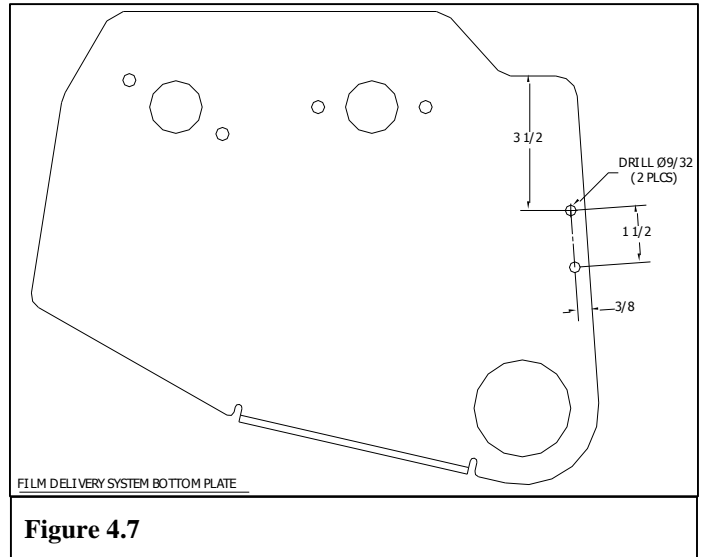
Figure 4.6

RETROFIT INSTALLATION

- d. Use the dimensions on the drawing to find the positions for the holes in the plates of the FDS.
 - e. Put a cover on the components in the FDS to keep debris away from them.
 - f. Remove the debris.
2. Install the Pallet Grip® to the FDS.
- Refer to the drawing.
- a. Align the holes on the Pivoting Roller to the holes on the FDS frame.
 - b. Attach the top frame of the Pivoting Roller to the bottom of the FDS top plate.

Refer to the drawing.

 - c. Tighten the bolts by hand.



RETROFIT INSTALLATION



Figure 4.10

- d. Attach the lower frame of the Pivoting Roller to the bottom of the FDS bottom plate.
Refer to the drawing.
- e. Tighten the bolts by hand.
- f. Refer to the chart on page 8 and torque the bolts.

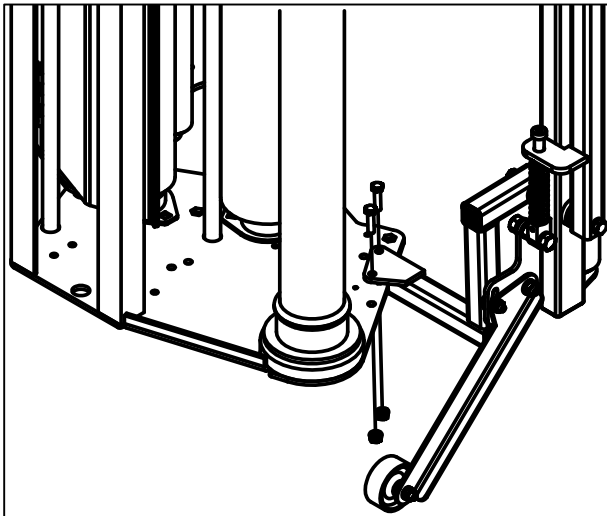


Figure 4.11

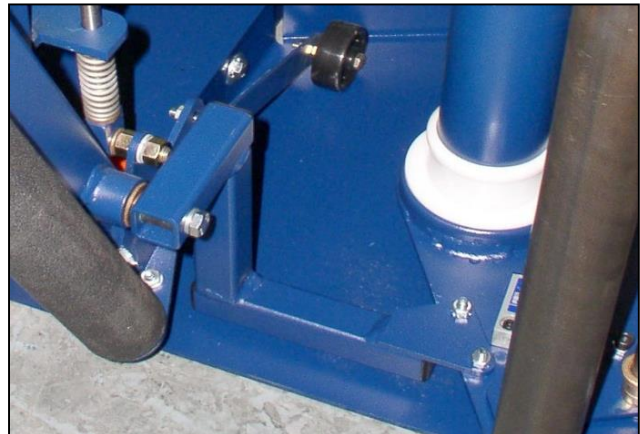


Figure 4.12

RETROFIT INSTALLATION

3. Install the Angled Roller to the FDS gate.
Refer to the drawing.

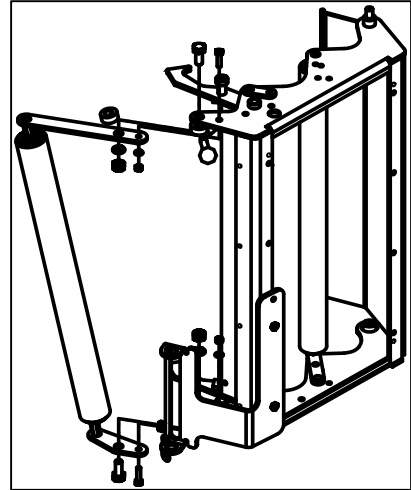


Figure 4.13

4. Remove the last film idler roller on the gate to install the Angled Roller.
 - a. Remove the support from the roller and the FDS frame.
 - b. Remove the roller from the bottom roller support.
 - c. Remove the support.

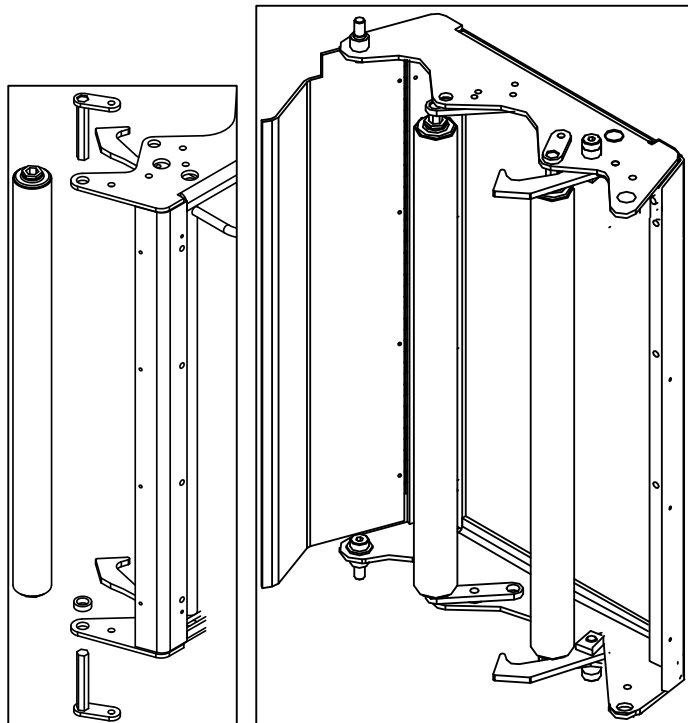


Figure 4.14

RETROFIT INSTALLATION

5. Align the top mount of the Angled Roller to the bottom of the top plate of the gate frame.
6. Attach the top mount to the gate.
7. Tighten the fasteners by hand.

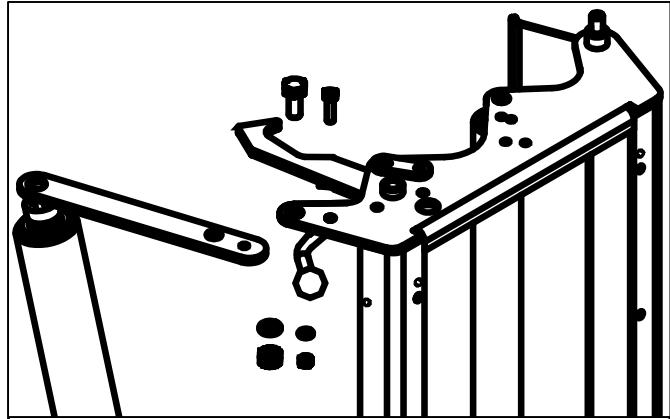


Figure 4.15



Figure 4.16

8. Align the lower mount of the Angled Roller to the top of the bottom plate of the FDS gate.
 - a. Attach the bottom mount to the gate.
 - b. Tighten the fasteners by hand.
9. Refer to the chart on page 8 and torque the bolts

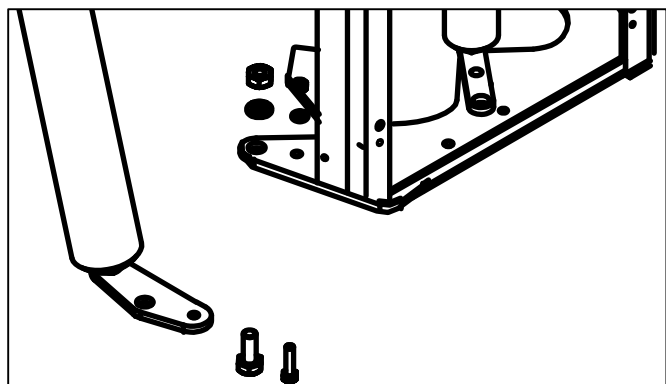
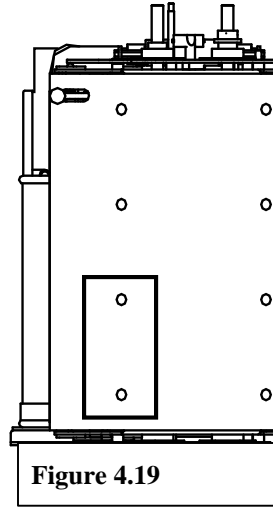
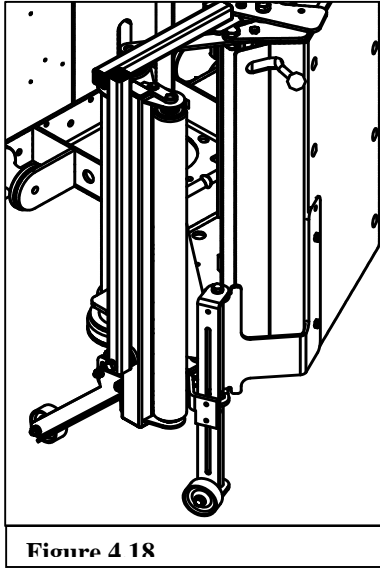


Figure 4.17

RETROFIT INSTALLATION

10. Install the Film Roper to the front of the FDS gate.

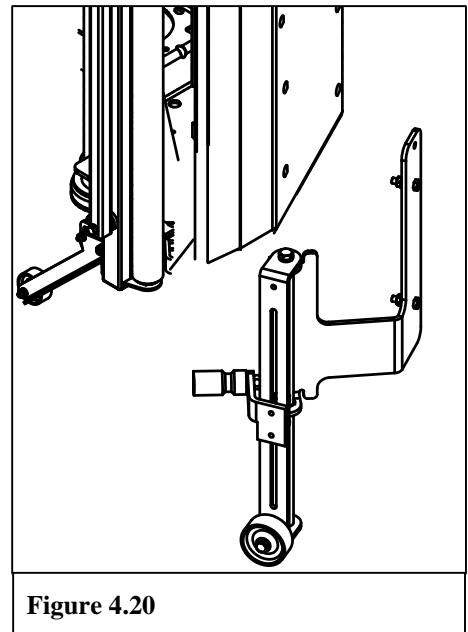
- a. Remove the bottom 2 fasteners that hold the Lexan guard to the left side of the gate frame.



- b. Align the holes in the frame of the Groove Roller to the holes in the gate and attach.

Note: The position of the groove roller on the film roper controls the quantity of film that makes the cable.

- c. Attach the FDS cover.
- d. Refer to the drawing and put the labels for the Pallet Grip® on the machine.

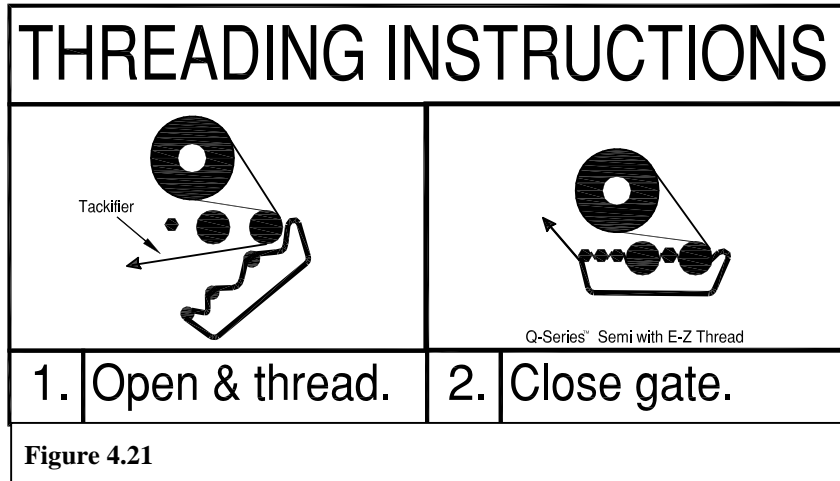


RETROFIT INSTALLATION

11. Thread the film. Make sure that the film roll is in the correct position. Refer to the illustration below.



WARNING
Obey all safety decal instructions and warnings.



12. Apply the power to the machine.
13. Reset the E-stop.
14. Lower the FDS to engage the Pallet Grip®.
15. Loosen the bolts to adjust the position of the Pivoting Roller.

Make sure that it is at a 62° angle from the floor.

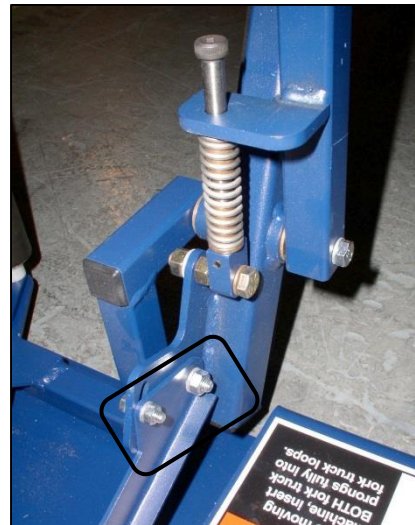


Figure 4.22

RETROFIT INSTALLATION

16. Adjust the height of the groove roller on the Film Roper.
 - For a standard pallet, the top of the guide roller is 203 mm (8") from the floor.
 - The position of the film cable is 25 mm – 38 mm (1" – 1 ½") below the top boards of a pallet.
 - a. Loosen the 2 bolts on the film guide to adjust the roller.
17. Put a load on the turntable.
18. Attach the film to the load.
19. Start the wrap cycle.
20. Make sure that the Pallet Grip® operates correctly. (Refer to Section 3.2 for the correct sequence of operation.)
21. Adjust for the correct film cable.
22. Adjust the FDS Up, Down speed potentiometer for the correct wrap.

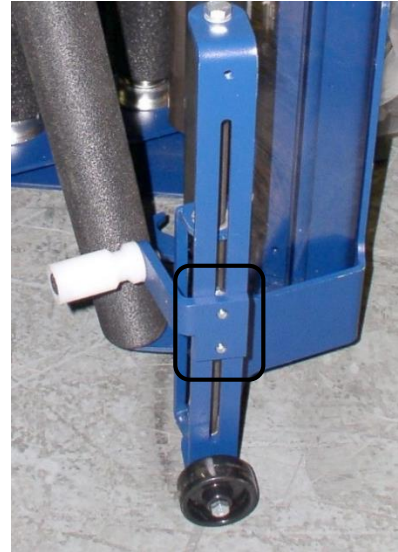


Figure 4.23

5.0 Maintenance

5.1 Daily and Weekly Maintenance

- Remove the debris from in and around the Pallet Grip®.
- Make sure that the pivoting roller moves freely and retracts fully.
- Examine the groove roller and make sure that it turns freely.
- Make sure that the film moves through the groove in the roller as the load wraps.

RETROFIT INSTALLATION

5.2 Pallet Grip® Adjustments

5.2.1 Pivoting Roller

| | Factory Setting | Installed Setting | Alternative Setting | Notes |
|---|-----------------|-------------------|---------------------|-------|
| The pivoting roller and the groove roller set the height of the film cable on the pallet. | 62° | | | |

1. Adjust the actuator to increase, decrease the angle of the roller when it is engaged.
2. Increase the movement of the roller to lower the position of the cable on the pallet. The standard adjustment for the roller is 62° from floor level.
3. Loosen the bolts to adjust.

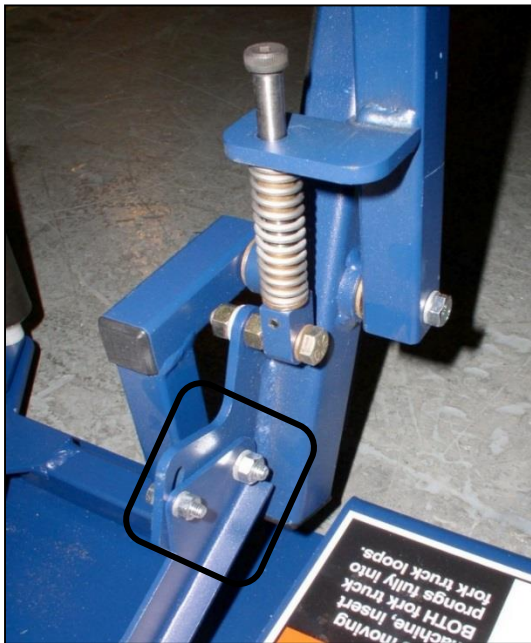


Figure 5.1



Figure 5.2

RETROFIT INSTALLATION

5.2.2 Film Roper - Groove Roller

Adjust the groove roller on the Film Roper to increase, decrease the quantity of the film to make the cable.

To adjust:

1. Fully engage the pivoting roller and loosen the 2 bolts on the film guide
2. Adjust the roller.

The standard adjustment for a standard height 127 mm (5") pallet:

- 203 mm (8") from the floor to the top of the groove in the guide roller.

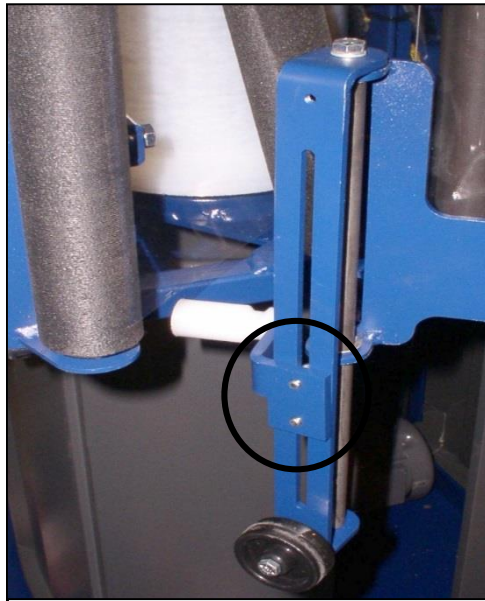


Figure 5.3

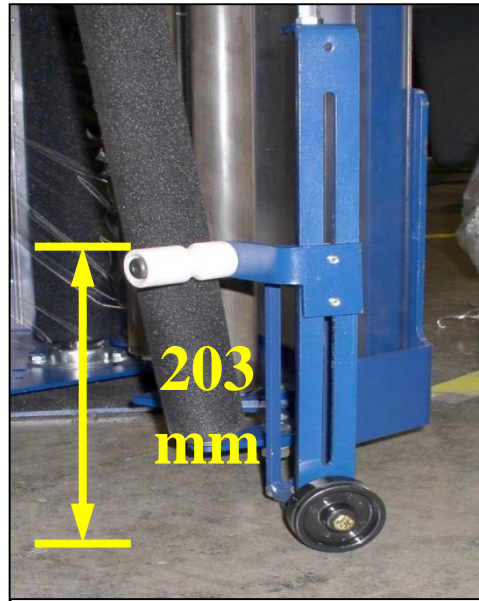



Figure 5.4

RETROFIT INSTALLATION

6.0 Troubleshooting

6.1 Pallet Grip® - Q300

| | Problem | Possible Cause | Solution |
|--|---|---|--|
| 1 | The film cable does not catch the 4 corners of the pallet. | The FDS does not lower correctly to wrap the pallet. | Lower the FDS “Down Travel” proximity sensor. |
| | | The groove roller is set too high for the height of the pallet | Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet. |
| 2 | The film cable did not form correctly. | The FDS does not lower correctly to wrap the pallet. | Lower the FDS “Down Travel” proximity sensor. |
| | | The groove roller is set too low for the height of the pallet. | Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet. |
| | | | Lower the FDS to fully engage the roller. Adjust the angle of the roller. |
| | | The pivoting roller does not move correctly to make the film cable. Note: The standard setting is 62° from floor level. |  |
| The “Wrap Force” is set too low. A slack film does not make a tight cable of film. | Increase the “Wrap Force” setting at the control panel. Note: Machines without PRS Plus (Load Cell) – Increase the “Reduced Tension” settings on PRS Drive board (SCR-3). | | |

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| | | | |
|---|---|--|--|
| 3 | <p>Machines with Auto Film Cut-off™ (AFC):</p> <p>The film does not cut at the end of the wrap cycle.</p> | <p>The AFC device is out of adjustment.</p> | <p>Adjust the position of the AFC.</p> |
| | | <p>The Auto Film Cut-off™ is “Off” (Configuration Bit C-14).</p> | <p>Make sure that the Configuration Bit C-14 is on.</p> |
| | | <p>The Preset timer (P.4) is set too low (Time To Run Roll Carriage Up At End Of Wrap Cycle).</p> <p>If the film cable stays at the bottom of the film, the film does not cut correctly.</p> | <p>Adjust the Preset timer P.4</p> <p>Make sure that the FDS lifts and disengages the groove roller.</p> |

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6.2 Pallet Grip® - Q300XT

| | Problem | Possible Cause | Solution |
|---|--|---|---|
| 4 | The film cable does not catch the 4 corners of the pallet. | The FDS does not lower correctly to wrap the pallet. | Lower the FDS “Down Travel” proximity sensor. |
| | | The groove roller is set too high for the height of the pallet | Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet. |
| 5 | The film cable did not form correctly. | The FDS does not lower correctly to wrap the pallet. | Lower the FDS “Down Travel” proximity sensor. |
| | | The groove roller is set too low for the height of the pallet. | Adjust the height of the groove roller. Make sure that the film cable wraps the top 25 – 38 mm (1”-1 ½”) of the pallet. |
| | | The pivoting roller does not move correctly to make the film cable. Note: The standard setting is 62° from floor level. | Lower the FDS to fully engage the roller. Adjust the angle of the roller. |
| | | The “Wrap Force” is set too low. A slack film does not make a tight cable of film. | Increase the “Wrap Force” setting at the control panel. Note: Machines without PRS Plus (Load Cell) – Increase the “Reduced Tension” settings on PRS Drive board (SCR-3). |

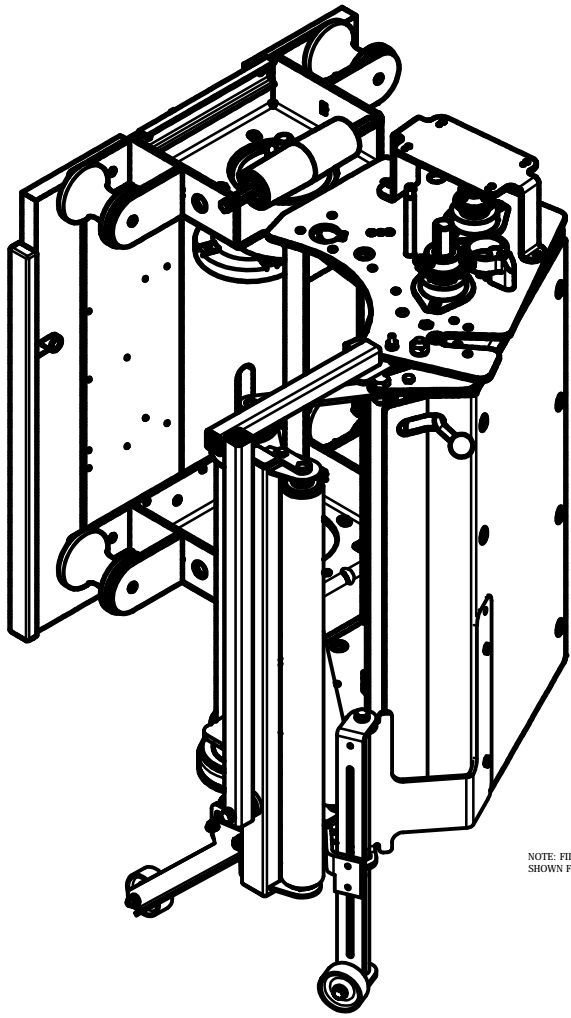


Item Number:
Serial Number: 31041704
Part Description: RETROFIT PALLET GRIP FOR A Q-SEMI 20 INCH CARRIAGE

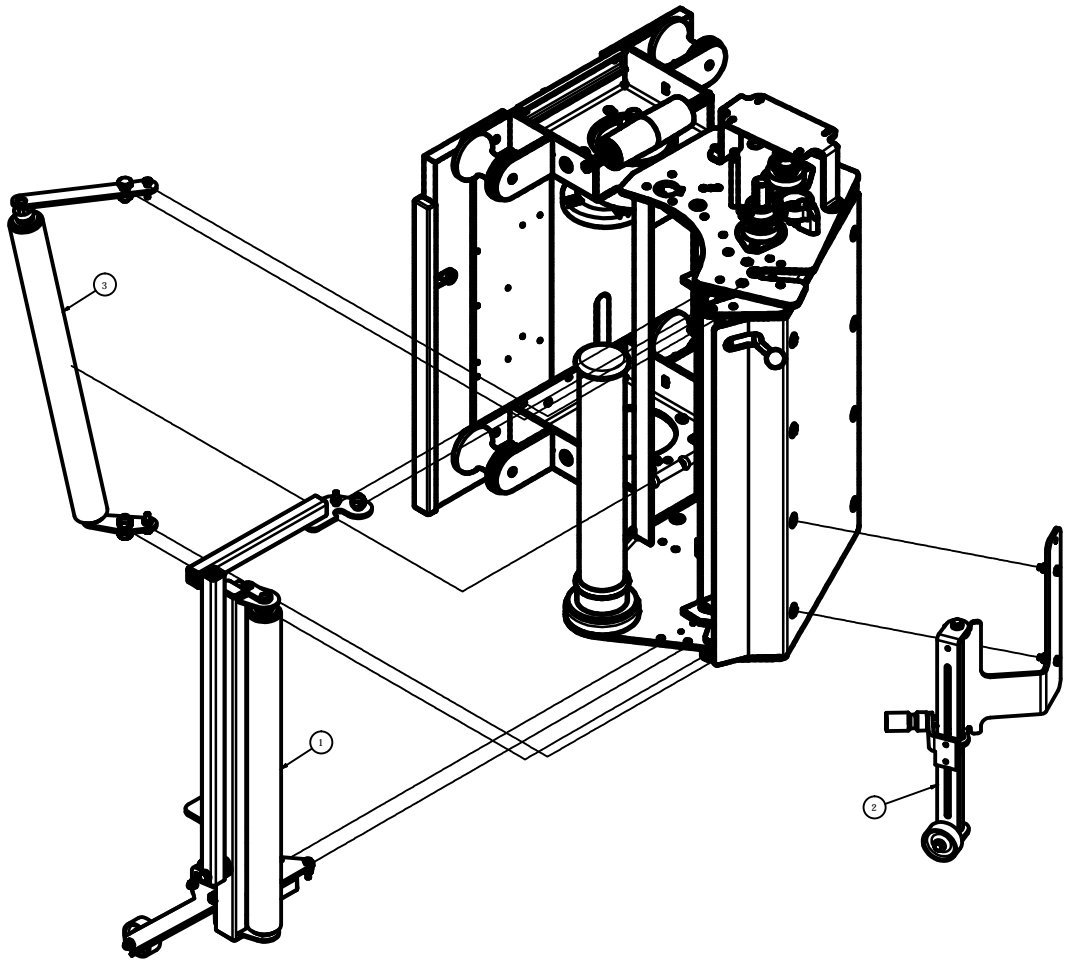
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|-------------|--------------|--|------------|
| 000001 | 30091488 | KIT PALLET GRIP QM-QX 20IN | 1.00000 |
| 000003 | 31016411 | RETROFIT KIT PALLET GRIP HARDWARE | 1.00000 |
| 000004 | 31074715 | ILLUSTRATION PALLET GRIP MOUNTING HOLE LOCATIONS Q-SEMI | 1.00000 |

Item Number: 000001
Part Number: 30091488
Part Description: KIT PALLET GRIP QM-QX 20IN

| Item | Part# | Description | Qty |
|-------------|--------------|--|------------|
| 000001 | 30091491 | PALLET GRIP ASM QM-QX CARRIAGE MOUNTED 20IN | 1.00000 |
| 000002 | 30091492 | ROPER ASM FOR QM-QX WITH PALLET GRIP | 1.00000 |
| 000003 | 30091495 | ROLLER ANGLED GATE MOUNTED ASM 20IN QM PALLET GRIP | 1.00000 |
| 000004 | 31049718 | LABEL KIT INSTALLATION PALLET-GRIP Q-SERIES | 1.00000 |



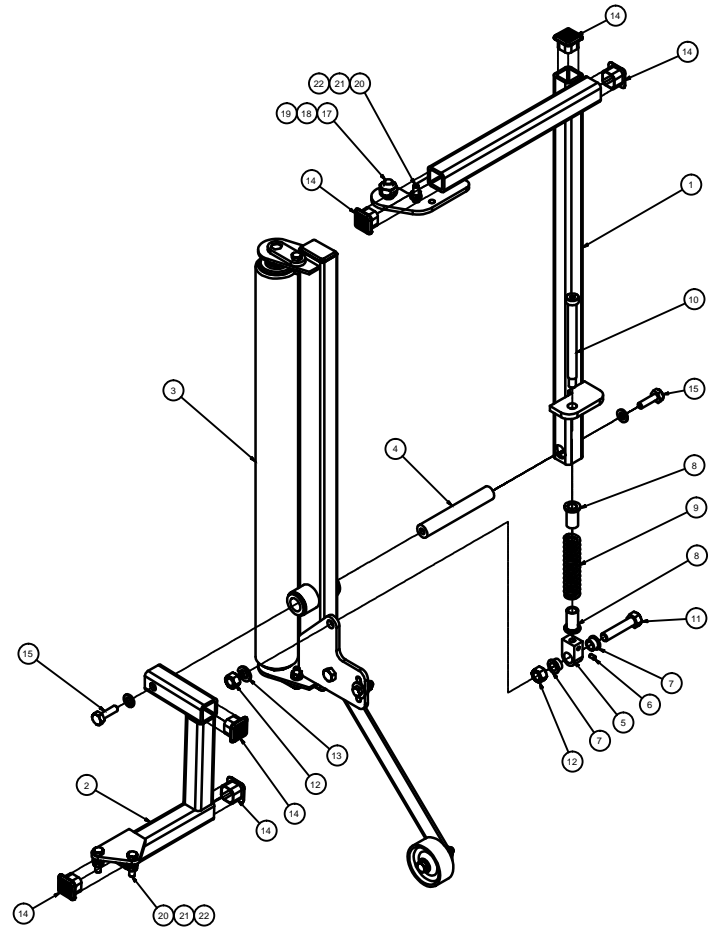
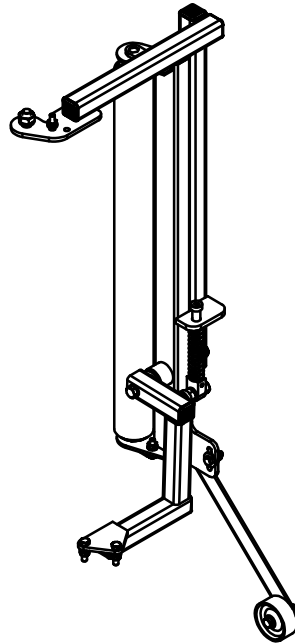
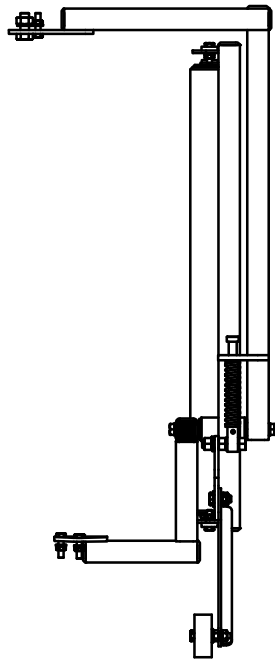
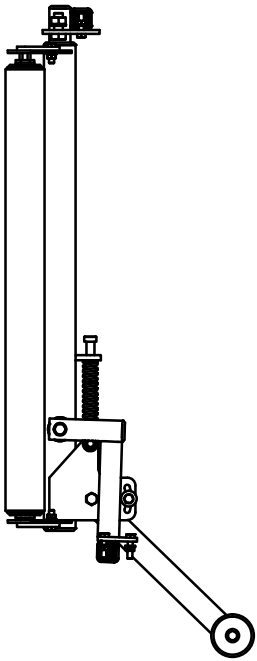
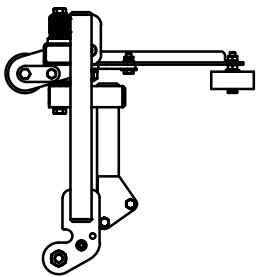
NOTE: FILM DELIVERY SYSTEM SHOWN FOR REFERENCE ONLY.



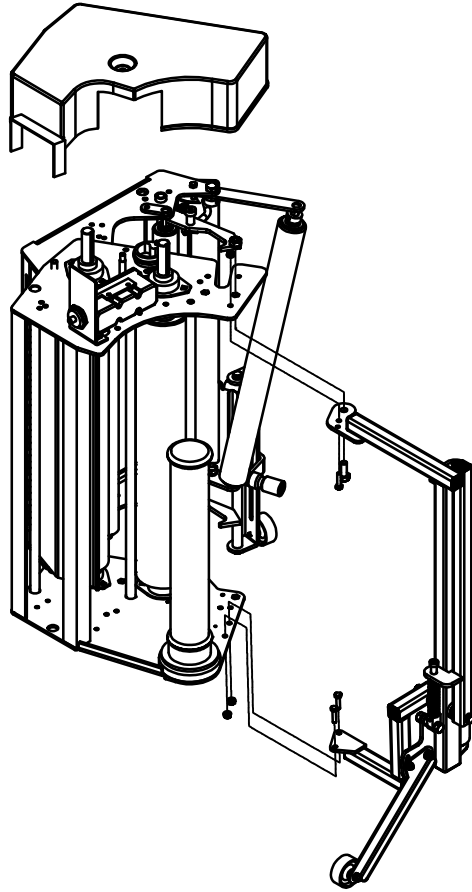
Item Number: 000001.000001
Part Number: 30091491
Part Description: PALLET GRIP ASM QM-QX CARRIAGE MOUNTED 20IN

| Item | Part# | Description | Qty |
|--------|----------|---|---------|
| 000001 | 30090085 | PALLET GRIP UPPER FRAME 20FDS | 1.00000 |
| 000002 | 30145157 | PALLET GRIP LOWER FRAME W/HRS BAR | 1.00000 |
| 000003 | 30091490 | PALLET GRIP SUB ASM QM-QX PIVOTING ROLLER 20IN | 1.00000 |
| 000004 | 30090088 | SHAFT ROLLER PIVOT | 1.00000 |
| 000005 | 30031745 | PLATE BLOCK CLEVIS | 1.00000 |
| 000006 | 30031750 | FASTENER SETSCREW #10-32 X 1/4 CUP | 1.00000 |
| 000007 | C-006329 | BUSHING FLANGE 0.377 ID X .502 OD X 5/16 LONG X 5/8 FLANGE OD X 1/16 FLANGE THICKNESS | 2.00000 |
| 000008 | 30019103 | BUSHING FLANGED 3/8 ID X 1/2 OD X 1 | 2.00000 |
| 000009 | 31026333 | SPRING COMPRESSION MUSIC WIRE 65.50LB/IN .105IN WIRE DIA 3.000IN X .720 OD | 1.00000 |
| 000010 | P-012414 | FASTENER SCREW SHOULDER 3/8 DIA X 4 W/ 5/16-18 SOCKET HEAD | 1.00000 |
| 000011 | 31025302 | FASTENER BOLT 3/8-16 X 1 3/4 HHCS GRADE 8 | 1.00000 |
| 000012 | S-007438 | FASTENER NUT HEX 3/8-16 GRADE 8 | 2.00000 |
| 000013 | S-005114 | WASHER LOCK 3/8 | 1.00000 |
| 000014 | 30096230 | PLUG PLASTIC 1IN SQ TUBING RIBBED (FITS .719 TO .844 ID SQ TUBING) PKG OF 100 | 6.00000 |
| 000015 | P-SH0825 | FASTENER BOLT M8X1.25 X 25MM HEX HEAD CAP ZINC PLATED STEEL CLASS 8.8 | 2.00000 |
| 000016 | P-WS0800 | WASHER SPRING LOCK M8 STEEL | 2.00000 |
| 000017 | P-SH1025 | FASTENER BOLT M10X1.5 X 25MM HEX HEAD CLASS 8.8 ZINC PLATED | 1.00000 |
| 000018 | P-WS1000 | WASHER SPRING LOCK M10 STEEL | 1.00000 |
| 000019 | P-NH1000 | FASTENER NUT HEX M10X1.5 CLASS 8.8 ZINC PLATED | 1.00000 |
| 000020 | P-SH0625 | FASTENER BOLT M6X1.0 X 25MM HEX HEAD CLASS 8.8 ZINC PLATED | 3.00000 |
| 000021 | P-WS0600 | WASHER SPRING LOCK M6 STEEL | 3.00000 |
| 000022 | P-NH0600 | FASTENER NUT HEX M6X1.0 CLASS 8 ZINC PLATED STEEL | 3.00000 |

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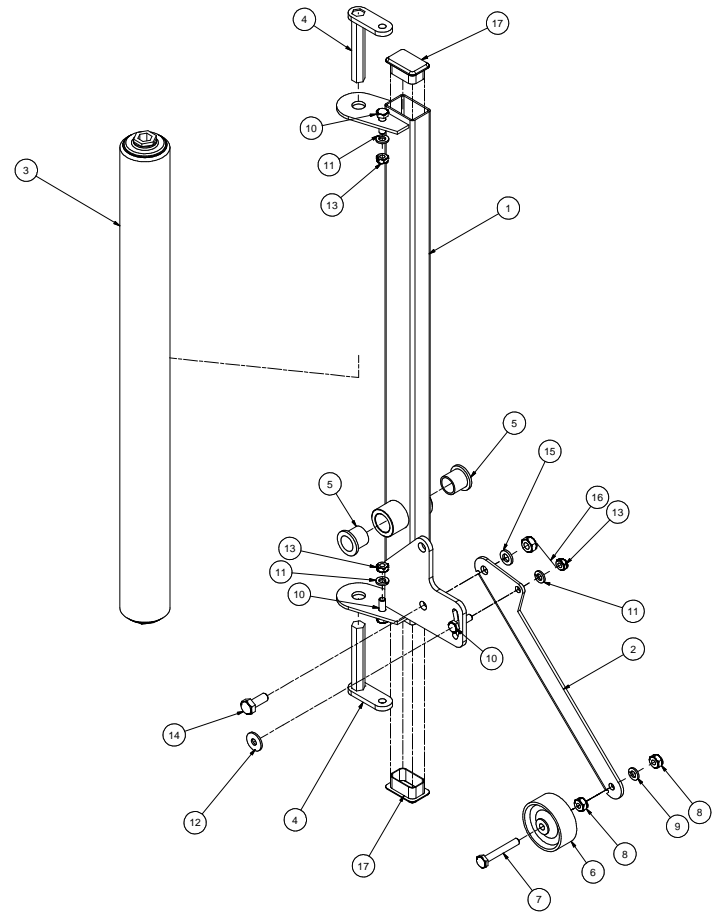
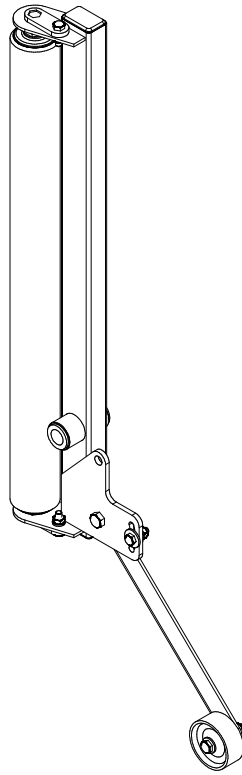
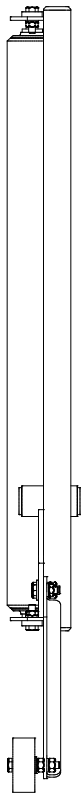
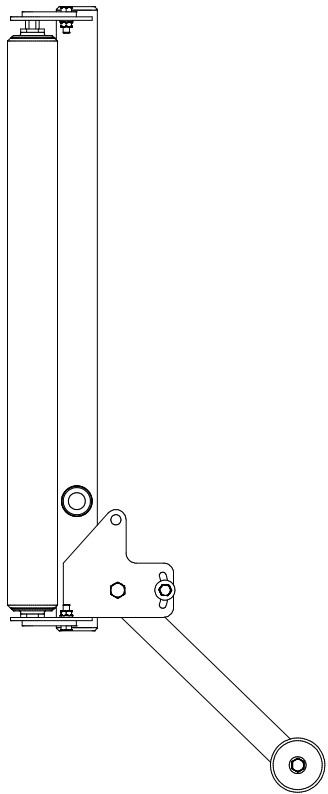
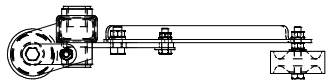
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MOUNT PALLET GRIP ASSEMBLY TO FILM CARRIAGE AS SHOWN ABOVE.

Item Number: 000001.000001.000003
Part Number: 30091490
Part Description: PALLET GRIP SUB ASM QM-QX PIVOTING ROLLER 20IN

| Item | Part# | Description | Qty |
|--------|----------|---|---------|
| 000001 | 30090075 | PALLET GRIP ADJUSTABLE ROLLER FRAME 20 FDS | 1.00000 |
| 000002 | 30090093 | ARM PALLET GRIP LEVER | 1.00000 |
| 000003 | 30181452 | ROLLER IDLER ASM 1-27/32 OD X 21-11/16 COATED 20IN FDS | 1.00000 |
| 000004 | 40402240 | SUPPORT FAB FDS IDLER ROLLER | 2.00000 |
| 000005 | 30091445 | BUSHING FLANGE 5/8 ID X 3/4 OD X 3/4 LG X 1 FLANGE OD X 3/32 FLANGE THICKNESS | 2.00000 |
| 000006 | 30029749 | WHEEL 2 OD X 0.25 ID (PLAIN BORE) POLYOLEFIN | 1.00000 |
| 000007 | S-006047 | FASTENER BOLT 1/4-20 X 1-3/4 HEX HEAD GRADE 5 | 1.00000 |
| 000008 | S-007436 | FASTENER NUT HEX 1/4-20 GRADE 8 ZINC DICHROMATE PLATED | 2.00000 |
| 000009 | S-007116 | WASHER LOCK 1/4 | 1.00000 |
| 000010 | 30029802 | FASTENER BOLT M6X1.0 X 20MM HEX HEAD CLASS 8.8 ZINC PLATED | 3.00000 |
| 000011 | P-WS0600 | WASHER SPRING LOCK M6 STEEL | 3.00000 |
| 000012 | P-WF0600 | WASHER FLAT M6 HARDENED STEEL NARROW SERIES (13MM) ZINC PLATED | 1.00000 |
| 000013 | P-NH0600 | FASTENER NUT HEX M6X1.0 CLASS 8 ZINC PLATED STEEL | 3.00000 |
| 000014 | 31011238 | FASTENER BOLT M8X1.25 X 20MM HEX HEAD CAP CLASS 8.8 ZINC PLATED STEEL | 1.00000 |
| 000015 | P-WS0800 | WASHER SPRING LOCK M8 STEEL | 1.00000 |
| 000016 | P-NH0800 | FASTENER NUT HEX M8X1.25 ZINC PLATED STEEL | 1.00000 |
| 000017 | 30096265 | PLUG PLASTIC 1 X 1-1/2 TUBING (FITS .884 - .925 X 1.344 - 1.425) RIBBED | 2.00000 |



| | | | |
|---|---------------|---|----------------|
| UNLESS OTHERWISE NOTED, STANDARD TOLERANCES: ANGLES: ± 1° TOTAL RUNOUT FLATNESS: ± 1/16" PER FT. FRACTIONS: 1/32" DECIMALS: .XX ± .015" X ± .060" .XXX ± .005" .X ± .030" .XXX ± .001" | | Lantech [®] | |
| THIS SHEET OF DRAWINGS AND THE INFORMATION CONTAINED HEREIN IS PROPRIETARY AND PROPERTY OF LANTECH, INC. | | TITLE PALLET GRIP SUB ASM QM-QX PIVOTING ROLLER 20IN | |
| REFERENCE | MATERIAL | ENGINEER | DRAWING NUMBER |
| SIZE DRAFTER D CLP | SCALE 7=16 | DATE 1/31/2005 | 30091490 |
| | | SHEET 1 OF 1 | |

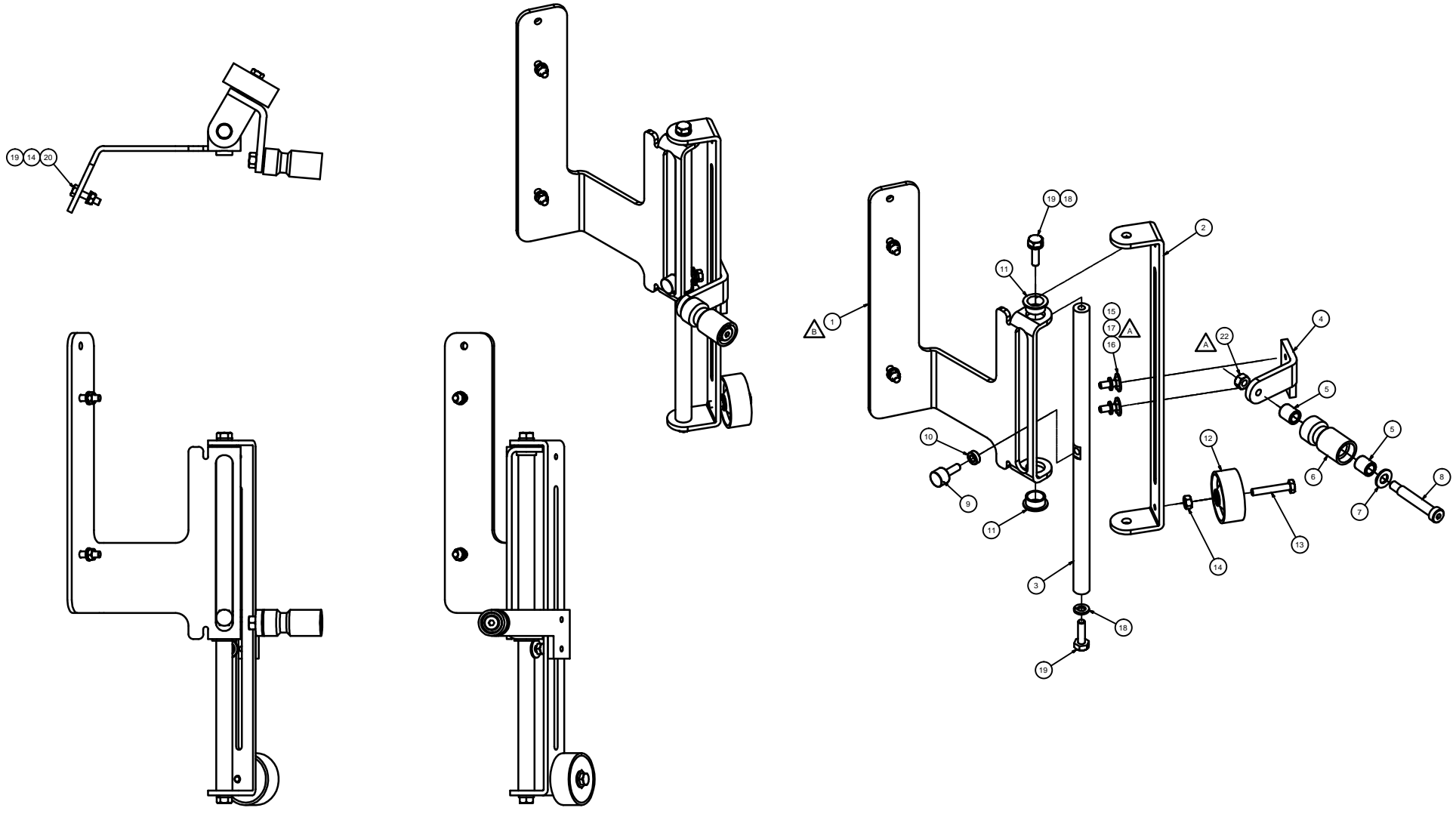
Item Number: 000001.000002
Part Number: 30091492
Part Description: ROPER ASM FOR QM-QX WITH PALLET GRIP

| Item | Part# | Description | Qty |
|--------|----------|--|---------|
| 000001 | 30090166 | MOUNT FORMED ROPER SLIDE SHAFT | 1.00000 |
| 000002 | 30072458 | PLATE FORMED QM-XT ADJUSTMENT BAR | 1.00000 |
| 000003 | 30075566 | SHAFT GUIDE TAPPED QM-XT ROPER | 1.00000 |
| 000004 | 30090072 | MOUNT FORMED ROPER ROLLER | 1.00000 |
| 000005 | 30029748 | BEARING 0.375 ID X 0.563 OD X 0.625 LG NEEDLE | 2.00000 |
| 000006 | 30090078 | ROLLER ROPER NYLON | 1.00000 |
| 000007 | S-007054 | WASHER THRUST 3/8 ID X 3/4 OD X 1/16 THICK | 1.00000 |
| 000008 | 30018421 | FASTENER SCREW SHOULDER 3/8 DIA X 2 SOCKET HEAD | 1.00000 |
| 000009 | 30029763 | CAM FOLLOWER 0.625 OD 1/4-28 STUD | 1.00000 |
| 000010 | 30029767 | SPACER 0.500 OD X 0.1875 LG. FOR 0.250 | 1.00000 |
| 000011 | 30000282 | BUSHING FLANGE 5/8 IN ID X 3/4 IN OD X 3/8 IN LG X 15/16 IN FLANGE OD X 1/16 IN FLANGE THICKNESS STEEL | 2.00000 |
| 000012 | 30029749 | WHEEL 2 OD X 0.25 ID (PLAIN BORE) POLYOLEFIN | 1.00000 |
| 000013 | S-005133 | FASTENER BOLT 1/4-20 X 1-1/2 HEX HEAD GRADE 5 ZINC DICHROMATE PLATED | 1.00000 |
| 000014 | S-007436 | FASTENER NUT HEX 1/4-20 GRADE 8 ZINC DICHROMATE PLATED | 1.00000 |
| 000015 | P-WS0600 | WASHER SPRING LOCK M6 STEEL | 4.00000 |
| 000016 | 30040493 | WASHER FENDER M6 DIN 9021 HARDENED STEEL ZINC PLATED | 2.00000 |
| 000017 | P-SH0616 | FASTENER BOLT M6X1 X 16MM HEX HEAD CAP CLASS 8.8 ZINC PLATED STEEL | 2.00000 |
| 000018 | P-WS0800 | WASHER SPRING LOCK M8 STEEL | 2.00000 |
| 000019 | P-SH0825 | FASTENER BOLT M8X1.25 X 25MM HEX HEAD CAP ZINC PLATED STEEL CLASS 8.8 | 2.00000 |
| 000020 | P-NH0600 | FASTENER NUT HEX M6X1.0 CLASS 8 ZINC PLATED STEEL | 2.00000 |

| Item | Part# | Description | Qty |
|--------|----------|--|---------|
| 000021 | P-SH0625 | FASTENER BOLT M6X1.0 X 25MM HEX HEAD CLASS 8.8 ZINC PLATED | 2.00000 |
| 000022 | S-005515 | FASTENER NUT HEX 5/16-18 GRADE 8 ZINC PLATED | 1.00000 |

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|------|-------------------------------|------|-----------------------------|
| ECN# | ITEM #1 30090166 WAS 30090090 | ECN# | ADDED ITEM 22, CHFD ITEM 16 |
| | 014623 | | 014282 |
| B | INT:MRM DATE: 12 MAY 2005 | A | INT:GLP DATE: 13 APR 2005 |

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UNLESS OTHERWISE NOTED: STANDARD TOLERANCES ANGLES ±1° TOTAL RUNOUT FLATNESS ±1/16" PER FT.

FRACTIONS: -X ±.030" ± 1/32" -XX ±.015" DECIMALS: -XXX ±.005" -XXXX ±.001" X ±.060"

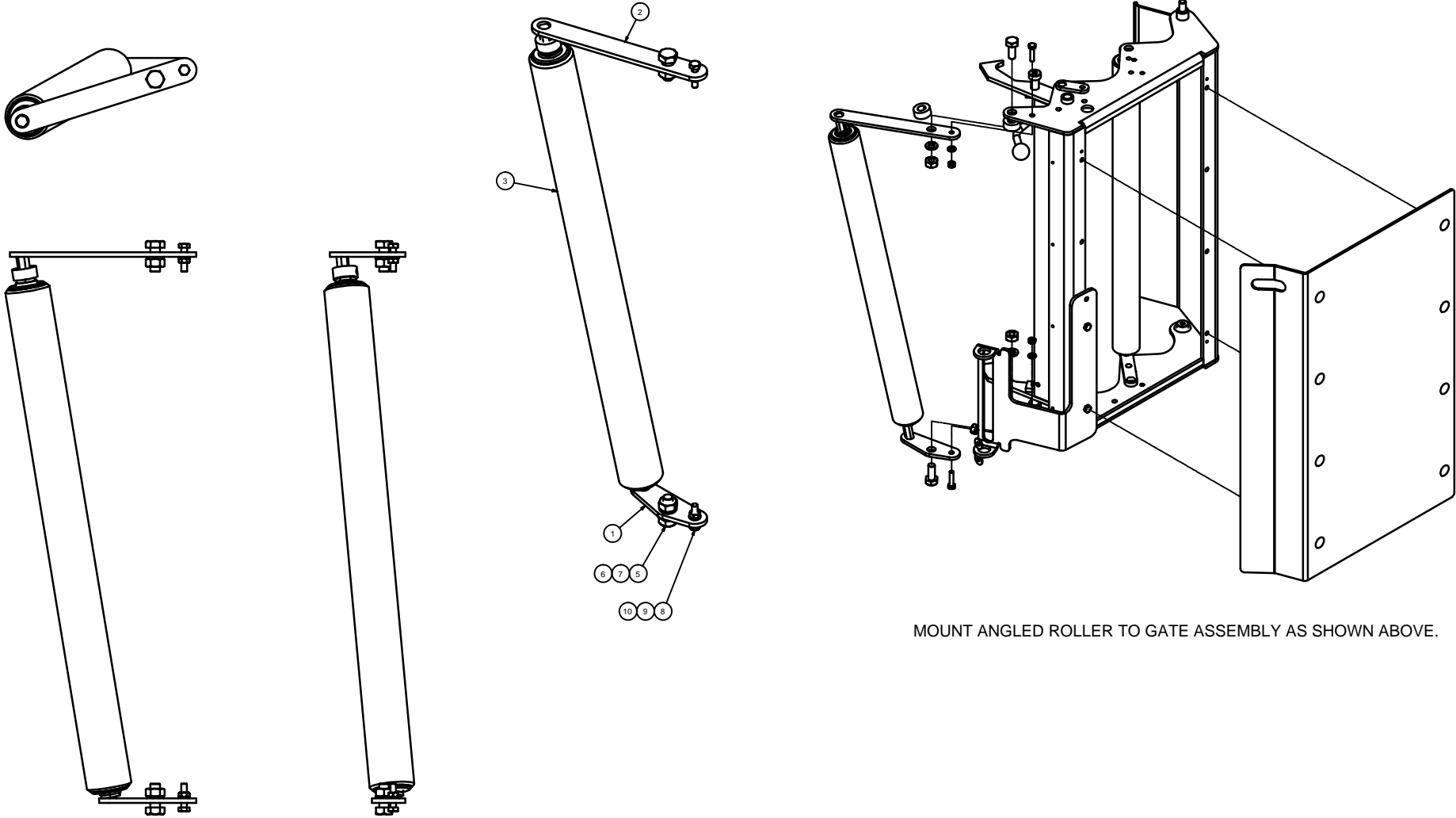
FILE ROPER ASM FOR QM-QX WITH PALLET GRIP

| | | | | | | | | | | | | | | |
|-------|-----|----------|----|------|-------------|-------|-------|-------|----|---|-----|---|----|----------|
| DRAWN | GLP | ENGINEER | CM | DATE | 31 JAN 2005 | SCALE | REF # | SHEET | OF | 1 | REV | D | NO | 30091492 |
|-------|-----|----------|----|------|-------------|-------|-------|-------|----|---|-----|---|----|----------|

Item Number: 000001.000003
Part Number: 30091495
Part Description: ROLLER ANGLED GATE MOUNTED ASM 20IN QM PALLET GRIP

| Item | Part# | Description | Qty |
|--------|----------|--|---------|
| 000001 | 30090096 | MOUNT FAB ROLLER IDLER PIN PALLET GRIP BOTTOM | 1.00000 |
| 000002 | 30090094 | MOUNT FAB ROLLER IDLER PIN PALLET GRIP TOP | 1.00000 |
| 000003 | 30181452 | ROLLER IDLER ASM 1-27/32 OD X 21- 11/16 COATED 20IN FDS | 1.00000 |
| 000004 | P-000145 | COLLAR SHAFT 1/2IN ONE PIECE SOLID ZINC PLATED 1 SET SCREW | 1.00000 |
| 000005 | P-SH1025 | FASTENER BOLT M10X1.5 X 25MM HEX HEAD CLASS 8.8 ZINC PLATED | 2.00000 |
| 000006 | P-WS1000 | WASHER SPRING LOCK M10 STEEL | 2.00000 |
| 000007 | P-NH1000 | FASTENER NUT HEX M10X1.5 CLASS 8.8 ZINC PLATED | 2.00000 |
| 000008 | P-SH0625 | FASTENER BOLT M6X1.0 X 25MM HEX HEAD CLASS 8.8 ZINC PLATED | 2.00000 |
| 000009 | P-WS0600 | WASHER SPRING LOCK M6 STEEL | 2.00000 |
| 000010 | P-NH0600 | FASTENER NUT HEX M6X1.0 CLASS 8 ZINC PLATED STEEL | 2.00000 |

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MOUNT ANGLED ROLLER TO GATE ASSEMBLY AS SHOWN ABOVE.

Item Number: 000001.000003.000003
Part Number: 30181452
Part Description: ROLLER IDLER ASM 1-27/32 OD X 21-11/16 COATED 20IN FDS

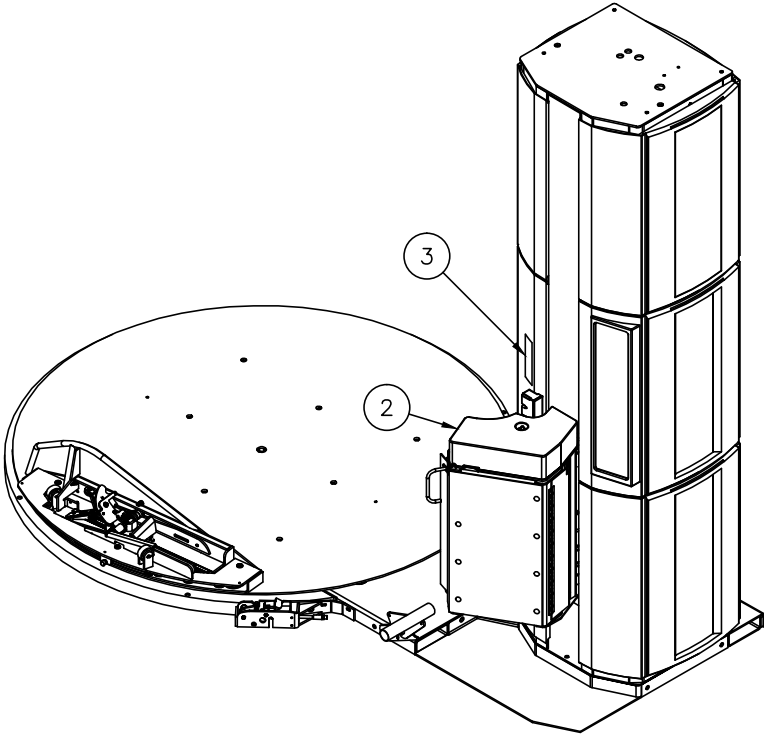
| Item | Part# | Description | Qty |
|-------------|--------------|--|------------|
| 000001 | 40402298 | ROLLER IDLER TUBE 1-27/32 OD X 21 OPEN CELL COATED | 1.00000 |
| 000002 | 30189250 | BEARING INSERT ROLLER 7/16 HEX BORE STEEL HOUSING CB14 CONV WITH OD 1.456-1.457 INCHES | 2.00000 |
| 000003 | 30182033 | ILLUSTRATION ASSEMBLY ROLLERS IDLER | 1.00000 |

Item Number: 000001.000004
Part Number: 31049718
Part Description: LABEL KIT INSTALLATION PALLET-GRIP Q-SERIES

| Item | Part# | Description | Qty |
|-------------|--------------|--|------------|
| 000002 | 31048207 | LABEL NOTICE 'READ INSTRUCTION MANUAL FOR PALLET GRIP SET-UP' | 1.00000 |
| 000003 | 31040293 | LABEL MARKETING 'PALLET-GRIP' | 1.00000 |

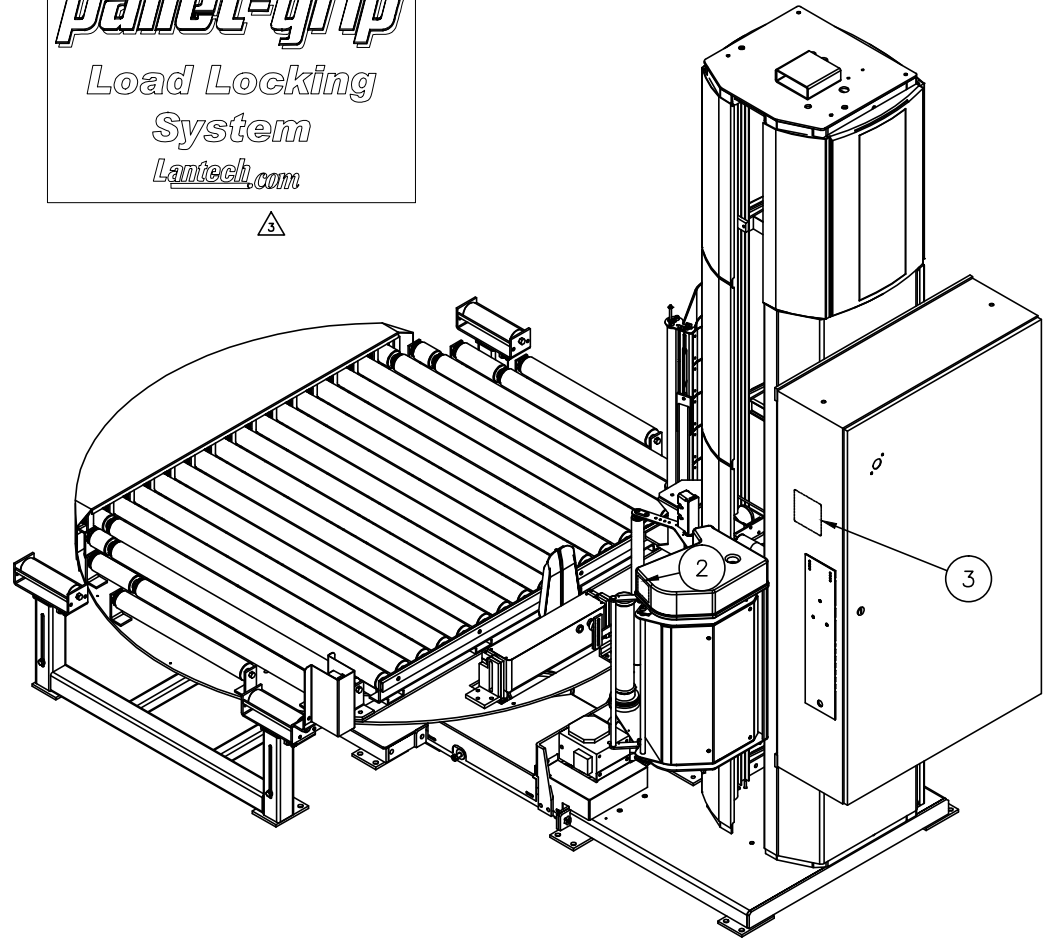
PLACE PALLET GRIP DECALS ON Q-SEMI EQUIPMENT AS SHOWN

NOTICE
 Read Instruction Manual for Pallet Grip[®] set-up to ensure proper Load Locking capability.



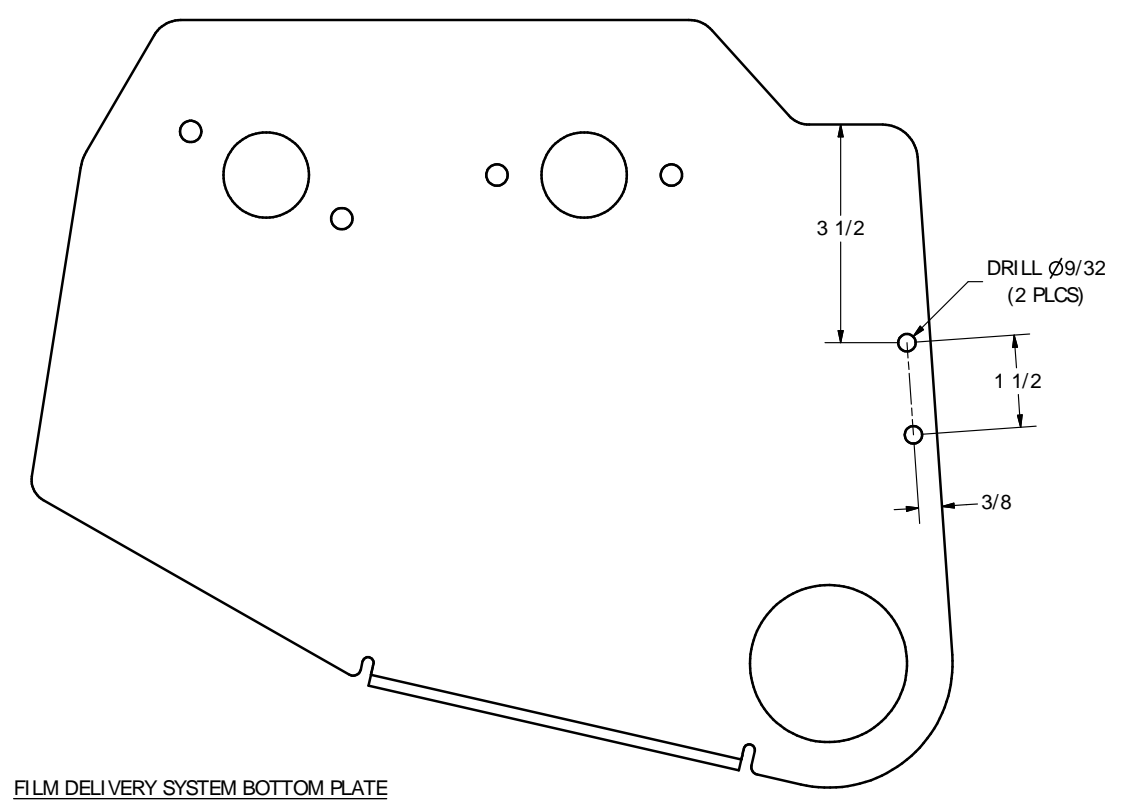
PLACE PALLET GRIP DECALS ON Q-AUTO EQUIPMENT AS SHOWN

Wrapping With
pallet-grip
Load Locking
System
 Lantech.com

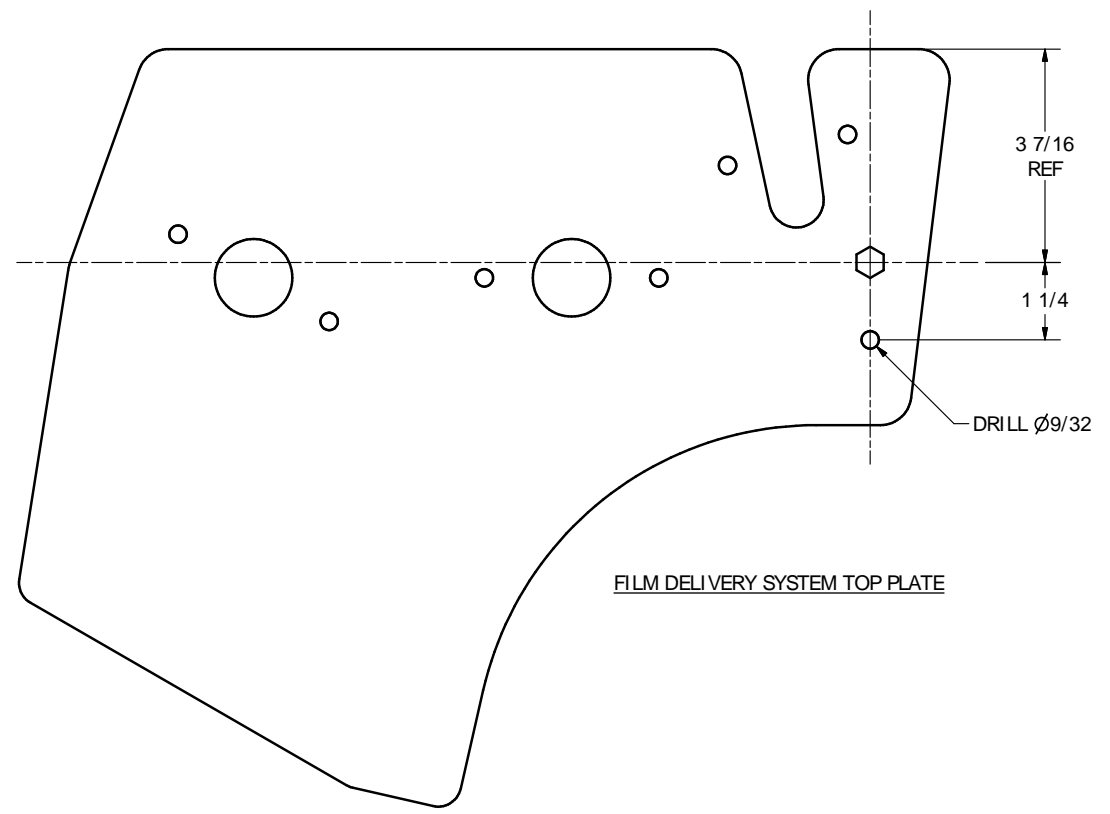


Item Number: 000003
Part Number: 31016411
Part Description: RETROFIT KIT PALLET GRIP HARDWARE

| Item | Part# | Description | Qty |
|-------------|--------------|--|------------|
| 000001 | P-SH0630 | FASTENER BOLT M6X1.0 X 30MM HEX HEAD CAP ZINC PLATED STEEL | 1.00000 |
| 000002 | P-SH0616 | FASTENER BOLT M6X1 X 16MM HEX HEAD CAP CLASS 8.8 ZINC PLATED STEEL | 1.00000 |
| 000004 | 30057780 | FASTENER BOLT M10X1.5 X 30MM HEX HEAD | 3.00000 |
| 000005 | P-WS1000 | WASHER SPRING LOCK M10 STEEL | 1.00000 |
| 000006 | 30082594 | FASTENER NUT HEX M10 X 1.50MM W/TOOTH WASHER (KEPS NUT) | 2.00000 |
| 000007 | 30029802 | FASTENER BOLT M6X1.0 X 20MM HEX HEAD CLASS 8.8 ZINC PLATED | 3.00000 |



FILM DELIVERY SYSTEM BOTTOM PLATE



FILM DELIVERY SYSTEM TOP PLATE

| | | | | |
|--|-----------------------|--|----------------------|-----------------------------------|
| INCHES | | Lantech® | | |
| THIRD ANGLE PROJECTION | | TITLE | | |
| | | ILLUSTRATION PALLET GRIP MOUNTING HOLE LOCATIONS Q-SEMI | | |
| UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: | | | | |
| FRACTIONS ± 1/32 | DECIMALS X.X± .030 | FLATNESS ± 1/16 | REFERENCE NO. N/A | MATERIAL HRS ASTM A1011 P&O |
| ANGLES ± 1° | X.XX± .015 | PER FOOT X.XXX± .005 | SIZE C | ENGINEER DAL |
| THIS SHEET OF DRAWINGS AND THE INFORMATION CONTAINED HEREIN IS PROPRIETARY AND PROPERTY OF LANTECH, INC. | | | DRAFTER DAL | DRAWING NUMBER 31074715 |
| SCALE 1=4 | | DATE 9/29/2010 | SHEET 1 OF 1 | |