2200 Precision Move Pallet System Accessories

Installation, Maintenance & Parts Manual

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851-800 Rev. A

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IMPORTANT

Some illustrations may show guards removed. DO NOT operate equipment without guards.

Upon receipt of shipment:

- Compare shipment with packing slip. Contact factory regarding discrepancies.
- Inspect packages for shipping damage. Contact carrier regarding damage.
- Accessories may be shipped loose. See accessory instructions for installation.

Dorner's Limited Warranty applies.

Dorner has convenient, pre–configured kits of Key Service Parts for all conveyor products. These time saving kits are easy to order, designed for fast installation, and guarantee you will have what you need when you need it. Key Parts and Kits are marked in the Service Parts section of this manual with the Performance Parts Kits logo .

Dorner reserves the right to make changes at any time without notice or obligation.

Warnings – General Safety

⚠ WARNING

The safety alert symbol, black triangle with white exclamation, is used to alert you to potential personal injury hazards.

⚠ DANGER

Climbing, sitting, walking or riding on conveyor will cause severe injury. KEEP OFF CONVEYORS.

⚠ DANGER

DO NOT OPERATE CONVEYORS IN AN EXPLOSIVE ENVIRONMENT.

⚠ WARNING

Exposed moving parts can cause severe injury. LOCK OUT POWER before removing guards or performing maintenance.

⚠ WARNING

Gearmotors may be HOT.

DO NOT TOUCH Gearmotors.

⚠ WARNING

Dorner cannot control the physical installation and application of conveyors. Taking protective measures is the responsibility of the user.

When conveyors are used in conjunction with other equipment or as part of a multiple conveyor system, CHECK FOR POTENTIAL PINCH POINTS and other mechanical hazards before system start-up.

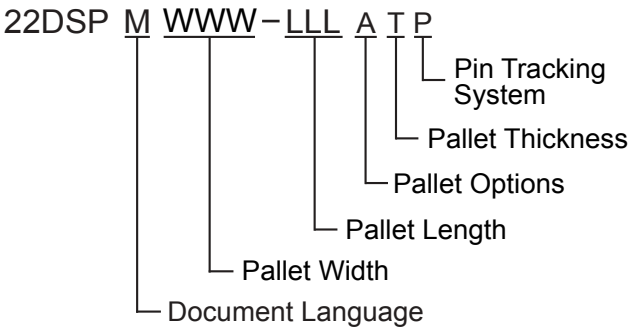
⚠ WARNING

Loosening stand height or angle adjustment screws may cause conveyor sections to drop down, causing severe injury.

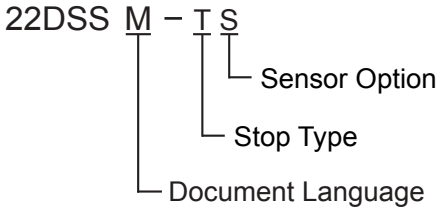
SUPPORT CONVEYOR SECTIONS PRIOR TO LOOSENING STAND HEIGHT OR ANGLE ADJUSTMENT SCREWS.

Accessories:

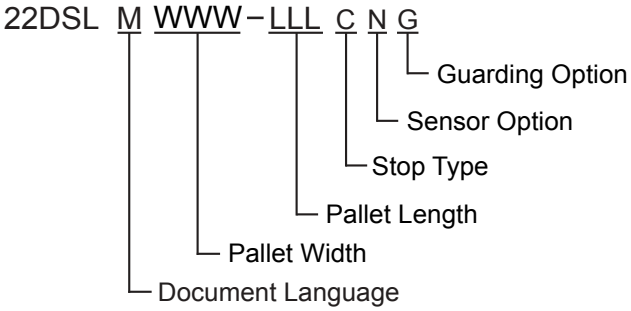
Pallets



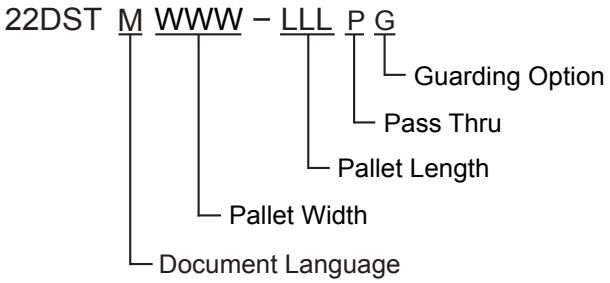
Pallet Stops



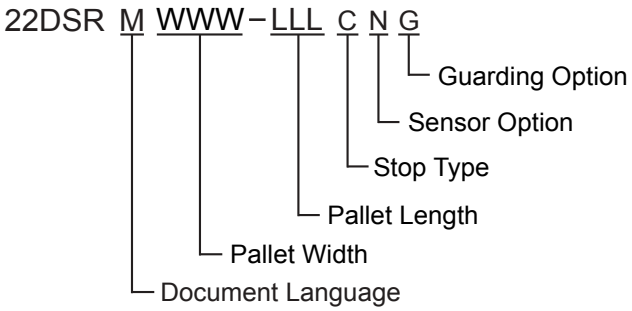
Lift and Locate Station



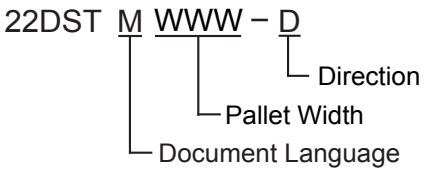
Lift and Transfer Station



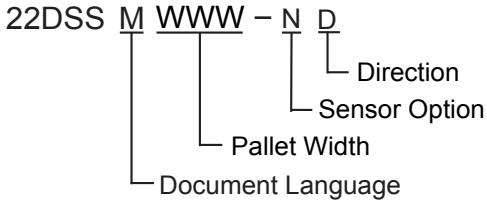
Lift and Rotate Station



90° Corner



90° Corner and Merge



Installation

Required Tools

- .050" hex wrench
- 2 mm hex wrench
- 3 mm hex wrench
- 5 mm hex wrench
- 6 mm hex wrench
- 8 mm wrench
- 12 mm wrench
- 13 mm wrench
- 17 mm wrench
- 19 mm wrench
- T20 torque wrench
- Flat blade screw driver
- Pliers
- Rubber mallet
- Spanner Wrench

Conveyor Tie Brackets

1. Install twist-in studs **(Figure 1, item 1)** into conveyor channels **(Figure 1, item 2)**. Install tie bracket **(Figure 1, item 3)** over studs.

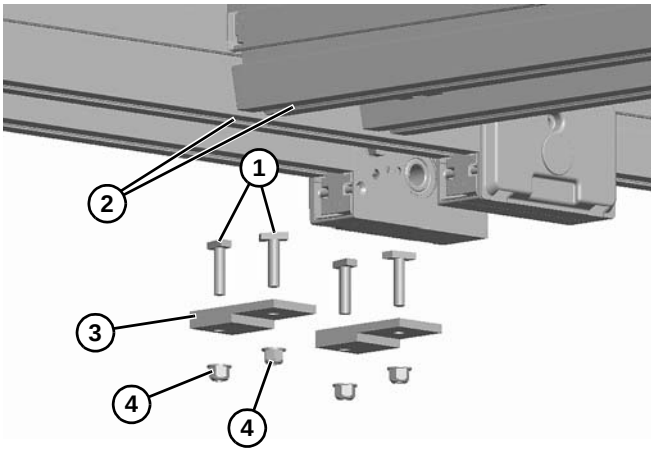


Figure 1

NOTE
Make sure that the stud(s) rotate inside the channel and engage with the conveyor.

2. Thread lock nuts **(Figure 1, item 4)** onto studs and tighten.
3. Repeat for opposite conveyors.

Pallets

1. Place pallet **(Figure 2, item 1)** on conveyor belts **(Figure 2, item 2)**.

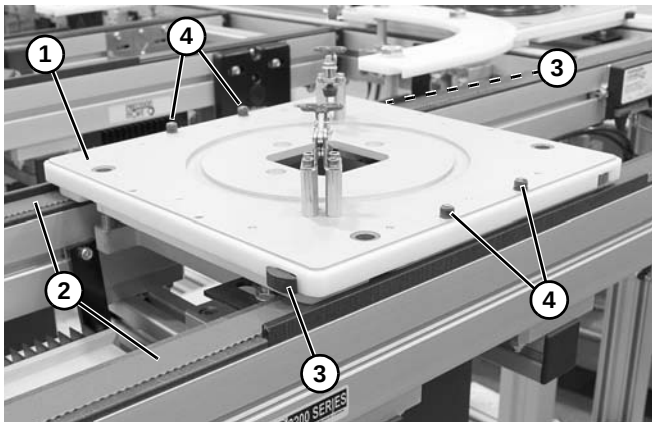


Figure 2

2. Make sure that the bumpers **(Figure 2, item 3)** are facing in the direction of travel over the belts. Make sure that the roller pins **(Figure 2, item 4)** are towards the outside of the conveyor rail.

Pallet Stops

1. Install cam follower nuts **(Figure 3, item 1)** into conveyor channel.

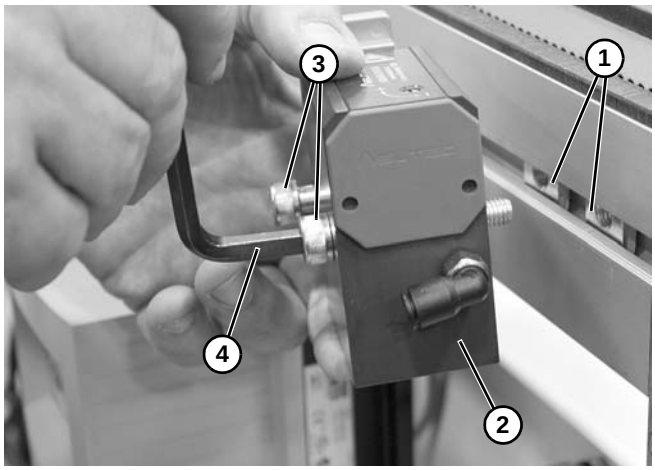


Figure 3

2. Install pallet stop **(Figure 3, item 2)** to conveyor using socket head screws **(Figure 3, item 3)**. Tighten screws with hex wrench **(Figure 3, item 4)**.

Pneumatic and Control Logic Suggestions

Recommended Pneumatics

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 4)** to operate Pallet Stops.

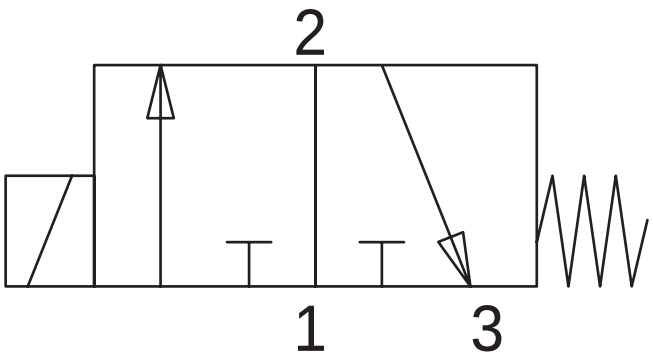


Figure 4

Attaching and Operations of Pneumatics

1. Connect the solenoid to the stop. Dorner fittings **(Figure 5, item 1)** accept 1/4" outside diameter tubing standard **(Figure 5, item 2)**.

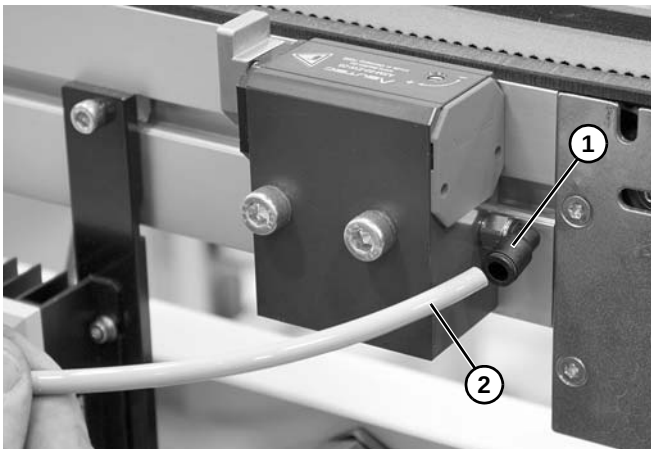


Figure 5

2. Stops release when air is supplied to the stop. The stops only need to be released long enough for the leading pallet skirt to clear the stop.

Sensor Installation and Basic Logic

2 Options:

- Bottom Mount Sensor
- Side Mount Sensor

Optional bottom mount **(Figure 6, item 1)** or side mount **(Figure 6, item 2)** sensor brackets can be used to mount a 12 mm barrel proximity sensor **(Figure 6, item 3)**.

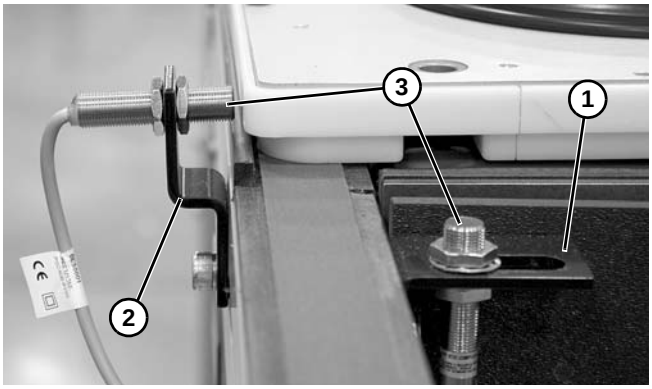


Figure 6

- On an in-frame stop, two bottom **(Figure 7, item 1)** and two side flags **(Figure 7, item 2)** (when bumpers are not installed) can be used for sensing.

Figure 7

- Use proximity sensor to detect pallet located at the stop.
- The stop can reset after a short delay when the proximity sensor signal clears.
- Stop only has to be released long enough to clear pallet skirt that was stopped. Notches **(Figure 7, item 3)** in skirt allow for continued travel either before stop when stop placed on the right conveyor (stop is catching on trailing skirt) or after stop when stop is placed on left conveyor (stop is catching on leading skirt).

Installation

Optional Sensors

1. Install cam follower nut **(Figure 8, item 1)** into conveyor channel.

Figure 8

2. Install bottom mount bracket **(Figure 9, item 1)** and/or side mount bracket **(Figure 10, item 1)** with socket head screw **(Figure 9, item 2)** or **(Figure 10, item 2)**.

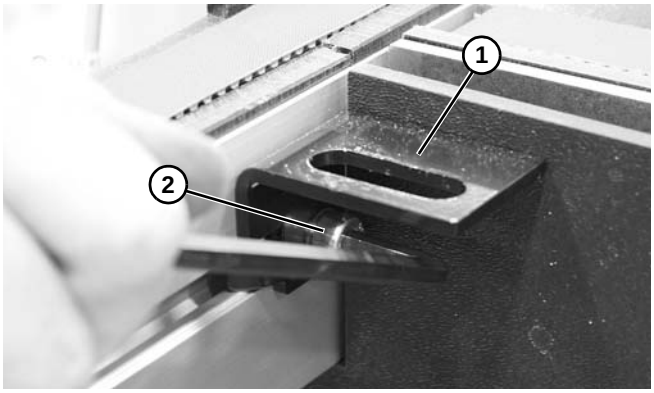


Figure 9

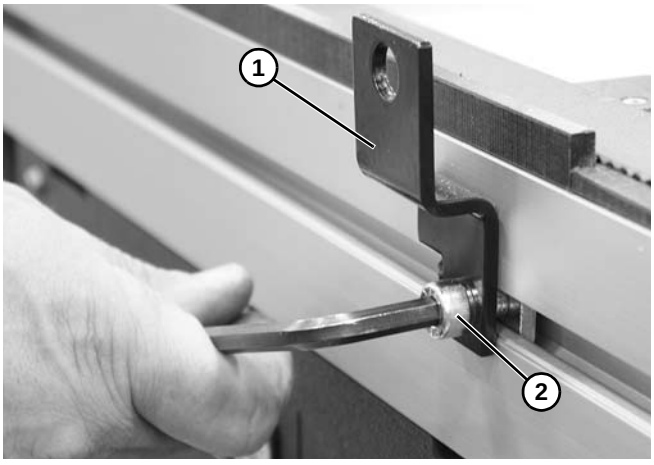


Figure 10

3. Loosen hex nuts **(Figure 11, item 1)** or **(Figure 12, item 1)** securing sensor to bracket.

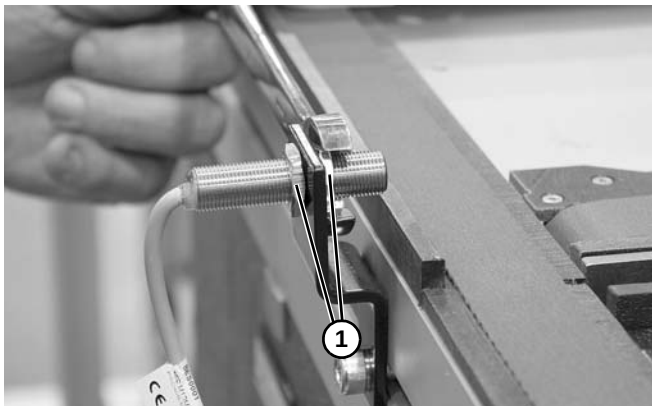


Figure 11

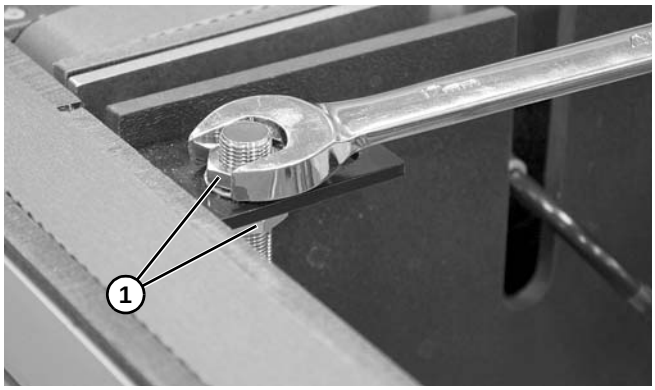


Figure 12

4. Adjust sensors **(Figure 13, item 1)** in/out or up/down to maintain clearance between pallet **(Figure 13, item 2)** and sensor.

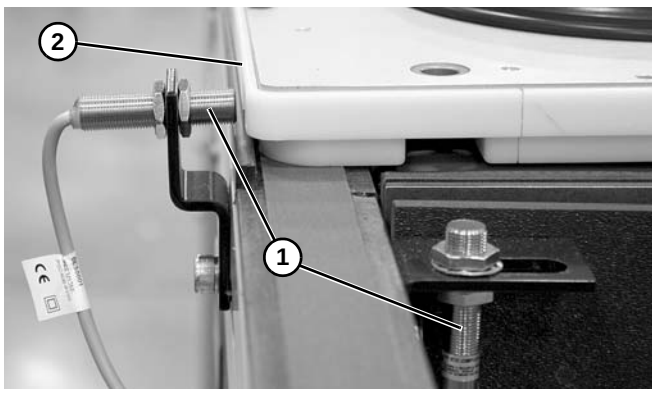


Figure 13

5. Tighten nuts.

Lift and Locate Station

1. Raise lift and locate station **(Figure 14, item 1)** into postion from under the conveyor, lining up bolts **(Figure 14, item 2)** with follower nuts in conveyor channel.

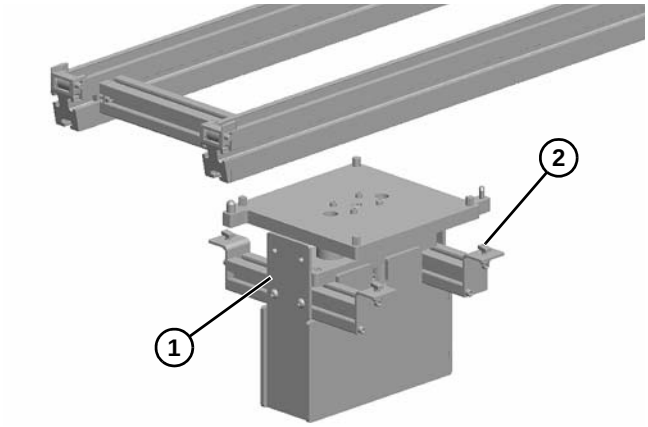


Figure 14

2. Tighten bolts **(Figure 15, item 1)** to follower nuts **(Figure 15, item 2)** inside channel.

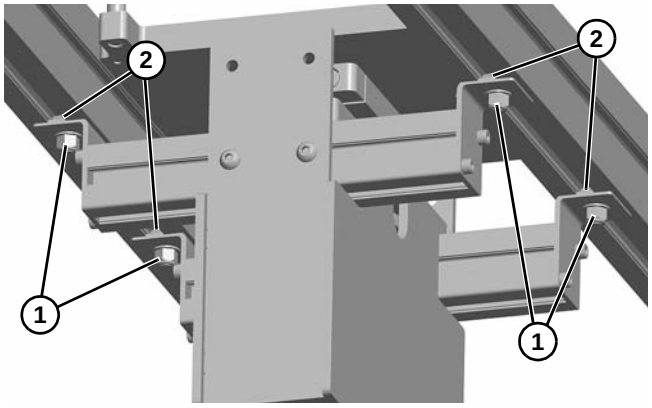


Figure 15

3. Place pallet **(Figure 16, item 1)** on lift and locate top plate **(Figure 16, item 2)**. Raise top plate to underside of pallet.

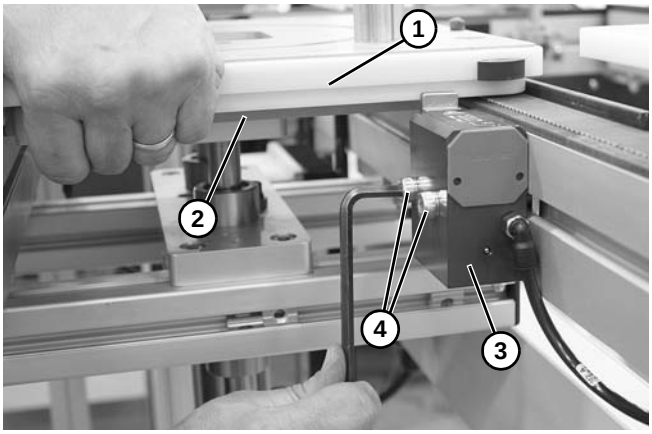


Figure 16

4. Install pallet stop **(Figure 16, item 3)**. See"Pallet Stops" on page 6.
5. Position stop against pallet and tighten socket head screws **(Figure 16, item 4)**.

Stroke Sensing Adjustment

1. To adjust cylinder stroke sensors, loosen set screw **(Figure 17, item 1)** and move sensor **(Figure 17, item 2)** up or down in channel **(Figure 17, item 3)**. Tighten set screw.

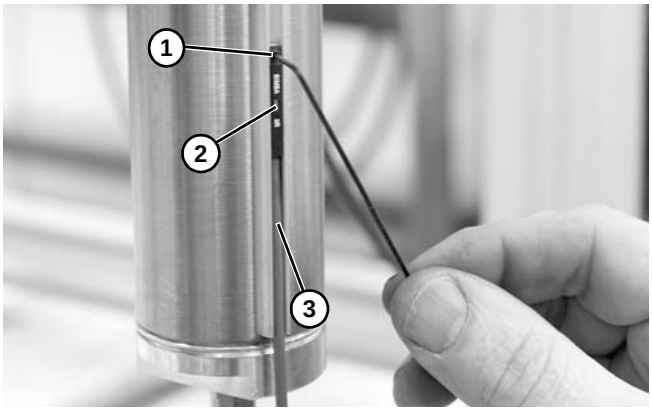


Figure 17

Installation

Stroke Adjustment

1. To adjust stroke, loosen screws **(Figure 18, item 1)** on bottom plate **(Figure 18, item 2)**.

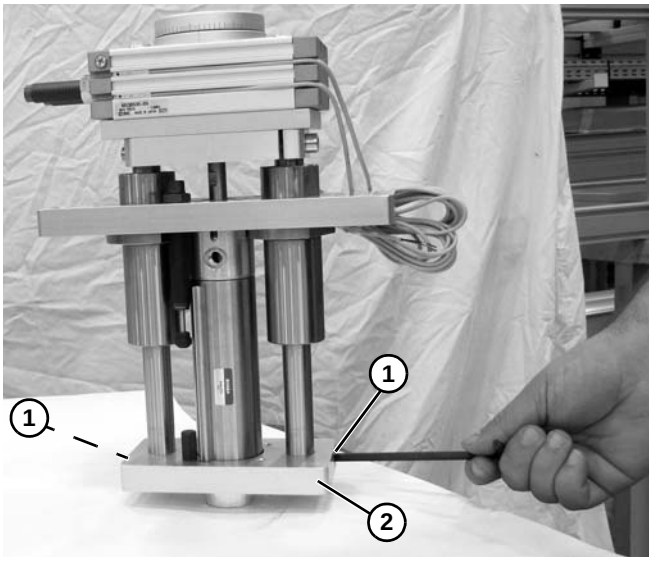


Figure 18

2. Raise or lower bottom plate **(Figure 19, item 1)**.

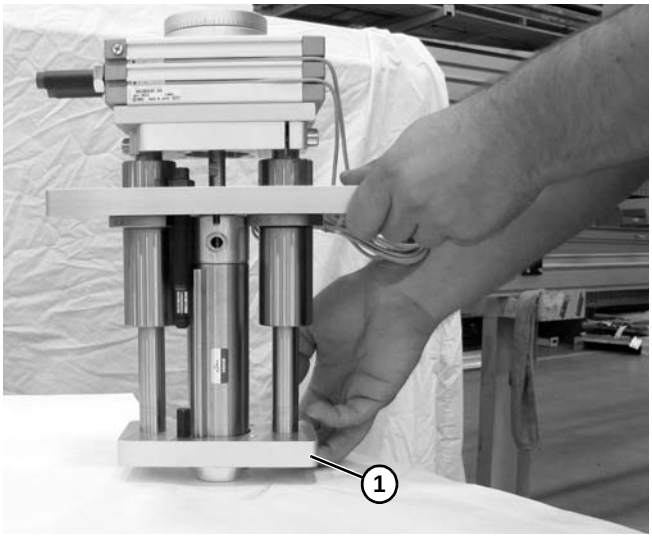


Figure 19

3. Tighten screws.

Optional Guard Kit

4. Install cam follower nuts **(Figure 20, item 1)** into mounting tube **(Figure 20, item 2)**. Repeat for opposite mounting tube.

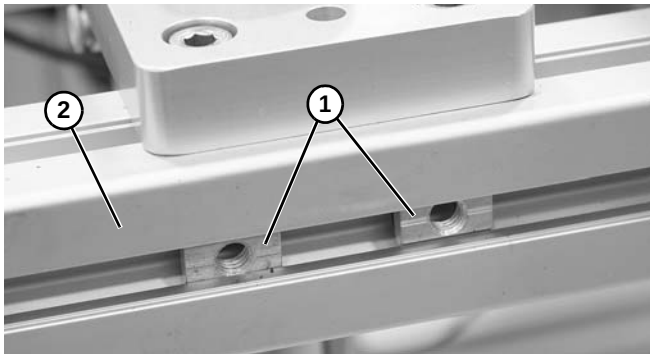


Figure 20

5. Install guard kit **(Figure 21, item 1)** with button head screws **(Figure 21, item 2)** on both sides.

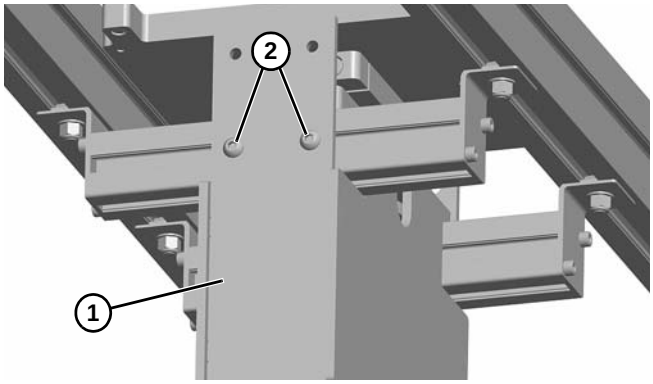


Figure 21

Pneumatic and Control Logic Suggestions

Recommended Pneumatics

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 22)** to operate the Lift and Locate Stop.

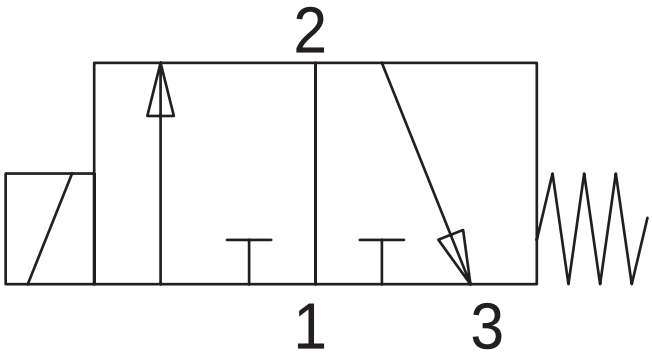


Figure 22

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 23)** to operate the Lift and Locate Pallet Unit.

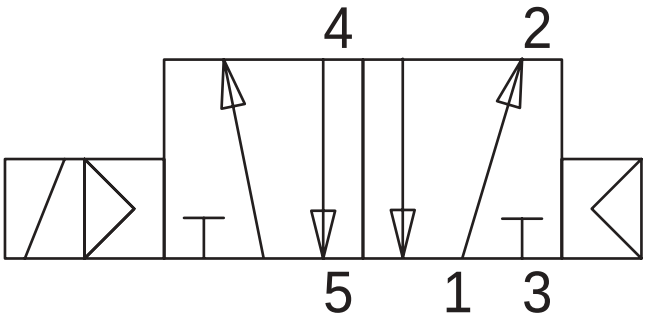


Figure 23

Attaching and Operations of Pneumatics

1. Connect the 3 port, 2 way solenoid valve to the stop. Dorner fittings **(Figure 24, item 1)** accept 1/4" outside diameter tubing standard **(Figure 24, item 2)**.

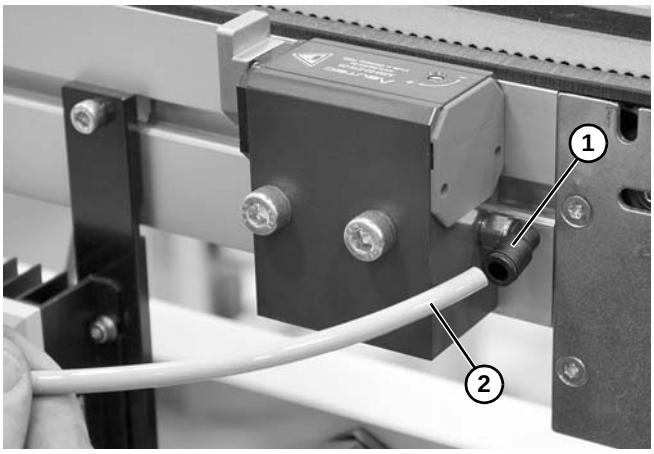


Figure 24

2. Stops release when air is supplied to the stop and only needs to be released long enough for the leading pallet skirt to clear the stop.
3. Connect Port 4 **(Figure 23)** of the 5 port, 2 way solenoid to the lowest port **(Figure 25, item 1)** on the lift. Dorner fittings accept 1/4" outside diameter tubing standard.

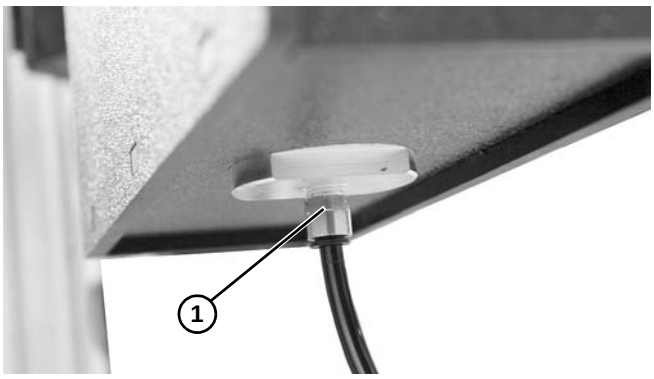


Figure 25

4. Connect Port 2 **(Figure 23)** of the 5 port, 2 way solenoid to the upper port **(Figure 26, item 1)** on the lift. Dorner fittings accept 1/4" outside diameter tubing standard.

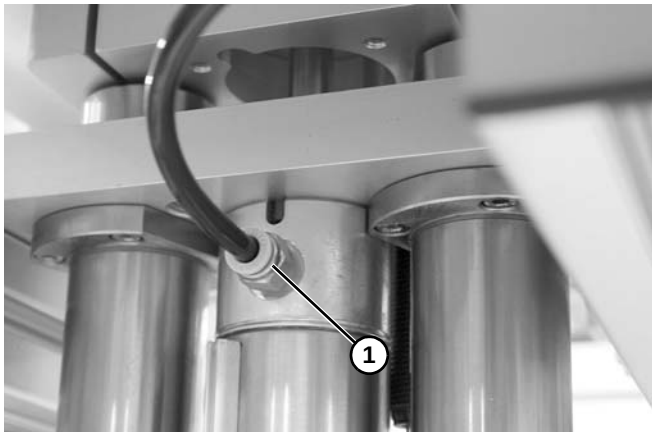


Figure 26

- The lift raises when air is supplied to the lowest port of the lift and the upper port is allowed to exhaust.
- The lift lowers when air is supplied to the upper port of the lift and the lower port is allowed to exhaust.

Sensor Installation and Basic Logic

Optional bottom mount **(Figure 27, item 1)** or side mount **(Figure 27, item 2)** sensor brackets can be used to mount a 12 mm barrel proximity sensor **(Figure 27, item 3)**. See“Optional Sensors” on page 8.

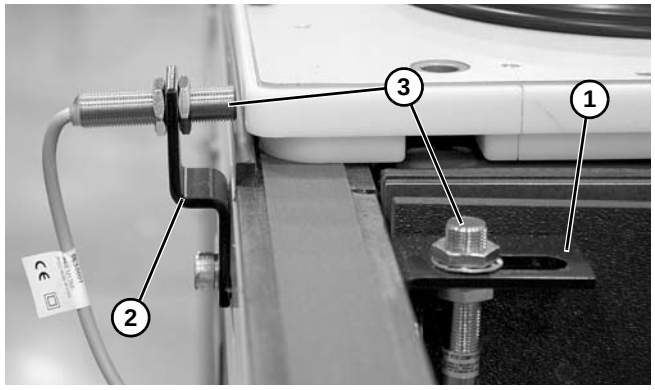


Figure 27

- One bottom **(Figure 28, item 1)** and two side flags **(Figure 28, item 2)** (when bumpers are not installed) can be used for sensing.

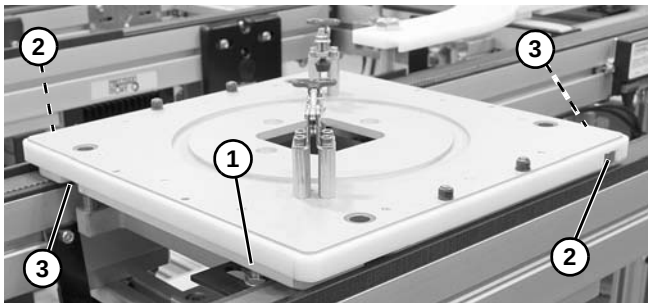


Figure 28

- Use proximity sensor to detect pallet located at the stop.
- The stop can reset after a short delay when the proximity sensor signal clears.
- Stop only has to be released long enough to clear pallet skirt that was stopped. Notches **(Figure 28, item 3)** in skirt allow stop to be reset before pallet clears stop area.

Lift and Transfer Station

1. Raise lift and transfer station **(Figure 29, item 1)** into postion from under the conveyor, lining up T-nuts with conveyor channel.

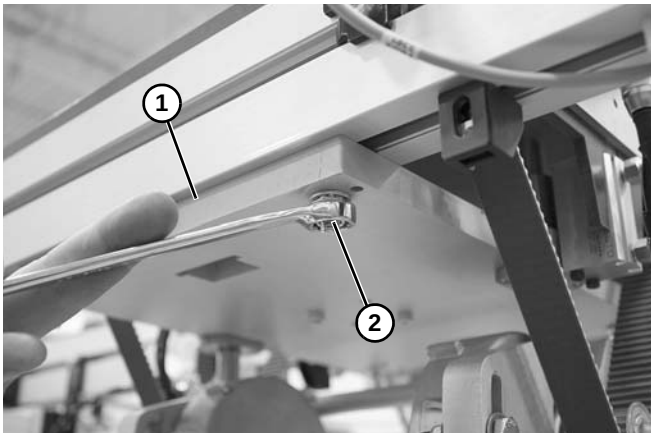


Figure 29

2. Tighten bolts **(Figure 29, item 2)** to secure lift and transfer station to conveyor.

Optional Guard Kit

1. Insert mounting block **(Figure 30, item 1)** into conveyor channel **(Figure 30, item 2)** on both sides of lift and transfer station. Repeat for opposite conveyor.

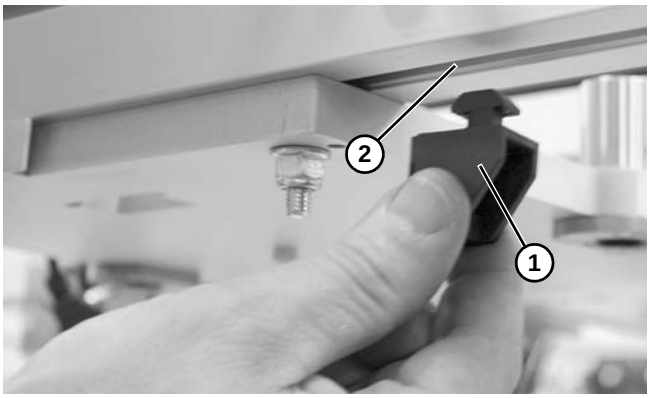


Figure 30

2. Rotate mounting blocks so that slot with nut **(Figure 31, item 1)** faces out.

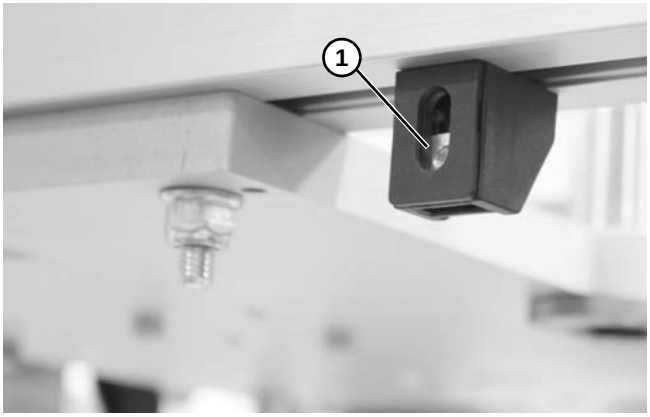


Figure 31

3. Install guard kit **(Figure 32, item 1)** with button head screws **(Figure 32, item 2)** on both sides. Tighten screws with hex wrench **(Figure 32, item 3)**.

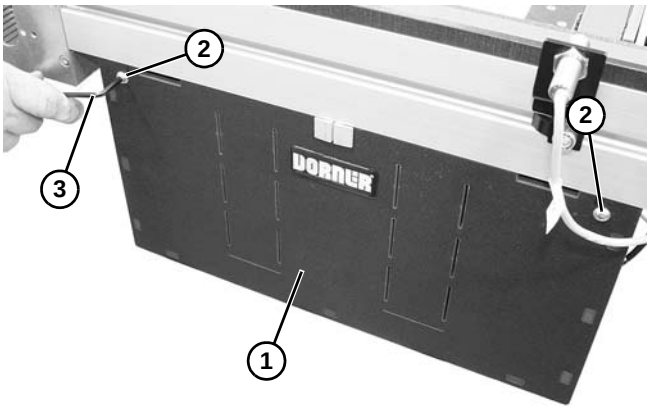


Figure 32

Lift and Transfer

Recommended Pneumatics

Sending Lift and Transfer with Non-Cushion Stop

Dorner recommends using a 5 port, 3 way, exhaust center solenoid valve **(Figure 33)** to operate unit.

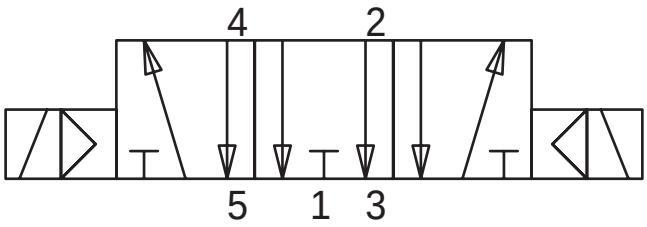


Figure 33

1. Connect port 4 **(Figure 33)** of the 5 port, 3 way valve to the lower port **(Figure 34, item 1)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

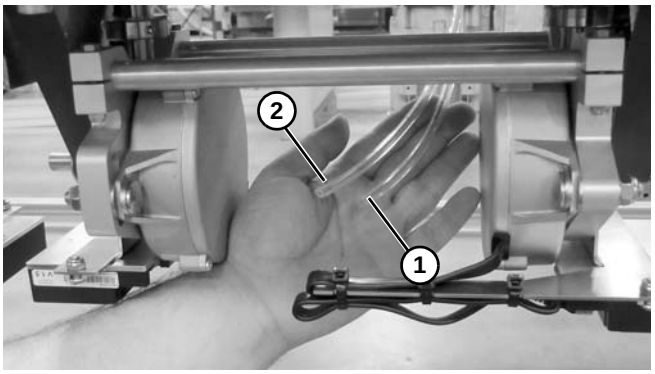


Figure 34

2. Connect port 2 **(Figure 33)** of the 5 port, 3 way valve to the top port **(Figure 34, item 2)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

Operating of pneumatics

1. Allowing both ports of the lift to exhaust will place the lift in the neutral position. Pallet entering the lift will be stopped by the stop plate.
2. Supplying air to the low port on the cylinder while allowing the top port to exhaust will raise the lift to the transfer level.
3. Supplying air to the top port on the cylinder while allowing the low port to exhaust will lower the lift so a pallet can bypass it.

Sending Lift and Transfer with Cushion Stop

Dorner recommends using a 5 port, 3 way, exhaust center solenoid valve **(Figure 35)** to operate unit.

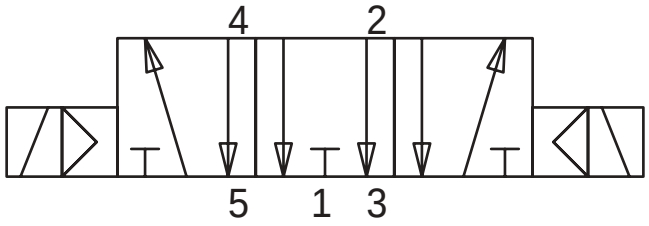


Figure 35

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 36)** to operate cushion reset.

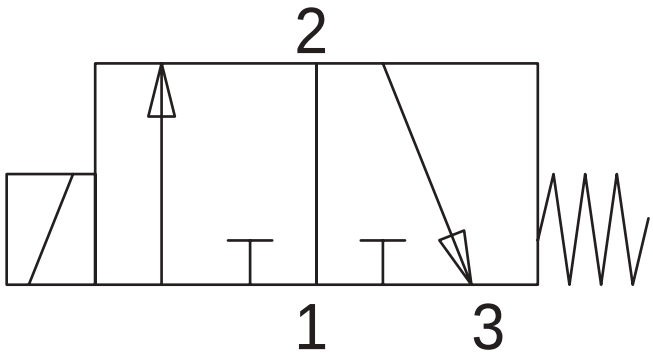


Figure 36

1. Connect port 4 **(Figure 35)** of the 5 port, 3 way valve to the lower port **(Figure 37, item 1)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

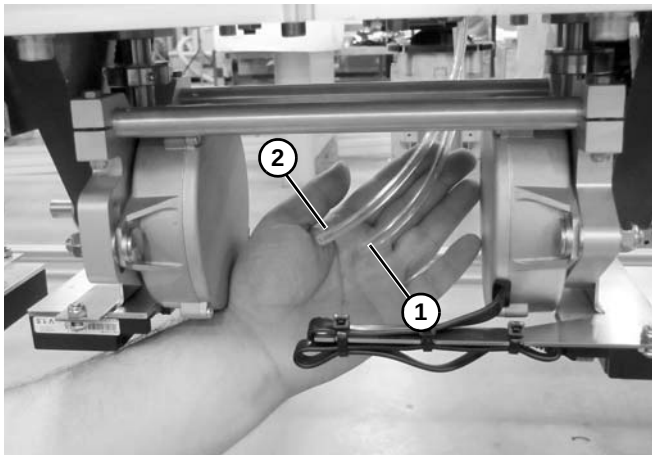


Figure 37

2. Connect port 2 **(Figure 35)** of the 5 port, 3 way valve to the top port **(Figure 37, item 2)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

3. Connect port 2 **(Figure 36)** of the 3 port, 2 way valve to the cushion reset port **(Figure 38, item 1)**.

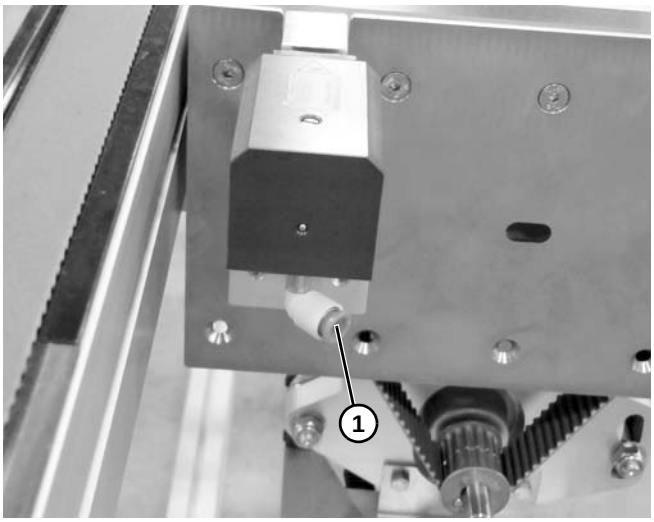


Figure 38

Operating of pneumatics

1. Allowing both ports of the lift to exhaust will place the lift in the neutral position. Pallet entering the lift will be stopped by the stop plate.
2. Supplying air to the low port on the cylinder while allowing the top port to exhaust will raise the lift to the transfer level.
3. Supplying air to the top port on the cylinder while allowing the low port to exhaust will lower the lift so a pallet can bypass it.
4. Supplying air to the cushion will extend the cushion arm. Allowing the port to exhaust will allow the cushion arm to depress when external forces are applied to it.

Receiving Lift and Transfer

Dorner recommends using a 5 port, 2 way, solenoid valve **(Figure 39)** to operate unit.

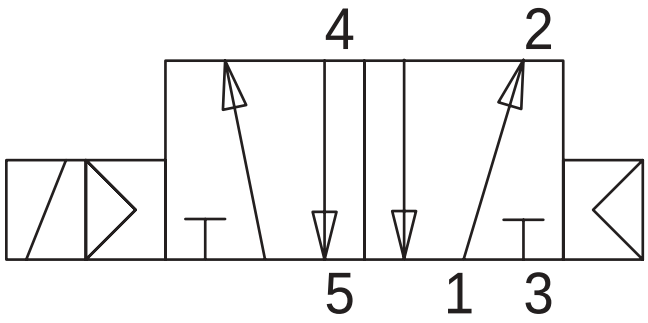


Figure 39

1. Connect port 4 **(Figure 39)** of the 5 port, 2 way valve to the lower port **(Figure 40, item 1)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

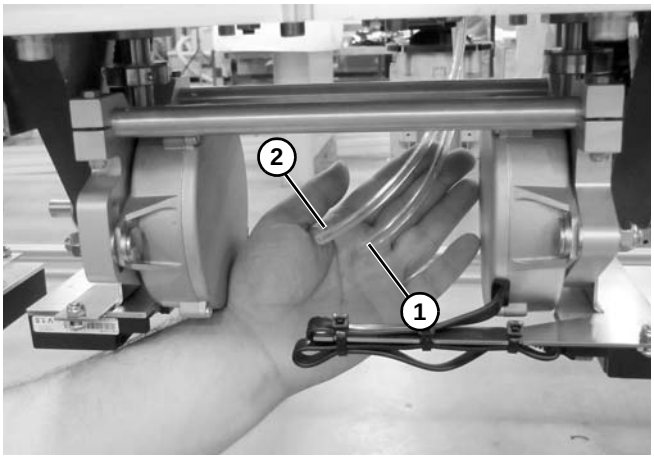


Figure 40

2. Connect port 2 **(Figure 39)** of the 5 port, 2 way valve to the top port **(Figure 40, item 2)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

Operating of pneumatics

1. Supplying air to the low port on the cylinder while allowing the top port to exhaust will raise the lift to the transfer level.
2. Supplying air to the top port on the cylinder while allowing the low port to exhaust will lower the lift.

Motor/Driver Wiring

Wire +24 DC **(Figure 41, item 1)** and DC ground **(Figure 41, item 2)** to the driver's power plug.

To run both motors with the belts traveling in the same direction wire an PNP input to Smart input 1 **(Figure 41, item 3)** on one drive and Smart input 2 **(Figure 41, item 4)** on the other drive.

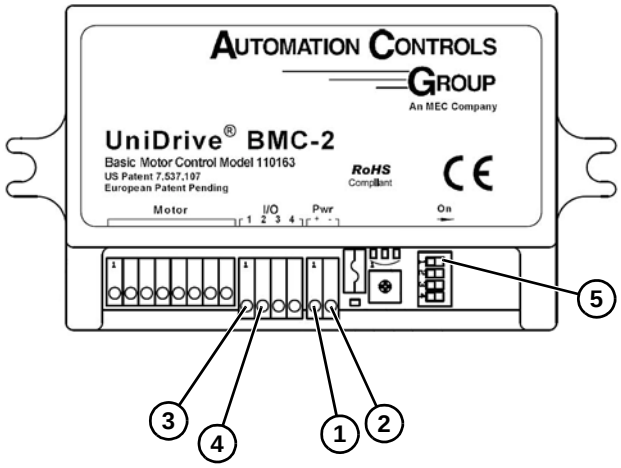


Figure 41

To reverse direction:

- Dynamically, wire a 2nd PNP input to the open smart inputs. Only one Smart input per drive can be active at a time.
- One time, switch state of dip switch 1 **(Figure 41, item 5)** on the driver board. Dip Switches are only read at start up. After a change is made, cycle power to the unit.

Speed control is fixed using dip switches 2-4 per the table below (speed in RPM.) Dip Switches are only read at start up. After a change is made, cycle power to the unit.

SW2	SW3	SW4	Speed (RPM of Motor)	Belt Speed
Off	Off	Off	350	126
Off	Off	On	315	114
Off	On	Off	280	101
Off	On	On	245	88
On	Off	Off	210	76
On	Off	On	175	63
On	On	Off	140	51
On	On	On	105	38

Please reference **UniDrive® Basic Motor Control – Generation II "BMC-2" Guide to Installation and Use** for any drive troubleshooting.

Sensor Installation and Basic Logic

The Lift and Transfer unit only allows for sensing at the sides of the pallet. Sensing can be done from under the pallet before unit, though a delay will need to be programed in before allowing the lift to operate. Dorners side mount sensor brackets **(Figure 42, item 1)** can be used to mount a 12 mm barrel proximity sensor **(Figure 42, item 2)**. See"Optional Sensors" on page 8.

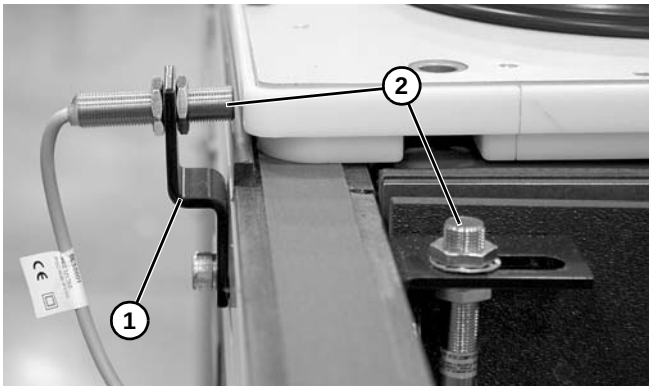


Figure 42

- The layout of the overall system will ultimately determine which side sensor flag **(Figure 43, item 1)** to use.

Figure 43

- Use proximity sensor to detect pallet located at the stop.
- It is recommend that the BLDC motors be signaled to run before the lift action occurs.
- Raise the lift and use a downstream bottom or side mount proximity sensor to signal that the pallet is off the lift.
- When passing over the transfer, the optional blade stop cannot raise up until the pallet has completely cleared.

Receiving Lift and Transfer Cushion Stop

Recommended Pneumatics

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 44)** to operate cushion reset.

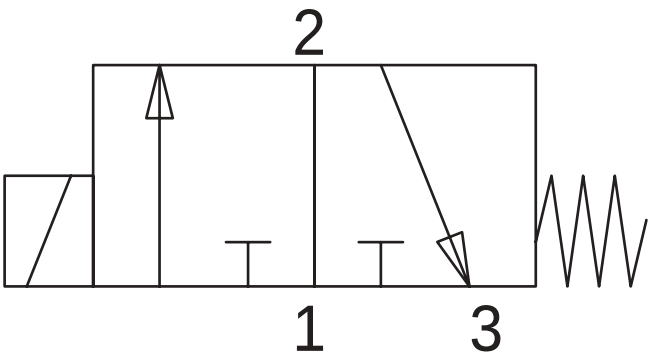


Figure 44

1. Connect port 2 **(Figure 44)** of the 3 port, 2 way valve to the cushion reset port **(Figure 45, item 1)**.

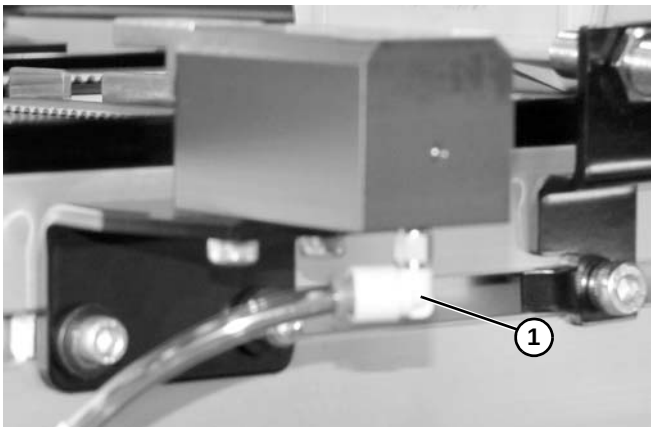


Figure 45

Operating of pneumatics

1. Supplying air to the cushion will extend the cushion arm. Allowing the port to exhaust will allow the cushion arm to depress when external forces are applied to it.

Receiving Lift and Transfer Cushion Flow-through Stop

Recommended Pneumatics

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 46)** to operate stop height.

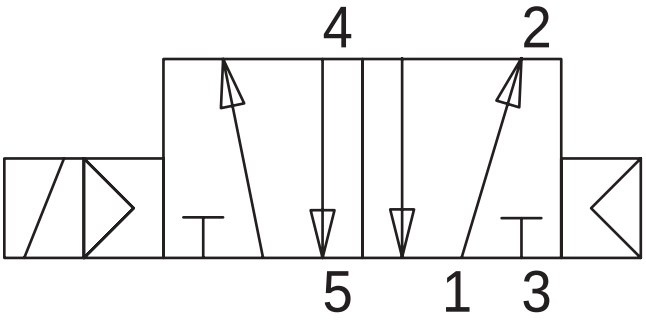


Figure 46

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 47)** to operate cushion reset.

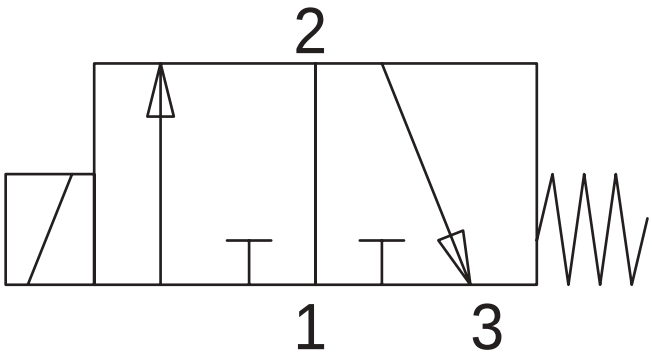


Figure 47

1. Connect port 4 **(Figure 46)** of the 5 port, 2 way valve to the lower port **(Figure 48, item 1)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard

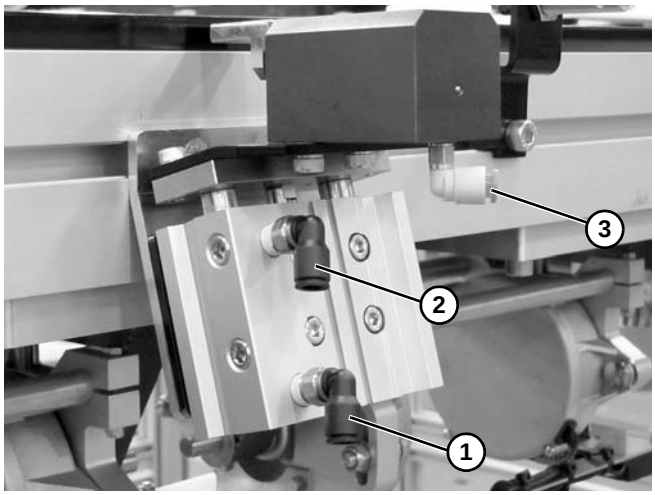


Figure 48

2. Connect port 2 **(Figure 46)** of the 5 port, 2 way valve to the top port **(Figure 48, item 2)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.
3. Connect port 2 **(Figure 47)** of the 3 port, 2 way valve to the cushion reset port **(Figure 48, item 3)**.

Operating of pneumatics

1. Supplying air to the low port on the lift cylinder while allowing the top port to exhaust will raise the stop to the transfer level.
2. Supplying air to the top port on the cylinder while allowing the low port to exhaust will lower the stop below the conveyor frame allowing a pallet with a bumper to flow through the lift and transfer zone.

⚠ CAUTION

Be sure the cushion is fully depressed before allowing lift to lower the stop.

3. Supplying air to the cushion will extend the cushion arm. Allowing the port to exhaust will allow the cushion arm to depress when external forces are applied to it.

Receiving Lift and Transfer Non-Cushion Flow-through Stop

Recommended Pneumatics

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 49)** to operate stop height.

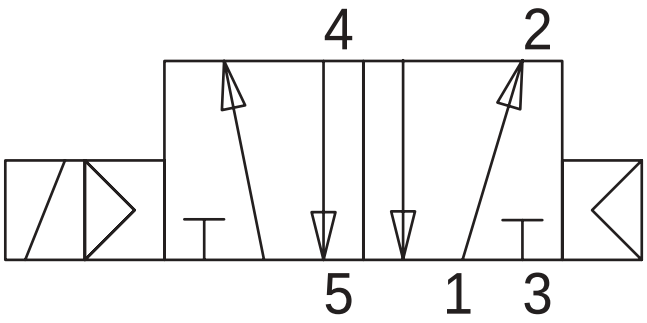


Figure 49

1. Connect port 4 **(Figure 49)** of the 5 port, 2 way valve to the lower port **(Figure 50, item 1)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

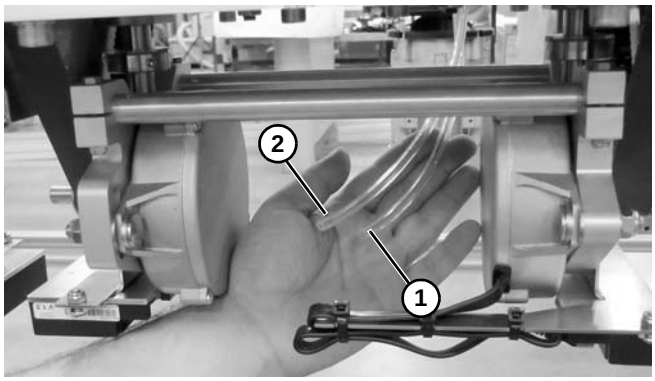


Figure 50

2. Connect port 2 **(Figure 49)** of the 5 port, 2 way valve to the top port **(Figure 50, item 2)** on the lift. Dorner fittings accept ¼" outside diameter tubing standard.

Operating of pneumatics

1. Supplying air to the low port on the lift cylinder while allowing the top port to exhaust will raise the stop to the transfer level.
2. Supplying air to the top port on the cylinder while allowing the low port to exhaust will lower the stop below the conveyor frame allowing a pallet with a bumper to flow through the lift and transfer zone.

Lift and Rotate Station

1. Remove lift and rotate plate **(Figure 51, item 1)**.

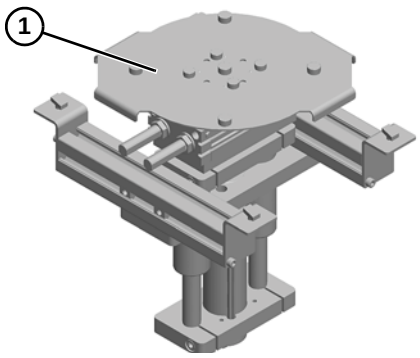


Figure 51

2. Raise lift and rotate station **(Figure 52, item 1)** into postion from under the conveyor, lining up bolts **(Figure 52, item 2)** with follower nuts in conveyor channel.

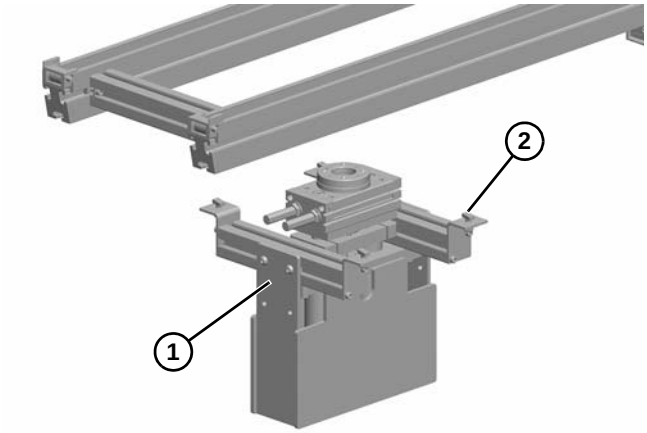


Figure 52

3. Tighten bolts **(Figure 53, item 1)** to follower nuts **(Figure 53, item 2)** inside channel.

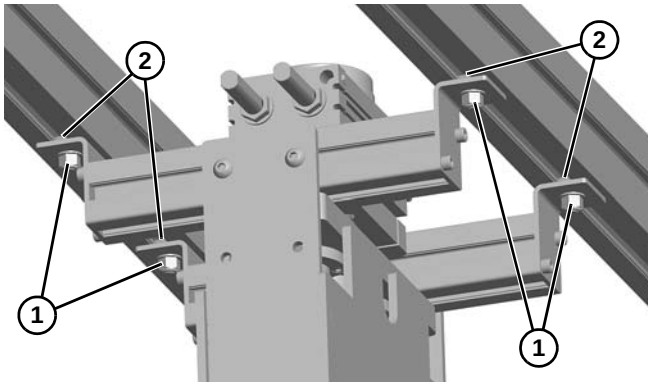


Figure 53

4. Place lift and rotate plate **(Figure 54, item 1)** back onto lift assembly.

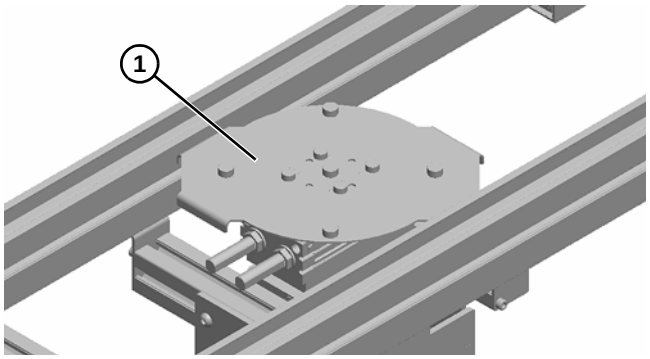


Figure 54

5. Place pallet **(Figure 55, item 1)** on lift and rotate plate **(Figure 55, item 2)**. Raise top plate to underside of pallet.

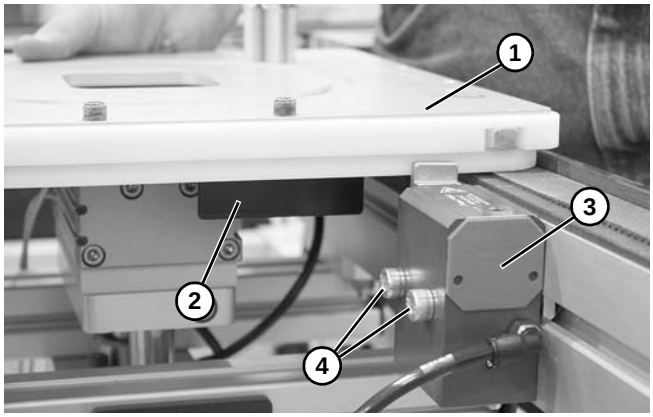


Figure 55

6. Install pallet stop **(Figure 55, item 3)**. See“Pallet Stops” on page 6.
7. Position stop against pallet and tighten socket head screws **(Figure 55, item 4)**.
8. Install optional sensors **(Figure 56, item 1)** to detect counter-clockwise and clockwise movement. Tighten set screws.

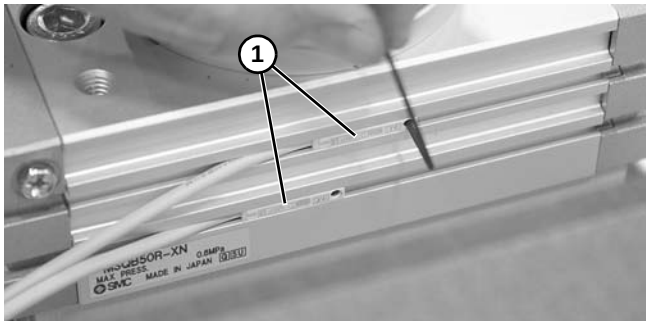


Figure 56

Stroke Sensing Adjustment

1. To adjust cylinder stroke sensors, loosen set screw **(Figure 57, item 1)** and move sensor **(Figure 57, item 2)** up or down in channel **(Figure 57, item 3)**. Tighten set screw.

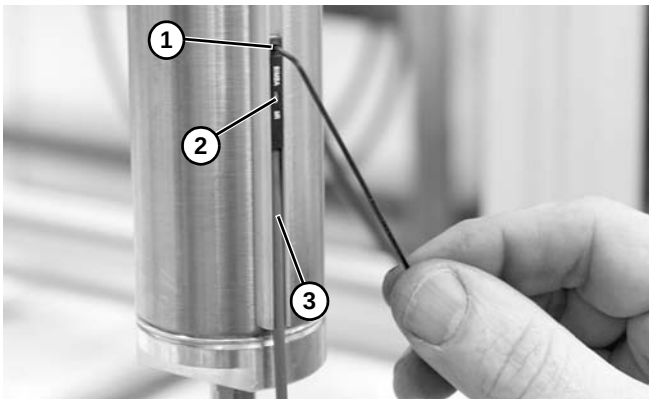


Figure 57

Rotation Adjustment

1. Loosen nuts **(Figure 58, item 1)** with an open-end wrench.

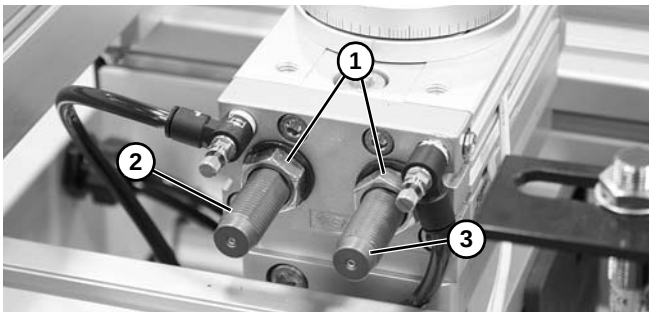


Figure 58

2. Adjust counter-clockwise stroke by rotating screw **(Figure 58, item 2)** left or right with an open-end wrench. Adjust clockwise movement by rotating screw **(Figure 58, item 3)** left or right with an open-end wrench. Tighten nuts.

Stroke Adjustment

1. Loosen lock nut **(Figure 59, item 1)** on shock absorber **(Figure 59, item 2)** next to cylinder.

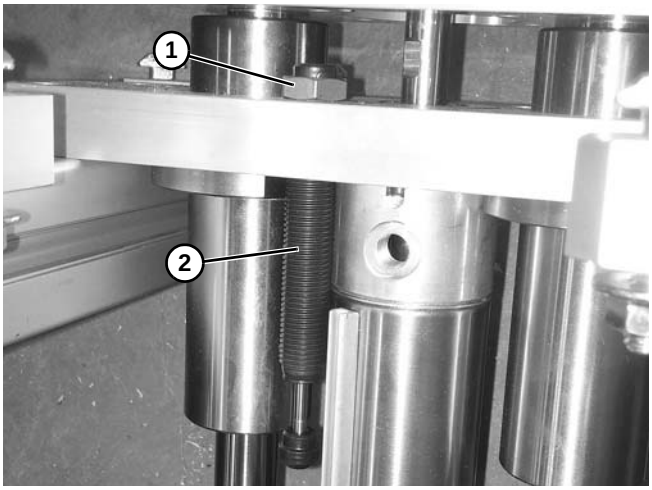


Figure 59

2. Adjust shock up or down by rotating to adjust stroke. Tighten lock nut.

Optional Guard Kit

3. Install cam follower nuts **(Figure 60, item 1)** into mounting tube **(Figure 60, item 2)**. Repeat for opposite mounting tube.

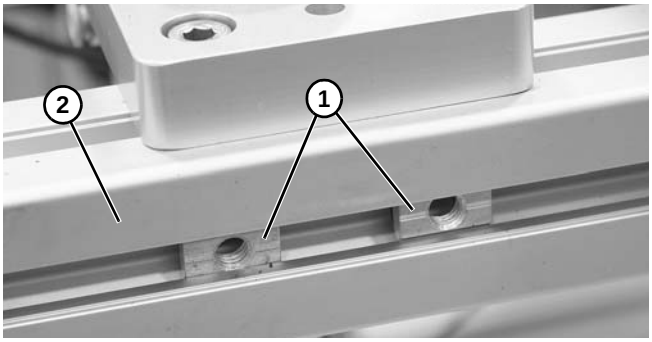


Figure 60

4. Install guard kit **(Figure 61, item 1)** with button head screws **(Figure 61, item 2)** on both sides.

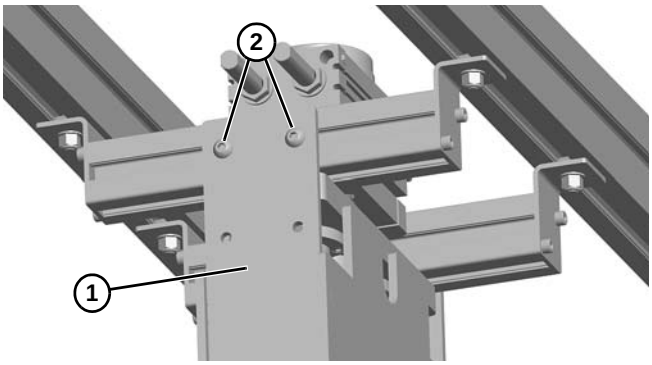


Figure 61

Pneumatic and Control Logic Suggestions

Recommended Pneumatics

Dorner recommends using a 3 port, 2 way solenoid valve **(Figure 62)** to operate the Lift and Rotate Stop.

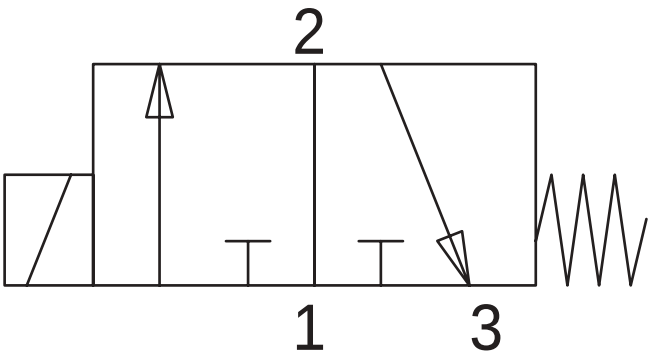


Figure 62

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 63)** to operate the Lift and Rotate Pallet Unit.

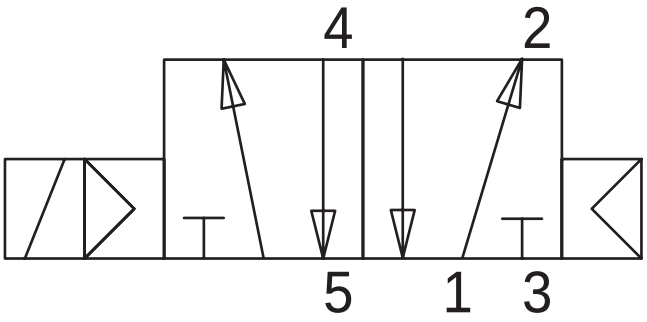


Figure 63

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 64)** to operate the Rotating Actuator.

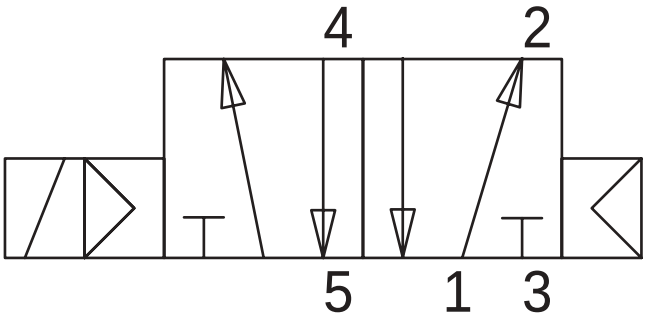


Figure 64

Attaching and Operations of Pneumatics

Stop:

1. Connect the 3 port, 2 way solenoid valve to the stop. Dorner fittings **(Figure 65, item 1)** accept 1/4" outside diameter tubing standard **(Figure 65, item 2)**.

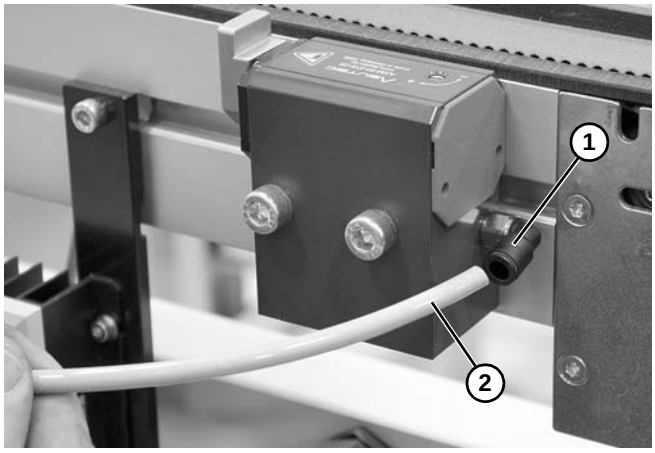


Figure 65

2. Stops release when air is supplied to the stop and only needs to be released long enough for the leading pallet skirt to clear the stop.

Lift:

1. Connect Port 4 **(Figure 63)** of the 5 port, 2 way solenoid to the lowest port **(Figure 66, item 1)** on the lift. Dorner fittings accept 1/4" outside diameter tubing standard.

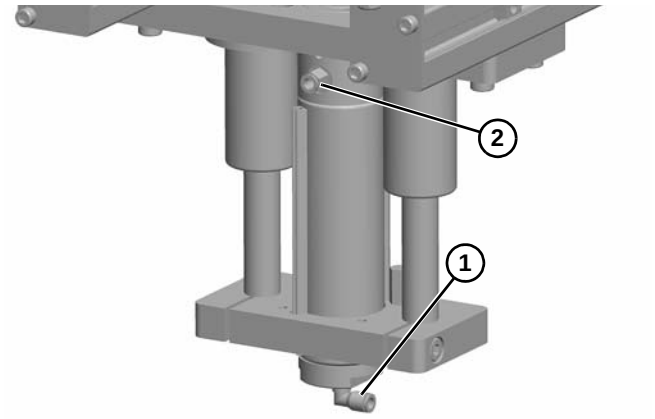


Figure 66

2. Connect Port 2 **(Figure 63)** of the 5 port, 2 way solenoid to the upper port **(Figure 66, item 2)** on the lift. Dorner fittings accept 1/4" outside diameter tubing standard.

- The lift raises when air is supplied to the lowest port of the lift and the upper port is allowed to exhaust.
- The lift lowers when air is supplied to the upper port of the lift and the lower port is allowed to exhaust.

Rotate:

1. Connect Port 4 **(Figure 64)** of the 5 port, 2 way solenoid to the left port **(Figure 67, item 1)** of the rotator. Dorner fittings accept 1/4" outside diameter tubing standard.

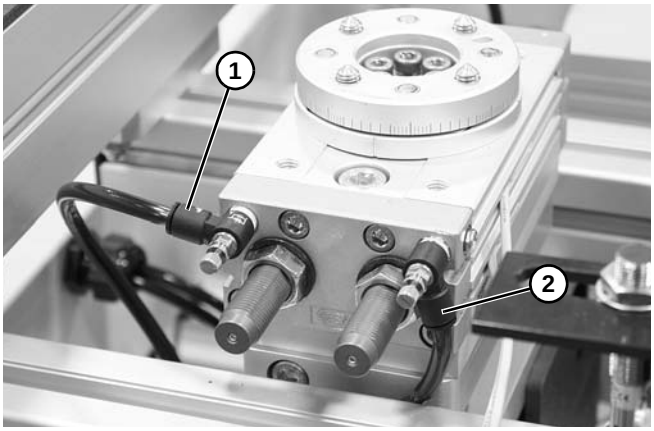


Figure 67

2. Connect Port 2 **(Figure 64)** of the 5 port, 2 way solenoid to the right port **(Figure 67, item 2)** of the rotator. Dorner fittings accept 1/4" outside diameter tubing standard.

- Rotate unit rotates clockwise when air is supplied to the left port and the right port is allowed to exhaust.
- Rotate unit rotates counterclockwise when air is supplied to the right port and the left port is allowed to exhaust.

Sensor Installation and Basic Logic

Optional bottom mount **(Figure 68, item 1)** or side mount **(Figure 68, item 2)** sensor brackets can be used to mount a 12 mm barrel proximity sensor **(Figure 68, item 3)**. See“Optional Sensors” on page 8.

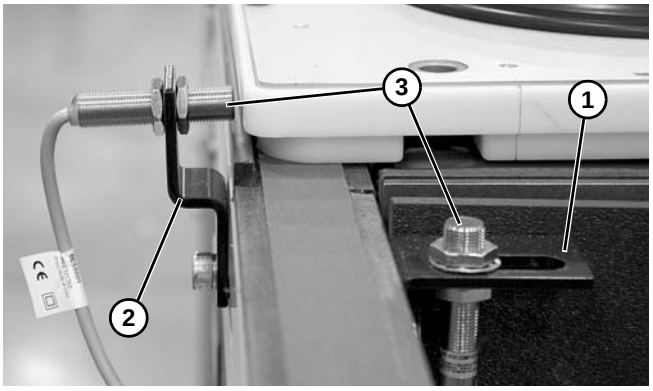


Figure 68

- One bottom **(Figure 69, item 1)** and two side flags **(Figure 69, item 2)** (when bumpers are not installed) can be used for sensing.

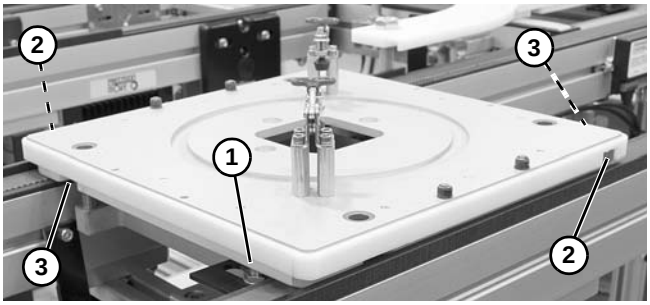


Figure 69

- Use proximity sensor to detect pallet located at the stop.
- The stop can reset after a short delay when the proximity sensor signal clears.
- Stop only has to be released long enough to clear pallet skirt that was stopped. Notches **(Figure 69, item 3)** in skirt allow stop to be reset before pallet clears stop area.

90° Corner

For 160 mm width, no corner belt required. Skip to guiding.

1. Install cam follower nut **(Figure 70, item 1)** in conveyor rail channel. Repeat for opposite conveyor rail.

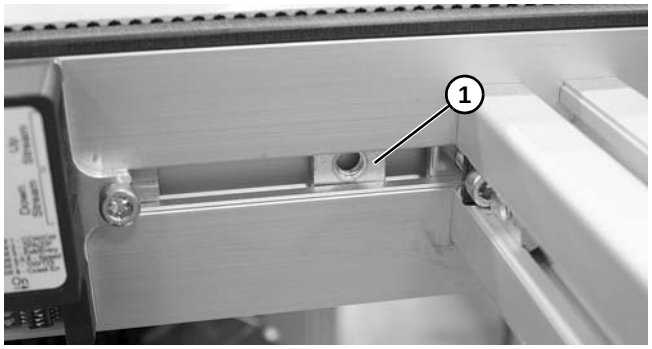


Figure 70

2. Install drive motor unit **(Figure 71, item 1)** to conveyor section with socket head screws **(Figure 71, item 2)**. Do not tighten screws.

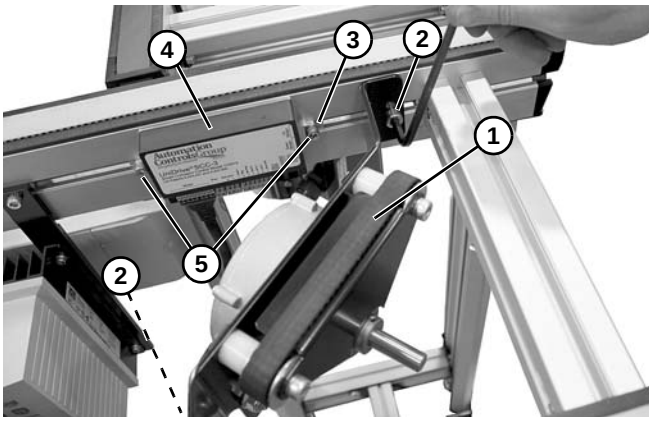


Figure 71

3. Install drop-in tee bar **(Figure 71, item 3)** in conveyor rail channel. Install drive control **(Figure 71, item 4)** with socket head screws **(Figure 71, item 5)**.
4. Install motor connector **(Figure 72, item 1)** to drive control.

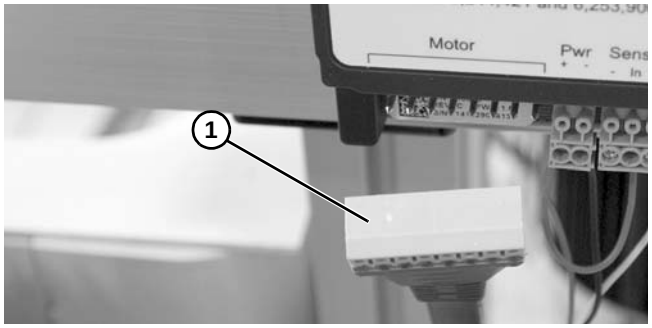


Figure 72

5. Place pallet **(Figure 73, item 1)** on corner assembly. Position corner assembly so that belt **(Figure 73, item 2)** and pallet skirt **(Figure 73, item 3)** line up as shown.

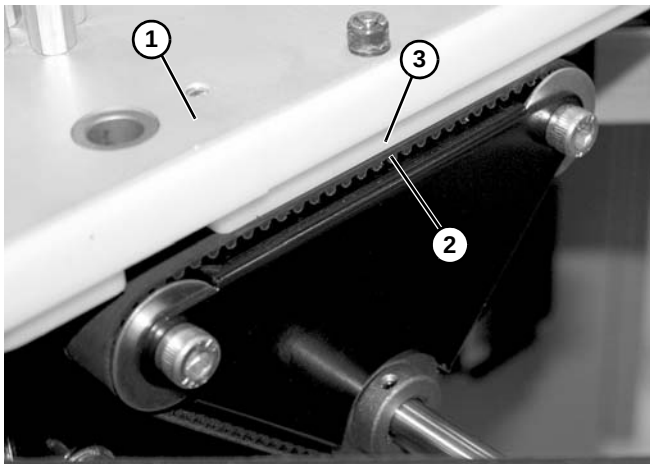


Figure 73

6. Remove pallet and tighten all mounting screws.

Guiding

1. Install stud **(Figure 74, item 1)** to support tube **(Figure 74, item 2)** using two jam nuts **(Figure 74, item 3)**.

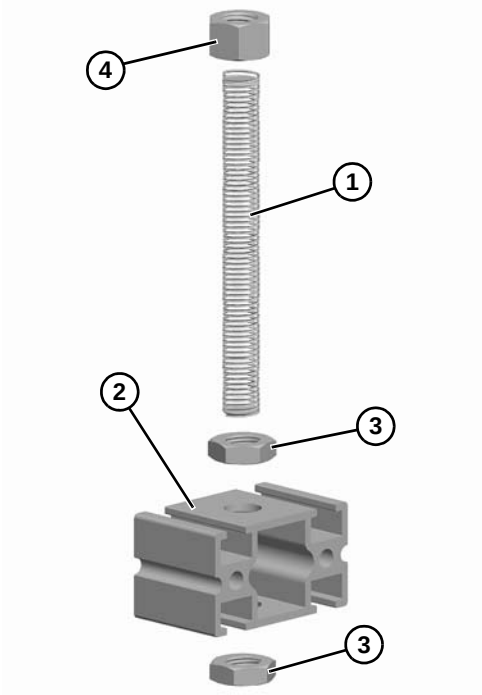


Figure 74

2. Tighten jam nuts **(Figure 74, item 3)** leaving some thread protruding from bottom nut. Thread hex nut **(Figure 74, item 4)** onto stud.
3. Repeat for two remaining support tubes.

4. Install drop-in tee bars **(Figure 75, item 1)** in conveyor rail channel.

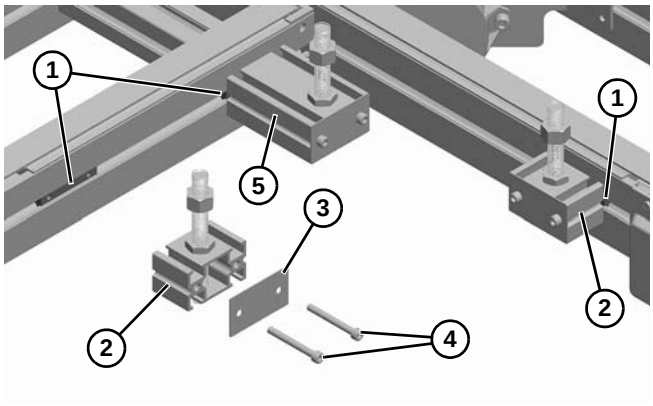


Figure 75

5. Loosely fasten 1.5" support tube assemblies **(Figure 75, item 2)** to conveyor rail with cover **(Figure 75, item 3)** and socket head screws **(Figure 75, item 4)** as shown.
6. Repeat for 4.5" support tube assembly **(Figure 75, item 5)**.
7. Install corner guide **(Figure 76, item 1)** onto studs. Position support assemblies so that the hex nuts **(Figure 76, item 2)** are in the circular openings in the bottom of the guide.

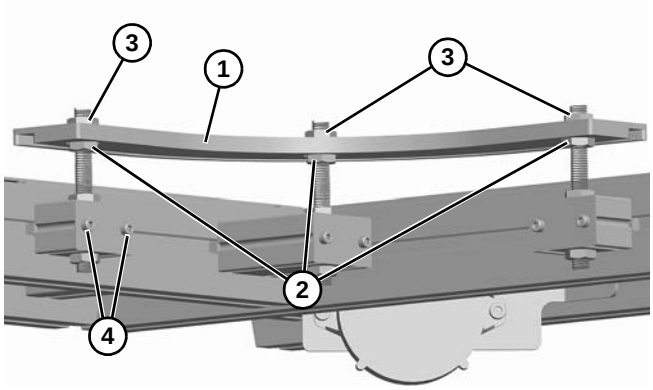


Figure 76

8. Thread jam nuts **(Figure 76, item 3)** onto studs, but do not tighten.
9. Finger tighten screws **(Figure 76, item 4)** on support assemblies.

Adjust Guiding

1. Slide pallet **(Figure 77, item 1)** through entire length of corner guide **(Figure 77, item 2)** to make sure the pallet does not bind.

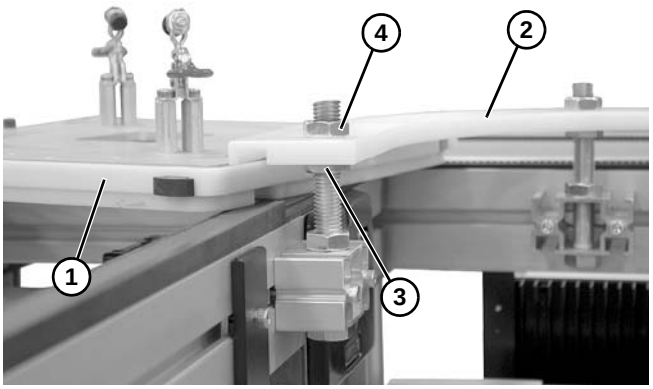


Figure 77

2. If the pallet binds, adjust hex nuts **(Figure 77, item 3)** up or down to raise or lower corner guide. If needed, loosen the screws **(Figure 76, item 4)** on the support assemblies, and move them left or right.
3. Tighten screws **(Figure 76, item 4)** on support assemblies and upper jam nuts **(Figure 77, item 4)**.

Motor/Driver Wiring

Wire +24 DC **(Figure 78, item 1)** and DC ground **(Figure 78, item 2)** to the driver's power plug.

Supply an PNP input to Smart input 1 **(Figure 78, item 3)** to run motor.

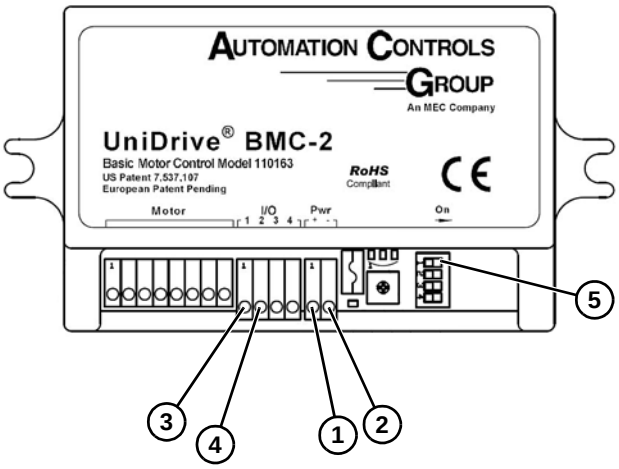


Figure 78

To reverse direction:

- Dynamically, wire a 2nd PNP input to Smart input 2 **(Figure 78, item 4)**. Only one Smart input can be active at a time.
- One time, switch state of dip switch 1 **(Figure 78, item 5)** on the driver board. Dip Switches are only read at start up. After a change is made, cycle power to the unit.

Speed control is fixed using dip switches 2-4 per the table below (speed in RPM.) Dip Switches are only read at start up. After a change is made, cycle power to the unit.

SW2	SW3	SW4	Speed (RPM of Motor)	Belt Speed
Off	Off	Off	350	126
Off	Off	On	315	114
Off	On	Off	280	101
Off	On	On	245	88
On	Off	Off	210	76
On	Off	On	175	63
On	On	Off	140	51
On	On	On	105	38

Please reference **UniDrive® Basic Motor Control – Generation II "BMC-2" Guide to Installation and Use** for any drive troubleshooting.

90° Corner and Merge

For 160 mm width, no corner belt required. Skip to guiding.

Procedure shown is for 320, 400, and 480 widths. Procedure for 160 and 240 widths is similar.

1. Install drop-in tee bar **(Figure 79, item 1)** in conveyor rail channel. Repeat for opposite conveyor rail.

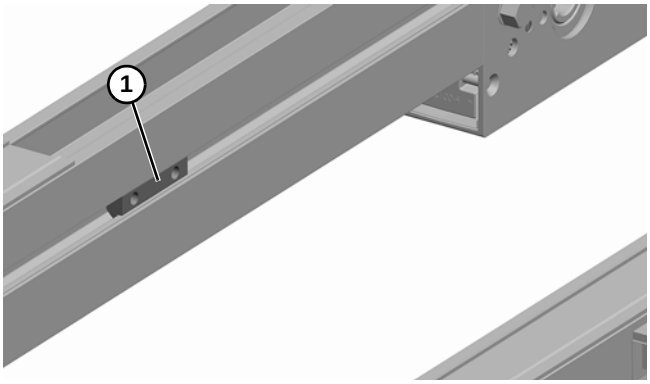


Figure 79

2. Assemble rail extension **(Figure 80, item 1)** to drive assembly with socket head screws **(Figure 80, item 2)**. Repeat on opposite side. Tighten screws.

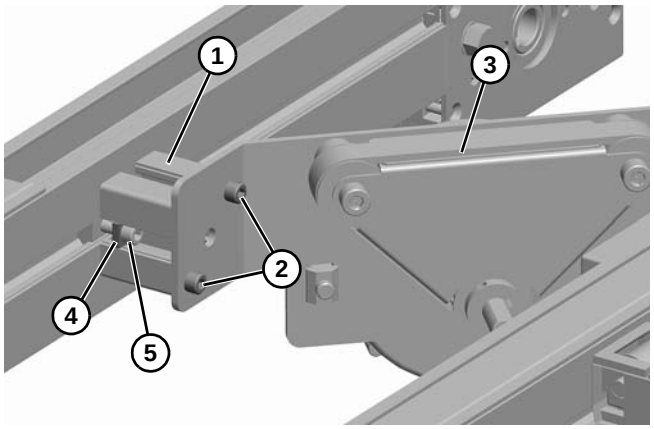


Figure 80

3. Install drive assembly **(Figure 80, item 3)** to conveyor with key bar **(Figure 80, item 4)** and socket head screws **(Figure 80, item 5)**. Repeat on opposite conveyor. Do not tighten screws.

4. Install drop-in tee bar **(Figure 81, item 1)** in conveyor rail channel. Install drive control **(Figure 81, item 2)** with socket head screws **(Figure 81, item 3)**. Do not tighten screws.

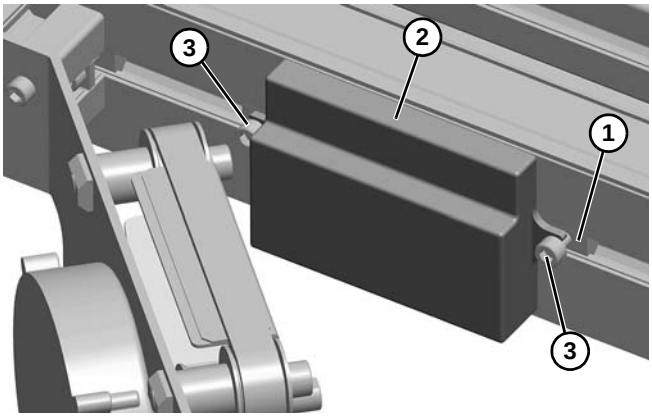


Figure 81

5. Install motor connector **(Figure 82, item 1)** to drive control.

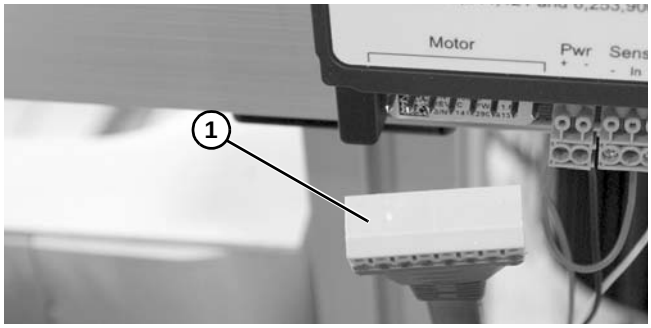


Figure 82

6. Install stops. See “Pallet Stops” on page 6
7. Place pallet **(Figure 83, item 1)** on corner assembly. Position corner assembly so that belt **(Figure 83, item 2)** and pallet skirt **(Figure 83, item 3)** line up as shown.

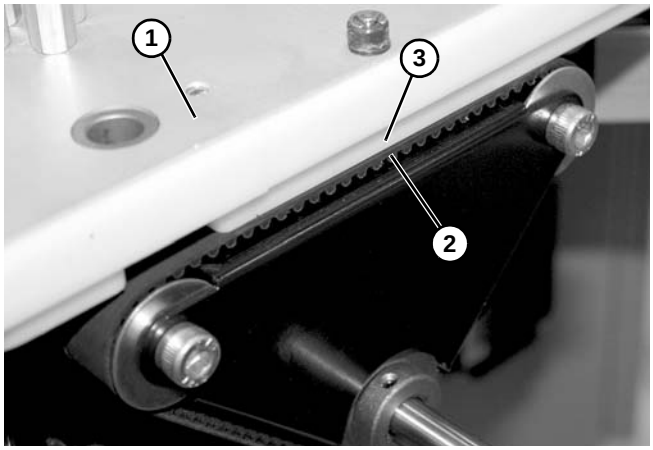


Figure 83

8. Remove pallet and tighten all mounting screws.

Guiding

On each of six cylinders:

1. Install mounting plate **(Figure 84, item 1)** to cylinder **(Figure 84, item 2)** with flat head cap screws **(Figure 84, item 3)**.

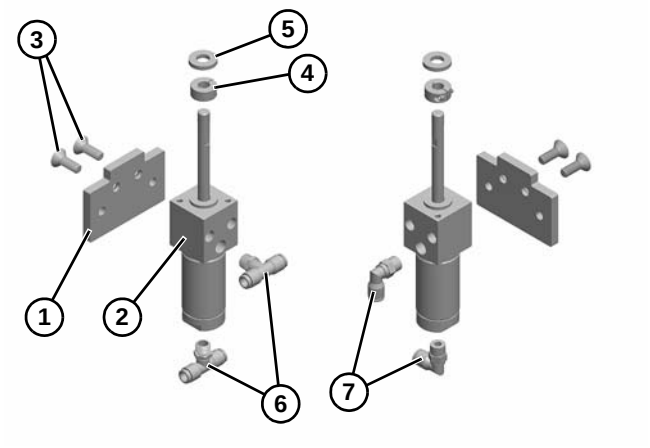


Figure 84

2. Install clamp collar **(Figure 84, item 4)** and washer **(Figure 84, item 5)** onto shaft.
3. On five cylinders, install two male tee branches **(Figure 84, item 6)** each. On one cylinder, install two male elbows **(Figure 84, item 7)** each.

Corner Guide

1. Install drop-in tee bars **(Figure 85, item 1)** in conveyor rail channel.

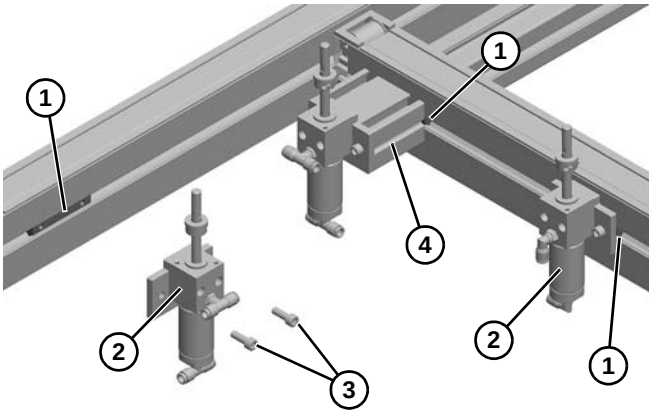


Figure 85

2. Loosely fasten two cylinder assemblies **(Figure 85, item 2)** to conveyor rail with socket head screws **(Figure 85, item 3)** as shown (notice fittings).
3. Repeat for cylinder assembly with spacer **(Figure 85, item 4)**.

4. Insert grommets **(Figure 86, item 1)** into holes of corner guide. Install corner guide **(Figure 86, item 2)**. Position cylinder assemblies so that the washers and clamp collars **(Figure 86, item 3)** are in the circular openings in the bottom of the guide.

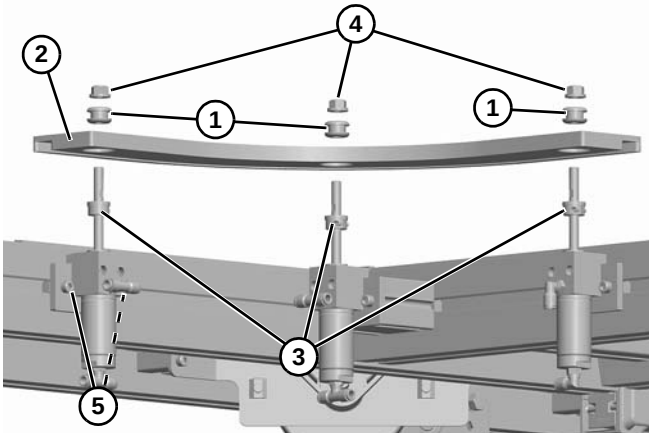


Figure 86

5. Thread flange lock nuts **(Figure 86, item 4)** onto cylinder shafts, but do not tighten.
6. Finger tighten screws **(Figure 86, item 5)** on cylinder assemblies.

Straight Guide

1. Install drop-in tee bars **(Figure 87, item 1)** in conveyor rail channel.

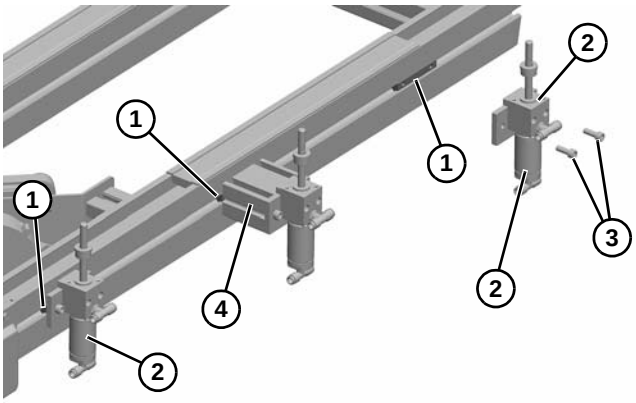


Figure 87

2. Loosely fasten cylinder assemblies **(Figure 87, item 2)** to conveyor rail with socket head screws **(Figure 87, item 3)** as shown.
3. Repeat for cylinder assembly with spacer **(Figure 87, item 4)**.

4. Insert grommets **(Figure 88, item 1)** into holes of straight guide. Install straight guide **(Figure 88, item 2)**. Position cylinder assemblies so that the washers and clamp collars **(Figure 88, item 3)** are in the circular openings in the bottom of the guide.

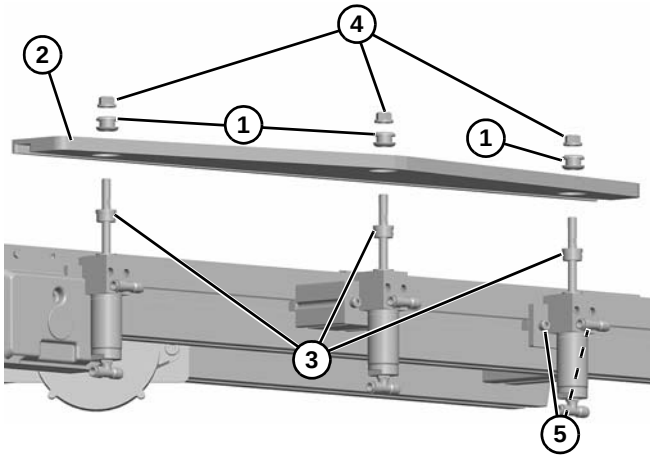


Figure 88

5. Thread flange lock nuts **(Figure 88, item 4)** onto cylinder shafts, but do not tighten.
6. Finger tighten screws **(Figure 88, item 5)** on cylinder assemblies.

Adjust Guiding

Procedure shown is for Corner Guide, Straight Guide is similar.

1. Slide pallet through entire length of corner guide to make sure the pallet does not bind.
2. If the pallet binds, loosen clamp collars **(Figure 89, item 1)** and adjust up or down to raise or lower corner guide **(Figure 89, item 2)**. If needed, loosen the screws **(Figure 88, item 5)** on the cylinder assemblies, and move them left or right.

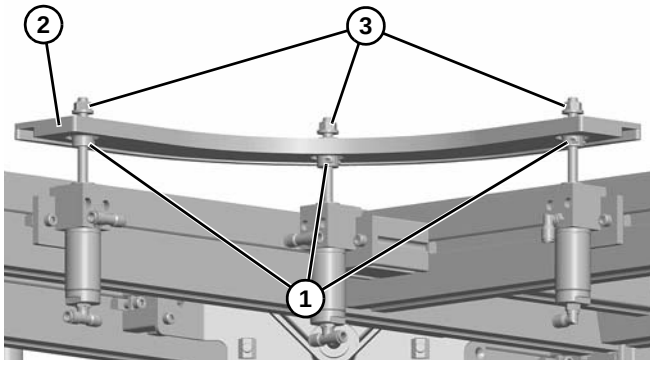


Figure 89

3. Tighten screws **(Figure 88, item 5)** on cylinder assemblies. Tighten clamp collars and lock nuts **(Figure 89, item 3)**.

Pneumatic and Control Logic Suggestions

Recommended Pneumatics

Dorner recommends using a 5 port, 2 way solenoid valve **(Figure 90)** to operate the pair of pin tracking guides.

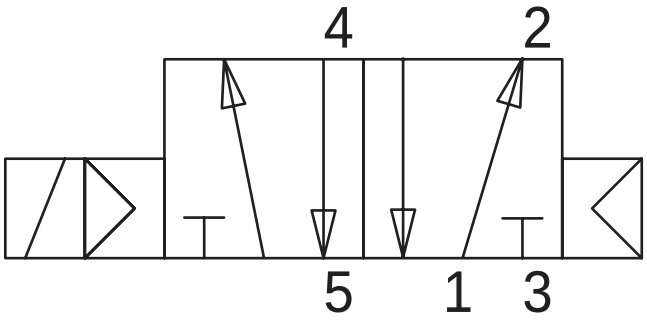


Figure 90

Attaching and Operations of Pneumatics

1. Plum in series the top ports **(Figure 91, item 1)** of the straight section cylinders with the bottom ports **(Figure 92, item 1)** of the corner section cylinders. Connect Port 4 **(Figure 90)** of the 5 port, 2 way solenoid to this section. Dorner fittings accept 1/4" outside diameter tubing standard.
2. Plum in series the bottom ports **(Figure 91, item 2)** of the straight section cylinders with the top ports **(Figure 92, item 2)** of the corner section cylinders. Connect Port 2 **(Figure 90)** of the 5 port, 2 way solenoid to this section. Dorner fittings accept 1/4" outside diameter tubing standard.

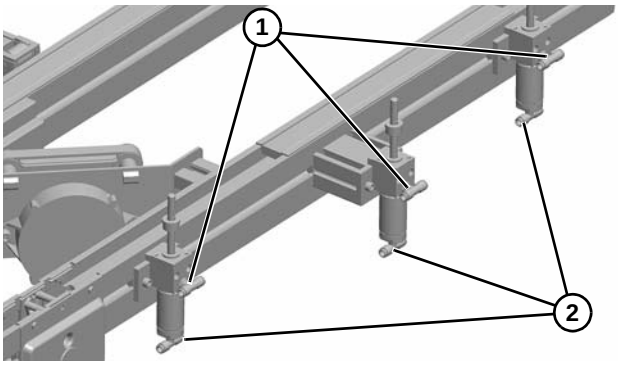


Figure 91

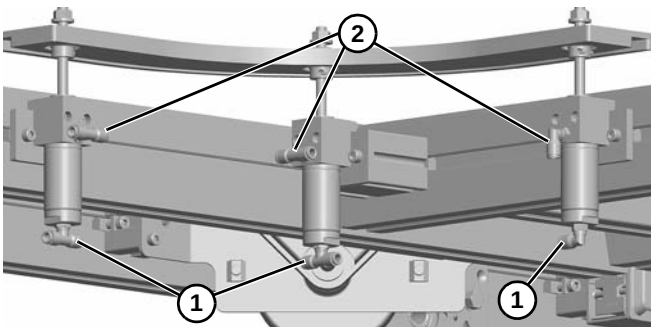


Figure 92

Motor/Driver Wiring

Wire +24 DC **(Figure 93, item 1)** and DC ground **(Figure 93, item 2)** to the driver's power plug.

Supply an PNP input to Smart input 1 **(Figure 93, item 3)** to run motor.

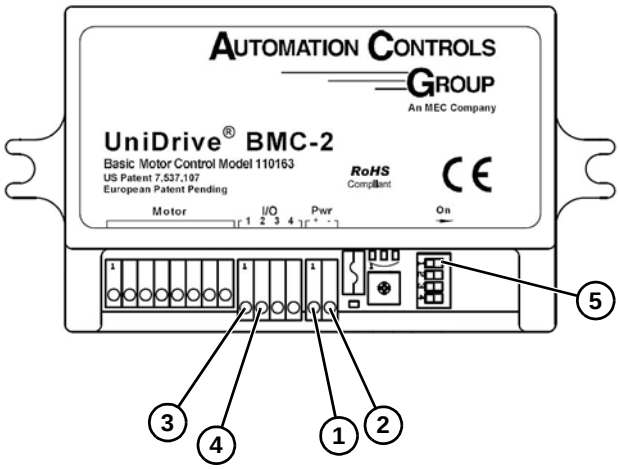


Figure 93

To reverse direction:

- Dynamically, wire a 2nd PNP input to Smart input 2 **(Figure 93, item 4)**. Only one Smart input can be active at a time.
- One time, switch state of dip switch 1 **(Figure 93, item 5)** on the driver board. Dip Switches are only read at start up. After a change is made, cycle power to the unit.

Speed control is fixed using dip switches 2-4 per the table below (speed in RPM.) Dip Switches are only read at start up. After a change is made, cycle power to the unit.

SW2	SW3	SW4	Speed (RPM of Motor)	Belt Speed
Off	Off	Off	350	126
Off	Off	On	315	114
Off	On	Off	280	101
Off	On	On	245	88
On	Off	Off	210	76
On	Off	On	175	63
On	On	Off	140	51
On	On	On	105	38

Please reference **UniDrive® Basic Motor Control – Generation II "BMC-2" Guide to Installation and Use** for any drive troubleshooting.

Sensor Installation and Basic Logic

The default state is to have the pallet run through the straight section.

Activating the solenoid valve raises the straight section and lowers the curve section.

Corner motors can be signaled to run only when the curve is active. There is no harm in leaving the corner motors always running.

It is recommended to use an optional bottom mount **(Figure 94, item 1)** or side mount **(Figure 94, item 2)** sensor bracket to mount a 12 mm barrel proximity sensor **(Figure 94, item 3)** downstream to signal the station is clear. See “Optional Sensors” on page 8

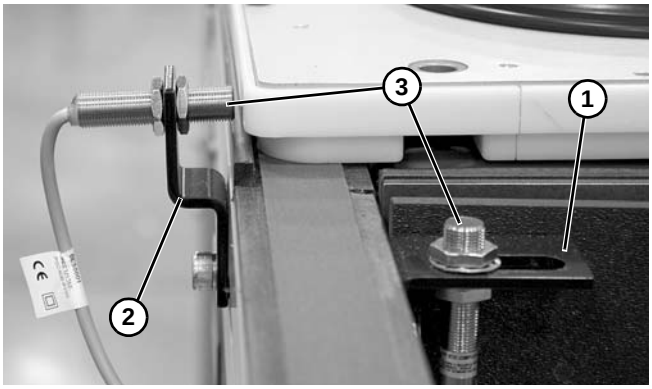


Figure 94

- Two bottom **(Figure 95, item 1)** and two side flags **(Figure 95, item 2)** (when bumpers are not installed) can be used for sensing.

Figure 95

Required Tools

- .050" hex wrench
- 2 mm hex wrench
- 3 mm hex wrench
- 5 mm hex wrench
- 6 mm hex wrench
- 8 mm wrench
- 12 mm wrench
- 13 mm wrench
- 17 mm wrench
- 19 mm wrench
- T20 torque wrench
- Flat blade screw driver
- Pliers
- Rubber mallet

Checklist

- Keep service parts on hand. Refer to the "Service Parts" section starting on page 40 for recommendations.
- Replace any worn or damaged parts.

Pallets

1. Remove pallet from conveyor.
2. Remove retaining ring **(Figure 96, item 1)** and bearing **(Figure 96, item 2)**.

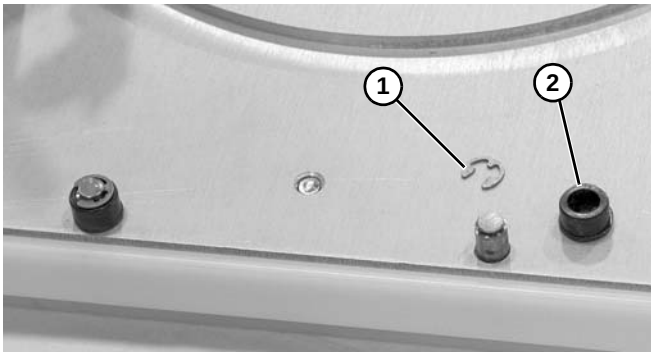


Figure 96

3. Remove socket head screws **(Figure 97, item 1)** with hex wrench **(Figure 97, item 2)**.

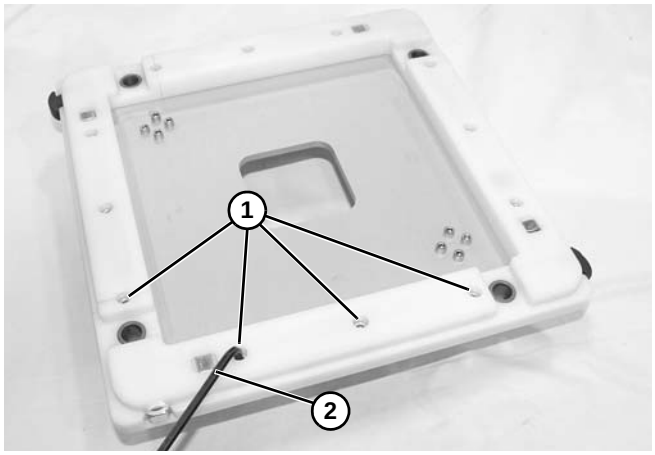


Figure 97

4. Using a flat blade screw driver **(Figure 98, item 1)**, pry corner skirt **(Figure 98, item 2)** off bushing **(Figure 98, item 3)**.

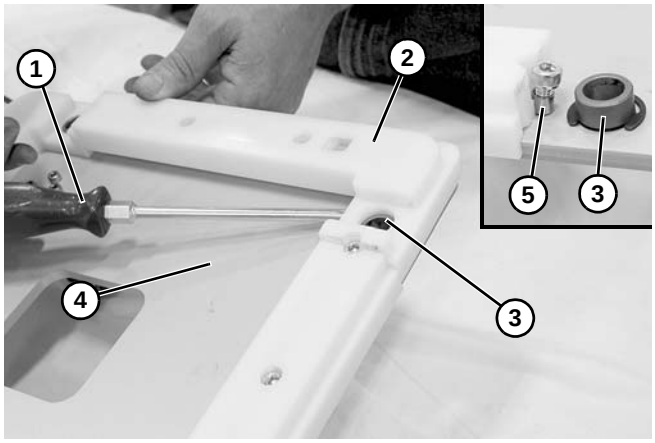


Figure 98

5. Remove corner skirt from top plate **(Figure 98, item 4)**. Make sure not to lose sleeve **(Figure 98, item 5)** at the point where two corner skirts meet.

6. Lift bumper **(Figure 99, item 1)** up and off roll pin **(Figure 99, item 2)** and remove from corner skirt.

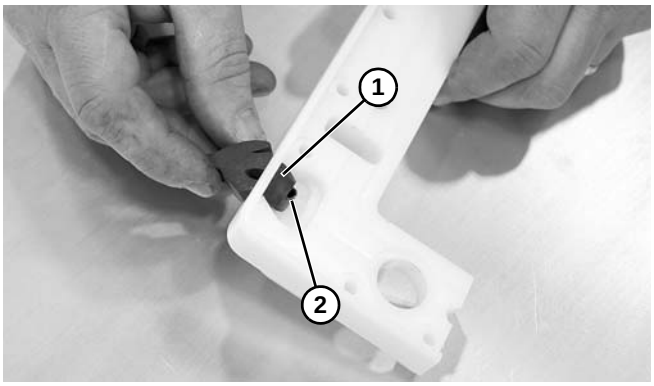


Figure 99

7. Remove roll pin **(Figure 100, item 1)** with needle nose pliers **(Figure 100, item 2)**.

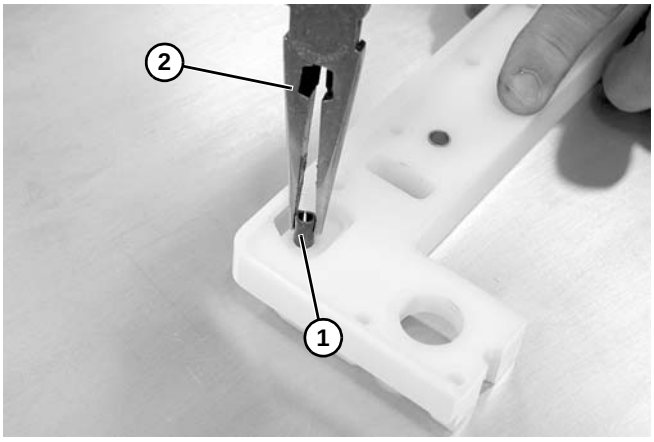


Figure 100

8. Replace worn or damaged parts.
9. Installation is the reverse of removal (except install bumper before guide pin).

Pallet Stops

Removal

For removal of Pallet Stops, reverse the installation procedure. See “Pallet Stops” on page 6.

Lift and Locate Station

Cylinder Replacement

1. Remove tubing **(Figure 101, item 1)** from the lower port **(Figure 101, item 2)** on the lift cylinder.

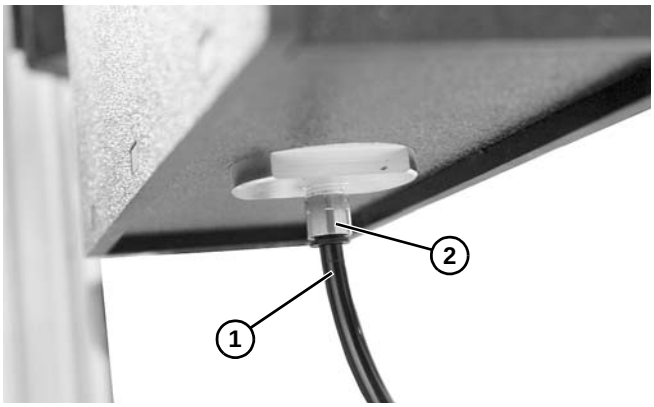


Figure 101

2. If installed, remove button head screws **(Figure 102, item 1)** and optional guard kit **(Figure 102, item 2)**.

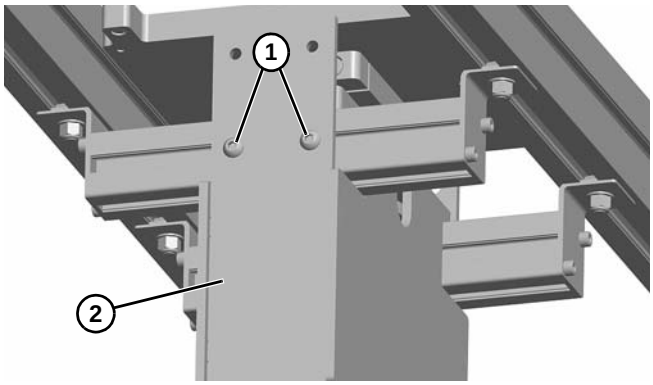


Figure 102

3. Remove tubing **(Figure 103, item 1)** from the upper port **(Figure 103, item 2)** on the lift cylinder.

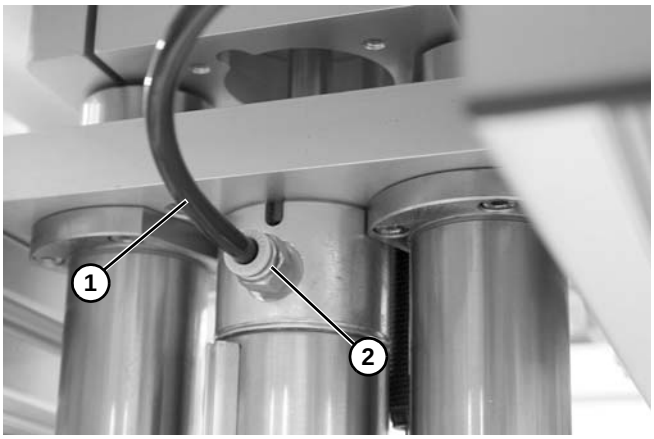


Figure 103

4. Remove socket head screws **(Figure 104, item 1)**. Remove socket head screw **(Figure 104, item 2)** securing top plate **(Figure 104, item 3)** to cylinder shaft. Remove top plate.

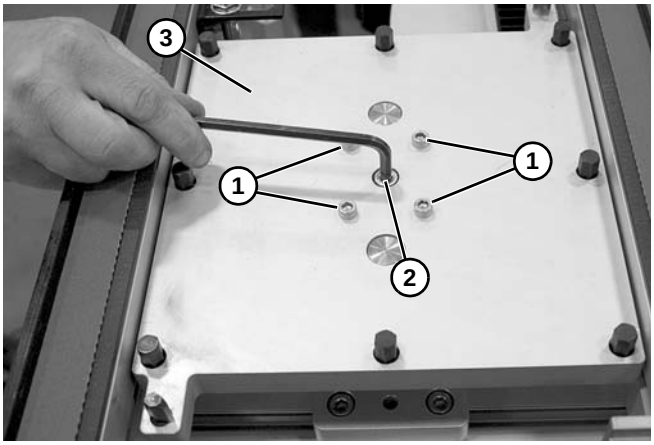


Figure 104

5. Loosen socket head screws **(Figure 105, item 1)** and remove bottom plate **(Figure 105, item 2)**.

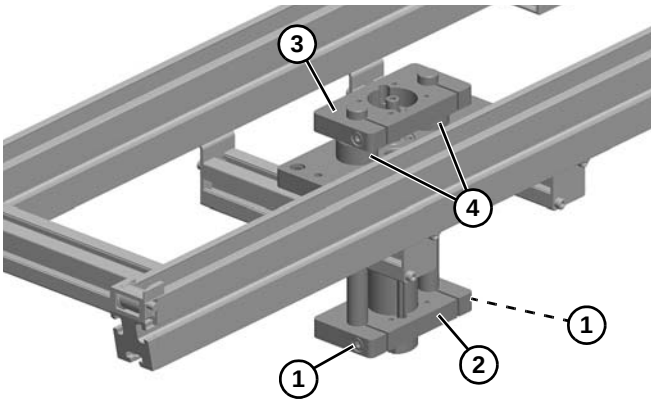


Figure 105

6. Remove top plate with shafts **(Figure 105, item 3)** from bearings **(Figure 105, item 4)**.

7. Remove socket head screws **(Figure 106, item 1)** and one bearing **(Figure 106, item 2)** as shown.

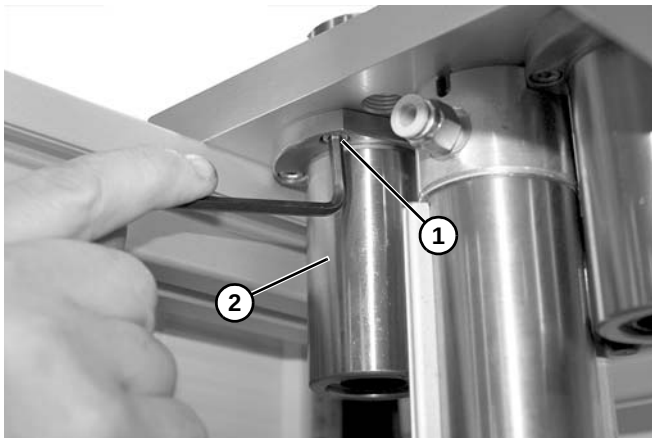


Figure 106

8. Using a spanner wrench **(Figure 107, item 1)**, loosen and remove nut **(Figure 107, item 2)**.

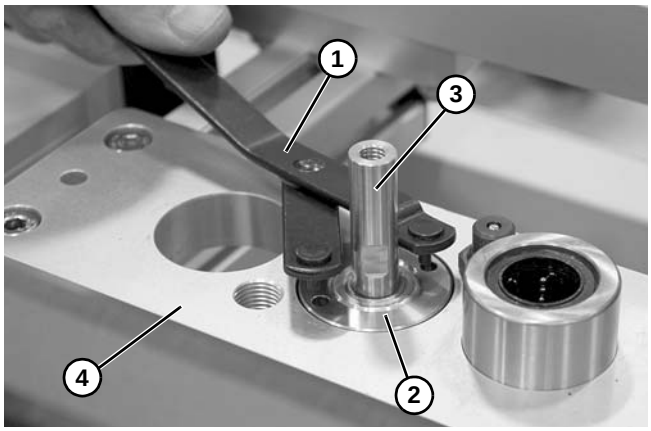


Figure 107

9. Remove cylinder **(Figure 107, item 3)** from mounting plate **(Figure 107, item 4)**.
10. Replace worn or damaged parts.
11. Installation is the reverse of removal.

Bearing Replacement

1. Remove lift cylinder, See “Cylinder Replacement” on page 30.
2. Remove socket head screws **(Figure 108, item 1)** and bearing **(Figure 108, item 2)**. Repeat for other bearing.

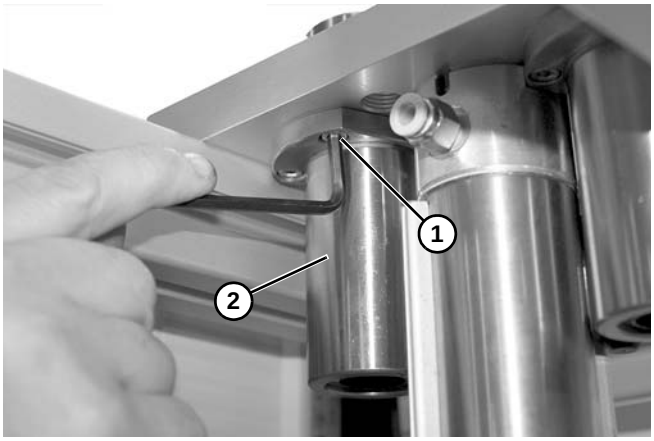


Figure 108

3. Replace worn or damaged parts.
4. Installation is the reverse of removal.

Lift and Transfer Station

Cylinder Replacement

1. If installed, remove button head screws **(Figure 109, item 1)** and guard kit **(Figure 109, item 2)**.

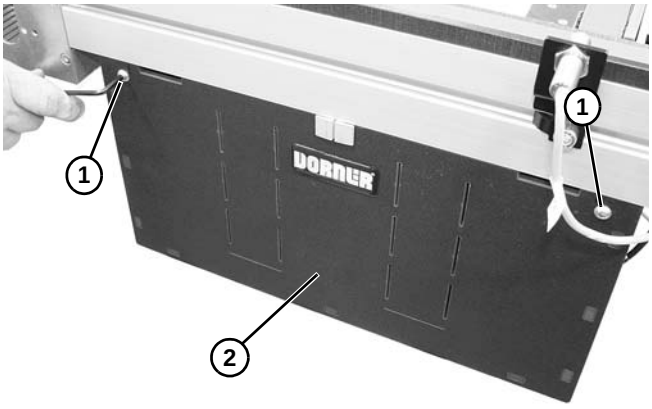


Figure 109

2. Remove belts, See “Belt Replacement” on page 33.
3. Remove wearsrtrips, See “Wearstrip Replacement” on page 34.
4. While supporting drive assembly in place, remove socket head screws **(Figure 110, item 1)** and top plate **(Figure 110, item 2)**.

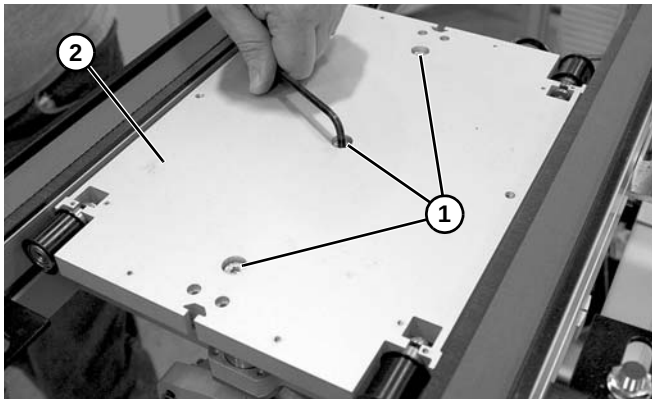


Figure 110

5. Lower drive assembly and shafts **(Figure 111, item 1)** from bearings **(Figure 111, item 2)**.

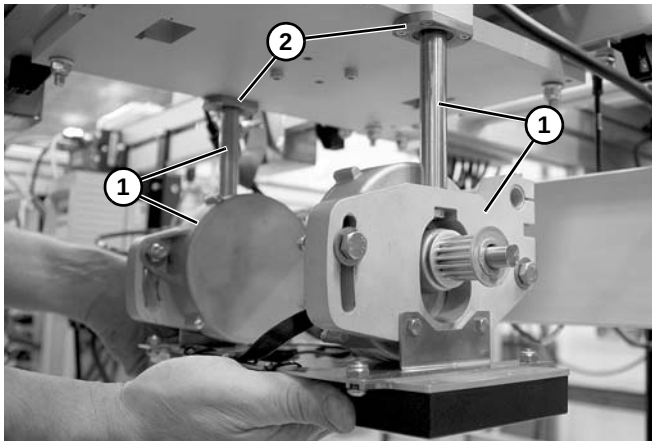


Figure 111

6. Remove tubing **(Figure 112, item 1)** from fittings **(Figure 112, item 2)**.

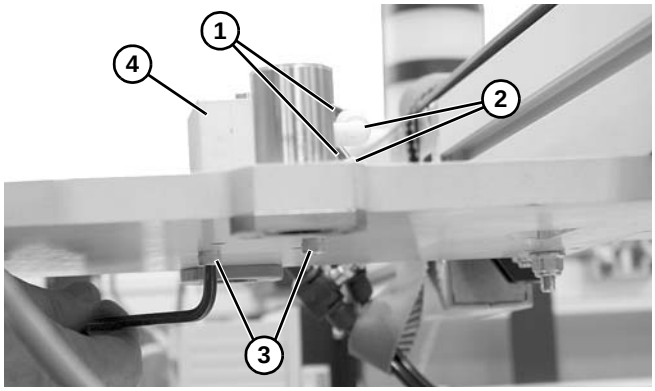


Figure 112

7. Remove socket head screws **(Figure 112, item 3)** and lift cylinder **(Figure 112, item 4)**.
8. Replace worn or damaged parts.
9. Installation is the reverse of removal.

Bearing Replacement

1. Remove lift cylinder, See “Cylinder Replacement” on page 32.
2. Remove socket head screws **(Figure 113, item 1)** and bearing **(Figure 113, item 2)**. Repeat for other bearing.

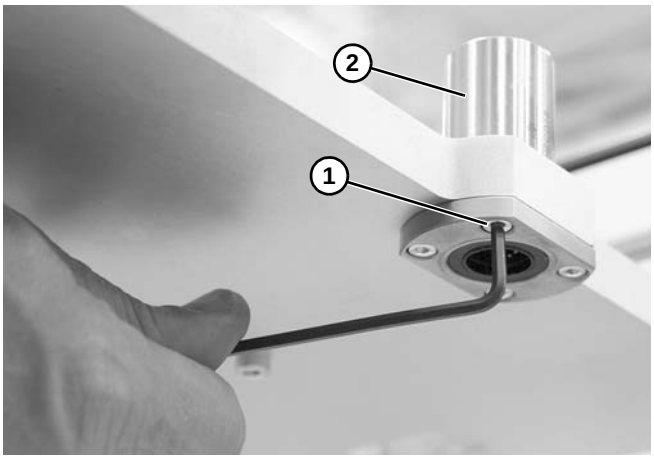


Figure 113

3. Replace worn or damaged parts.
4. Installation is the reverse of removal.

Belt Replacement

1. Remove button head screws **(Figure 114, item 1)** and guard kit **(Figure 114, item 2)**.

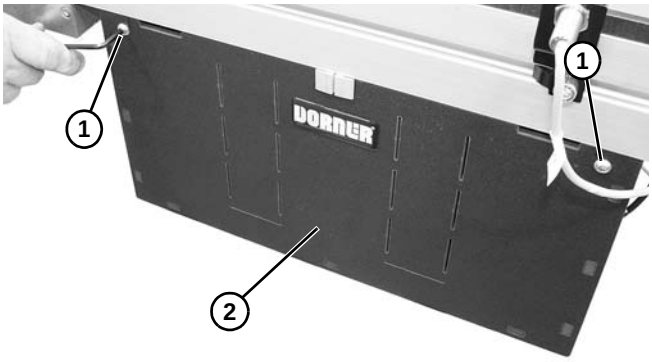


Figure 114

2. Remove tubing **(Figure 115, item 1)** from fittings **(Figure 115, item 2)**.

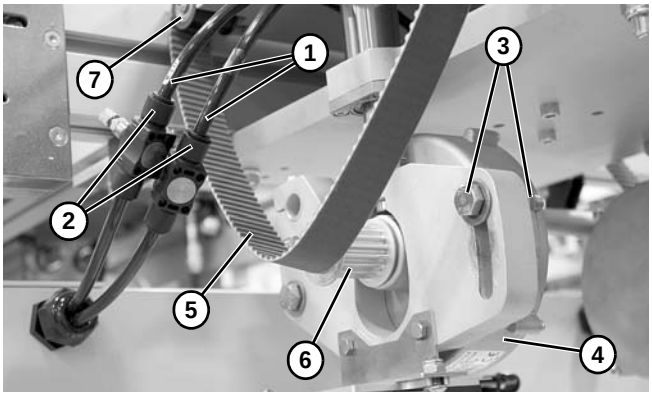


Figure 115

3. Loosen bolt and nut **(Figure 115, item 3)** and push motor **(Figure 115, item 4)** up. Slide belt **(Figure 115, item 5)** off sprocket **(Figure 115, item 6)** and upper rollers **(Figure 115, item 7)**.
4. Install new belt in reverse order of removal.

Motor Replacement

1. Remove belt. See “Belt Replacement” on page 33.
2. Remove motor plug **(Figure 116, item 1)** from drive control **(Figure 116, item 2)**.

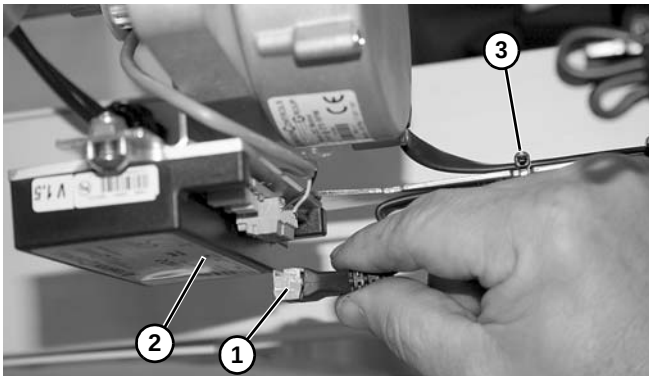


Figure 116

3. Remove tie straps **(Figure 116, item 3)** securing motor harness to bracket.
4. Remove hardware **(Figure 117, item 1)** securing motor **(Figure 117, item 2)** to bracket **(Figure 117, item 3)**.

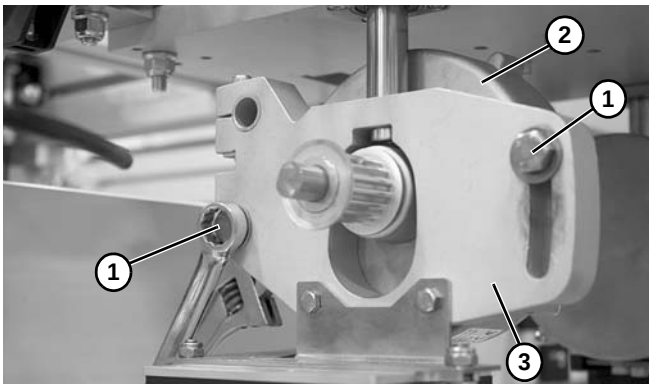


Figure 117

5. Installation is the reverse order of removal.

Wearstrip Replacement

1. Remove belts, See “Belt Replacement” on page 33.
2. Remove flat head screws **(Figure 117, item 1)** and wearstrip **(Figure 117, item 2)**.

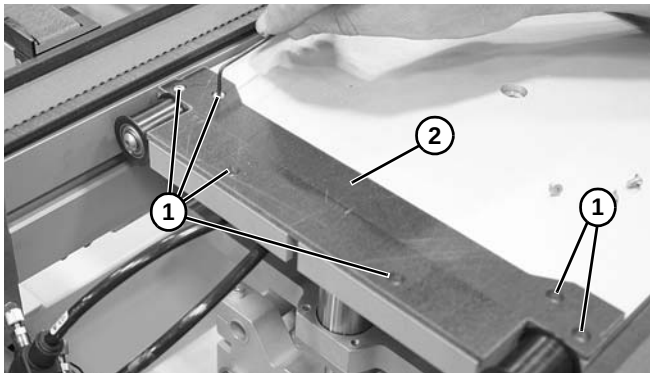


Figure 118

3. Repeat for opposite side.
4. Replace worn or damaged parts.
5. Installation is the reverse order of removal.

Roller Replacement

1. Remove belts, See “Belt Replacement” on page 33.
2. Remove button head screw **(Figure 119, item 1)** and roller **(Figure 119, item 2)** with hex wrench.

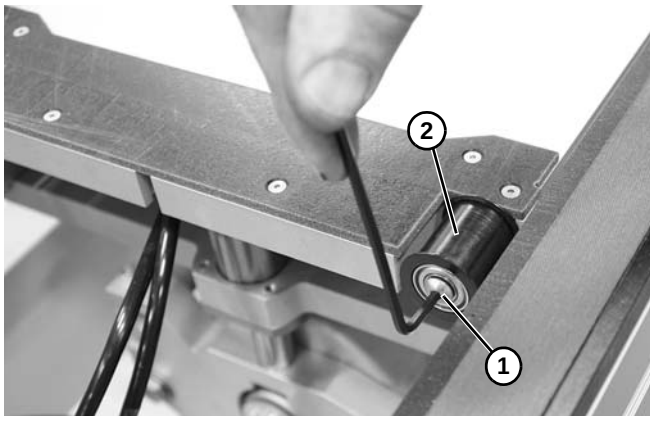


Figure 119

3. Repeat for other rollers.
4. Replace worn or damaged parts.

Lift and Rotate Station

Cylinder Replacement

1. Remove lift and rotate plate **(Figure 120, item 1)** from lift assembly.

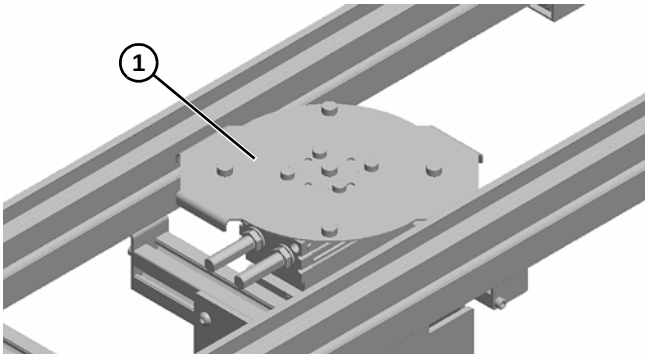


Figure 120

2. Remove tubing **(Figure 121, item 1)** from the lower port **(Figure 121, item 2)** on the lift cylinder.

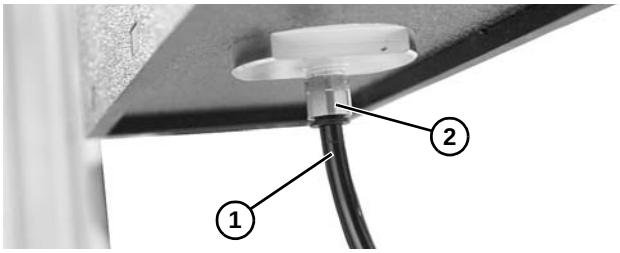


Figure 121

3. If installed, remove button head screws **(Figure 122, item 1)** and optional guard kit **(Figure 122, item 2)**.

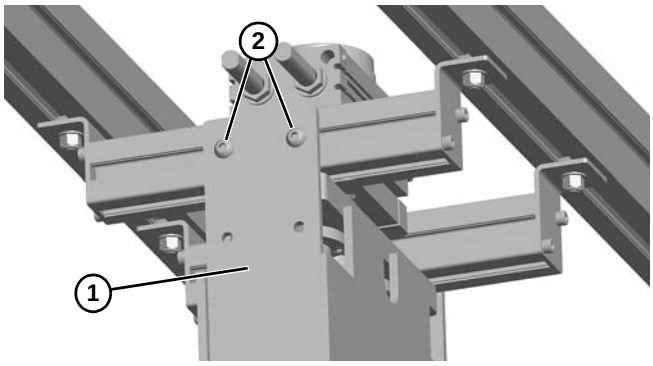


Figure 122

4. Remove tubing **(Figure 123, item 1)** from the upper port **(Figure 123, item 2)** on the lift cylinder.

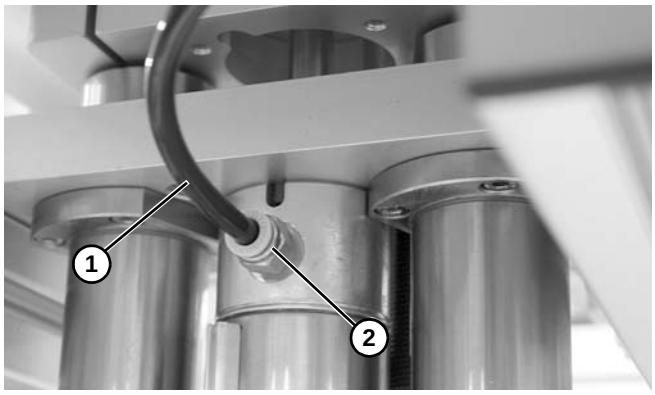


Figure 123

5. Remove tubing **(Figure 124, item 1)** from the fittings **(Figure 124, item 2)** on the rotating actuator.

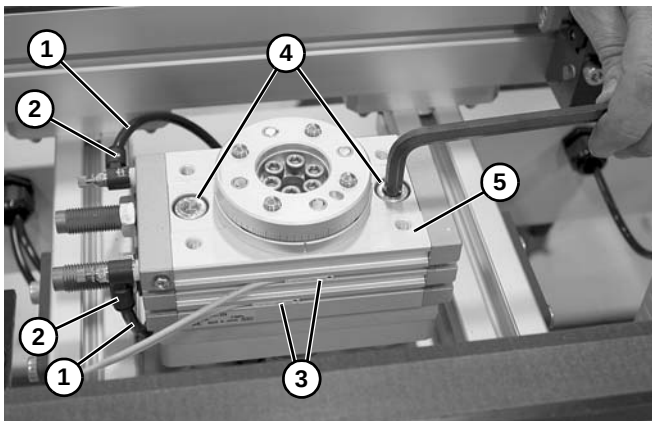


Figure 124

6. Remove optional sensors **(Figure 124, item 3)**, if installed. Remove socket head screws **(Figure 124, item 4)** and rotating actuator **(Figure 124, item 5)**.
7. Remove socket head screws **(Figure 125, item 1)**. Remove socket head screw **(Figure 125, item 2)** securing adapter plate **(Figure 125, item 3)** to cylinder shaft. Remove adapter plate.

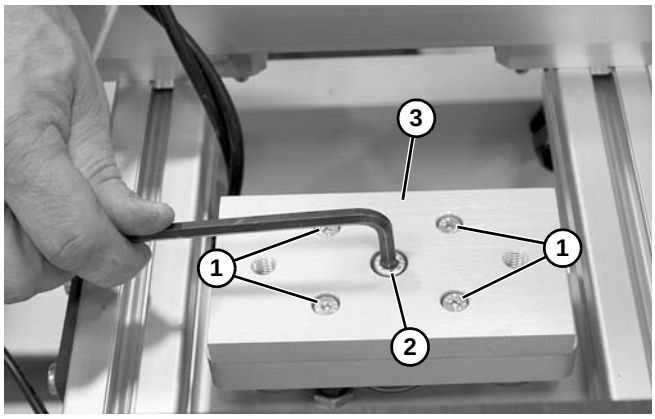


Figure 125

8. Loosen socket head screws **(Figure 126, item 1)** and remove bottom plate **(Figure 126, item 2)**.

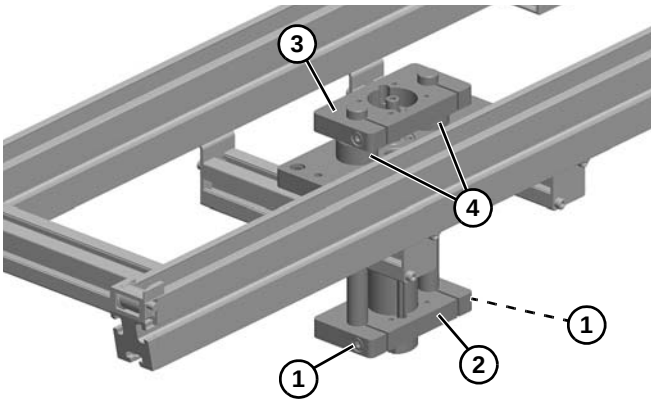


Figure 126

9. Remove top plate with shafts **(Figure 126, item 3)** from bearings **(Figure 126, item 4)**.
10. Remove socket head screws **(Figure 127, item 1)** and one bearing **(Figure 127, item 2)** as shown.

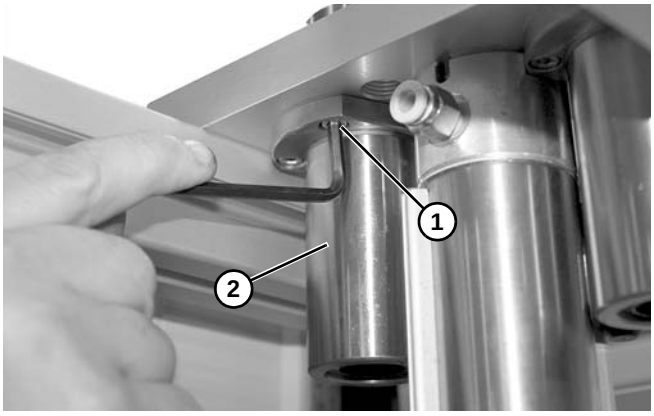


Figure 127

11. Using a spanner wrench **(Figure 128, item 1)**, loosen and remove nut **(Figure 128, item 2)**.

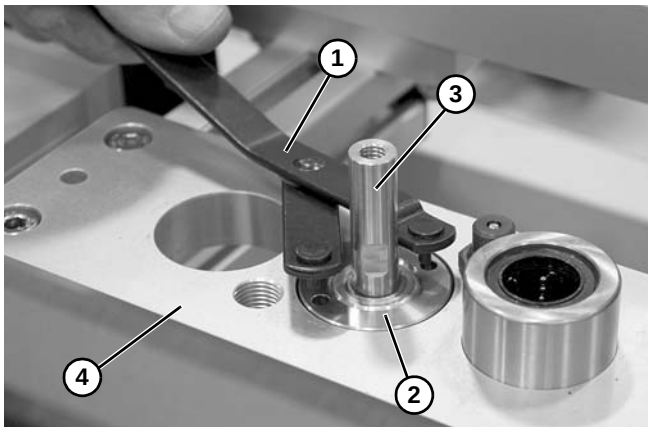


Figure 128

12. Remove cylinder **(Figure 128, item 3)** from mounting plate **(Figure 128, item 4)**.
13. Replace worn or damaged parts.
14. Installation is the reverse of removal.

Bearing Replacement

1. Remove lift cylinder, See “Cylinder Replacement” on page 35.
2. Remove socket head screws **(Figure 129, item 1)** and bearing **(Figure 129, item 2)**. Repeat for other bearing.

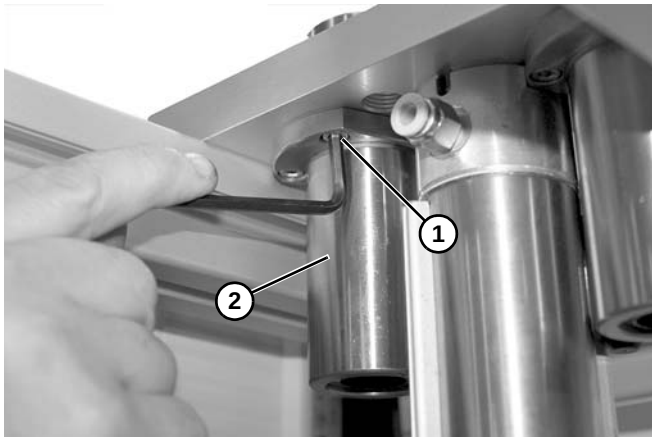


Figure 129

3. Replace worn or damaged parts.
4. Installation is the reverse of removal.

90° Corner

Removal

For removal of 90° Corner, reverse the installation procedure. See “90° Corner” on page 22.

Guide Track Replacement

1. Loosen and remove socket head screws **(Figure 130, item 1)** from cam follower nuts **(Figure 130, item 2)**.

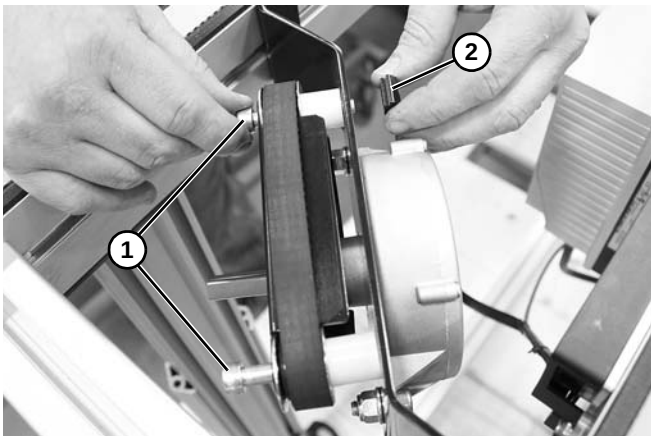


Figure 130

2. Remove guide track assembly **(Figure 131, item 1)**.

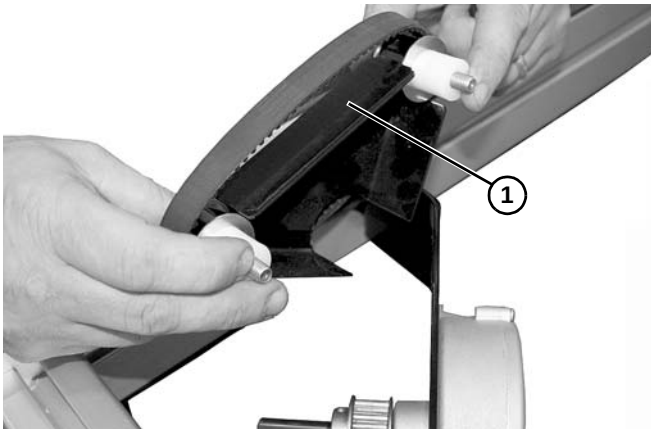


Figure 131

3. Make note of position of individual components, and disassemble guide track assembly.
4. Replace worn or damaged parts.
5. Installation is the reverse of removal.

90° Corner and Merge

Removal

For removal of 90° Corner and Merge, reverse the installation procedure. See “90° Corner and Merge” on page 24.

Cylinder Replacement

Procedure shown is for the Corner Guide. Procedure for the Straight Guide is similar.

1. Remove tubing from fittings on cylinder.
2. Remove lock nuts **(Figure 132, item 1)**, grommets **(Figure 132, item 2)**, and corner guide **(Figure 132, item 3)**.

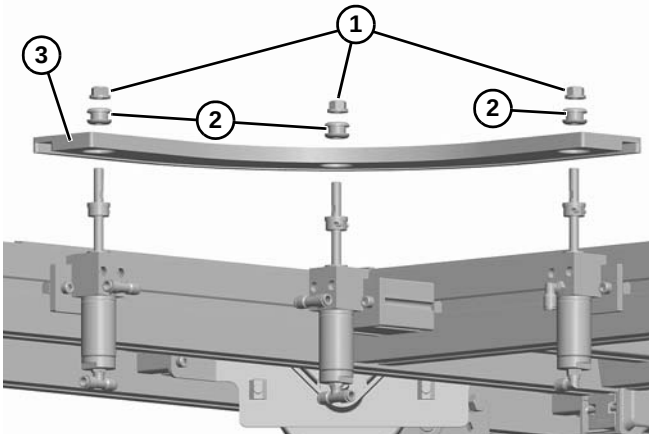


Figure 132

3. Remove socket head screws **(Figure 133, item 1)** securing cylinder assembly **(Figure 133, item 1)** to conveyor.

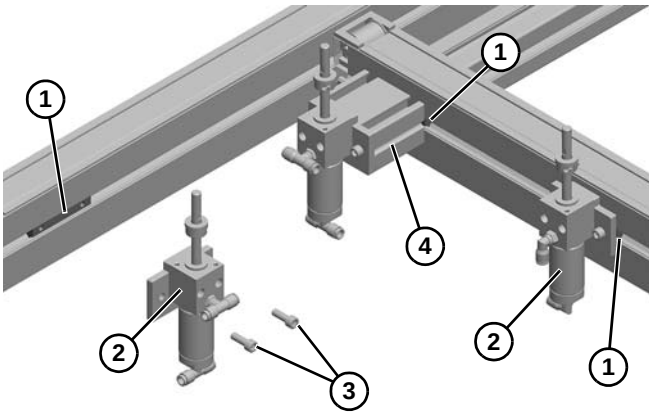


Figure 133

4. Installation is the reverse order of removal.
5. Adjust guiding. See “Adjust Guiding” on page 26

Guide Track Replacement

1. Loosen and remove socket head screws **(Figure 134, item 1)** from cam follower nuts **(Figure 134, item 2)**.

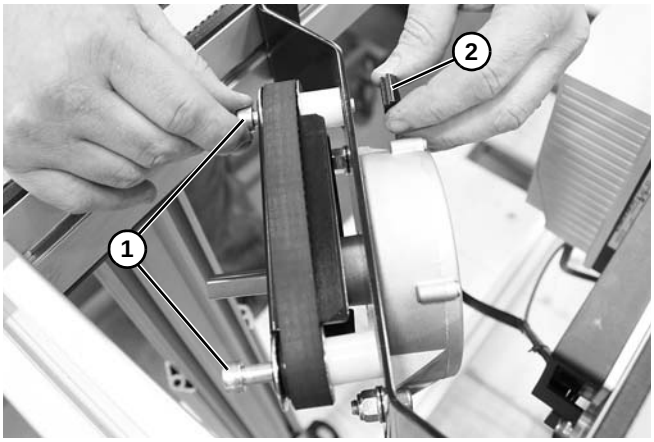


Figure 134

2. Remove guide track assembly **(Figure 135, item 1)**.

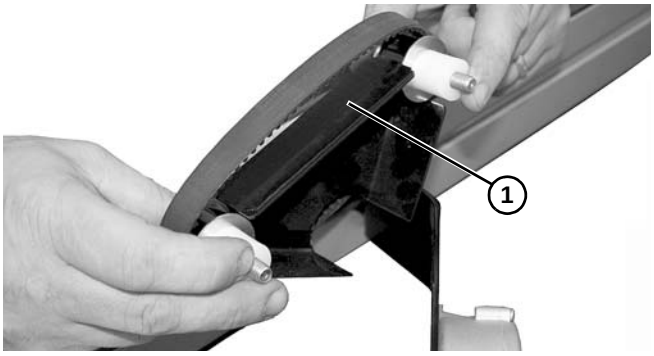


Figure 135

3. Make note of position of individual components, and disassemble guide track assembly.
4. Replace worn or damaged parts.
5. Installation is the reverse of removal.

Wearstrip Replacement

1. Loosen screws **(Figure 136, item 1)**.

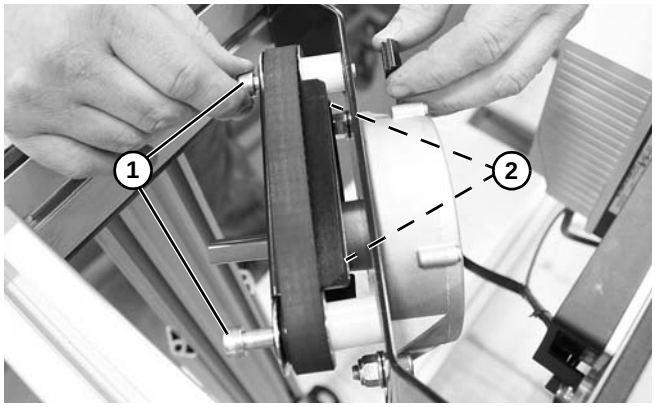


Figure 136

2. Remove flathead screws **(Figure 136, item 2)** holding wearstrip.
3. Remove wearstrip.
4. Reverse steps for installation.

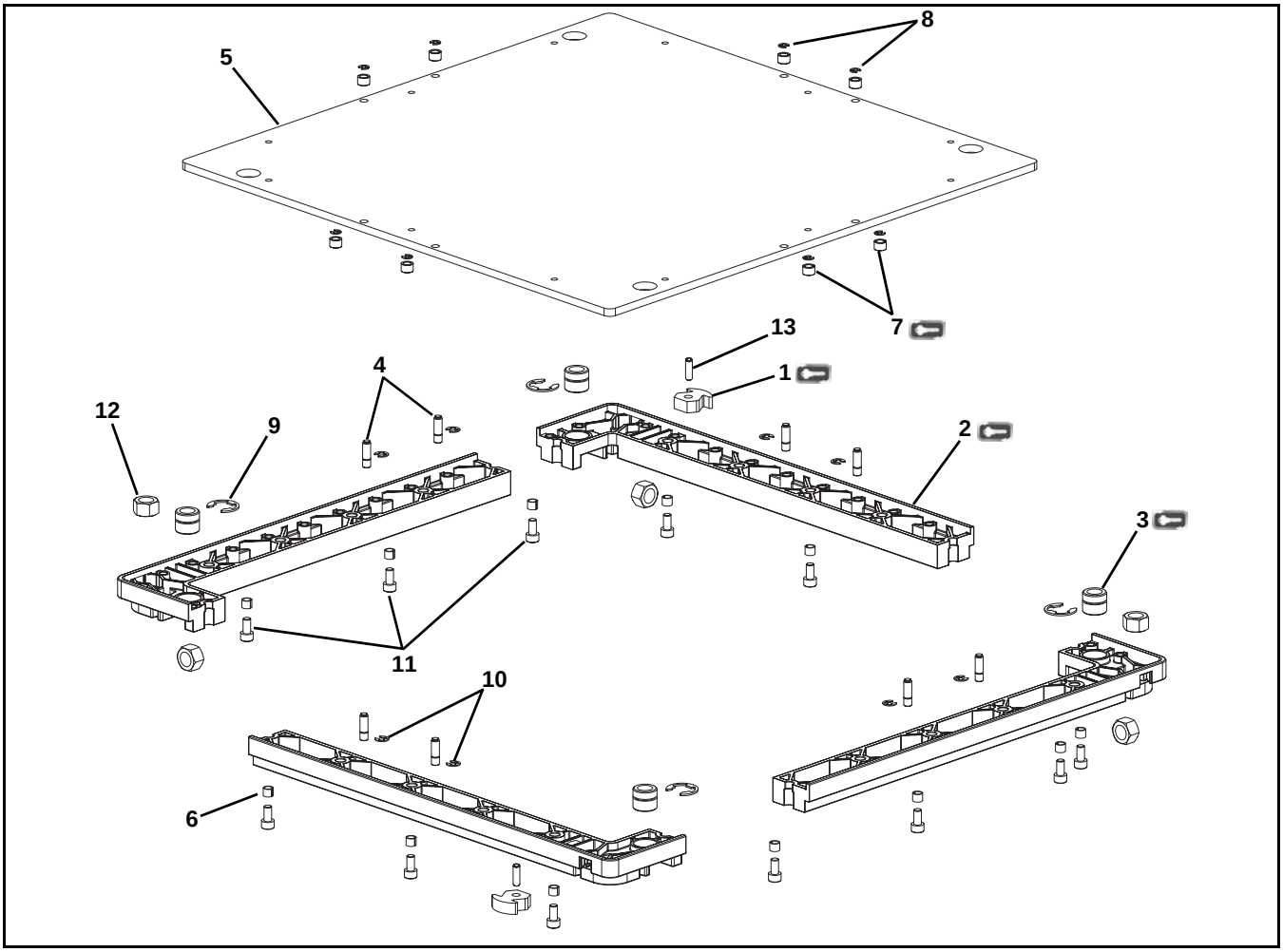
Notes

Service Parts

NOTE

For replacement parts other than those shown in this section, contact an authorized Dorner Service Center or the factory. Key Service Parts and Kits are identified by the Performance Parts Kits logo. Dorner recommends keeping these parts on hand.

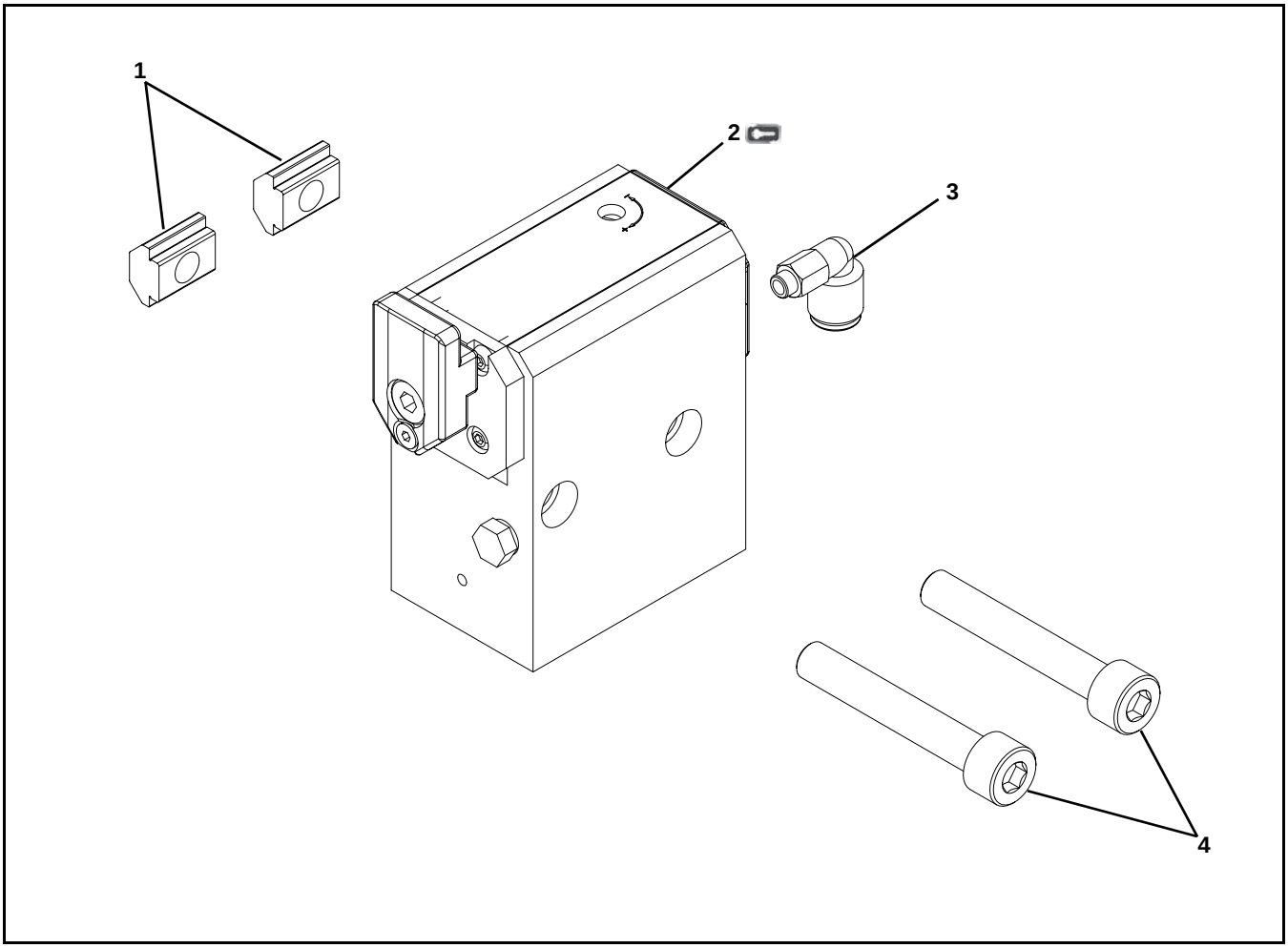
Pallets



Item	Part Number	Description
1	205137	Bumper
2	204288-WWW	Corner Skirt
3	204548	Bushing
4	204549-3	Guide Pin, for 3/16" Thick Top Plate
	204549-4	Guide Pin, for 1/4" Thick Top Plate
	204549-6	Guide Pin, for 3/8" Thick Top Plate
	204549-8	Guide Pin, for 1/2" Thick Top Plate

Item	Part Number	Description
5	265583-WWWxLLL	3/16" Thick Top Plate
	265584-WWWxLLL	1/4" Thick Top Plate
	265586-WWWxLLL	3/8" Thick Top Plate
	265588-WWWxLLL	1/2" Thick Top Plate
6	450226SSP	Sleeve
7	801-157	Bearing
8	915-203	Retaining Ring
9	915-225	Retaining Ring
10	915-342	Retaining Ring
11	920612M	Socket Head Screw, M6-1.00 x 12 mm
12	991201M	Hex Nut
13	913-051	Roll Pin
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLL = Pallet length reference: 160, 240, 320, 400, 480		

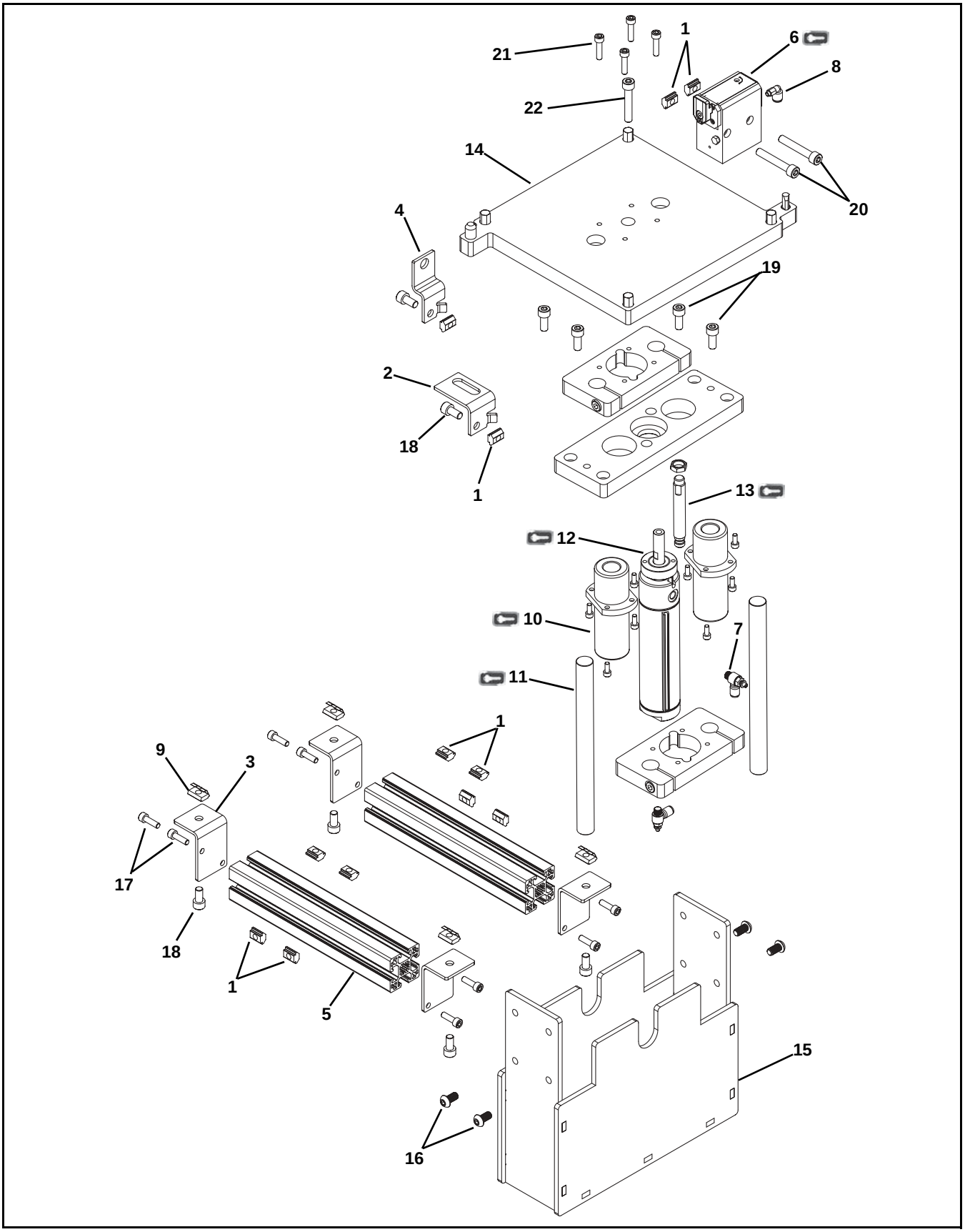
Pallet Stops



Item	Part Number	Description
1	202390M	Cam Follower Nut
2	804-724	Non-Cushioned Stop Assembly
⇦	804-725	Cushioned Stop Assembly
3	810-529	Elbow Fitting
4	920850M	Socket Head Screw, M8-1.25 x 50 mm

Service Parts

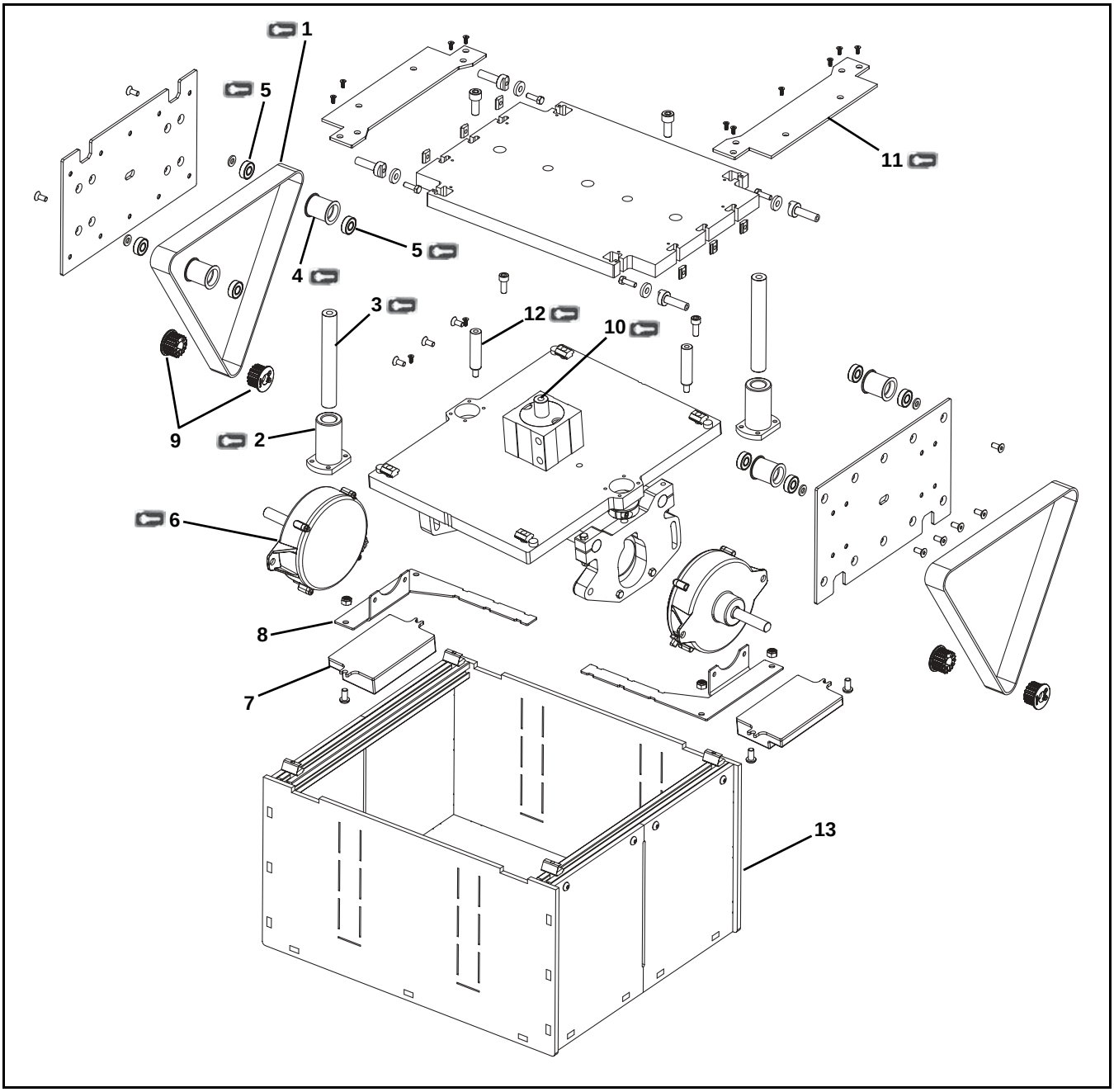
Lift and Locate Station



Item	Part Number	Description
1	202390M	Cam Follower Nut
2	205157	Optional Bottom Sensor Bracket
3	205556	Mounting Bracket
4	205557	Optional Side Sensor Bracket
5	205568-WWW	Mounting Tube
6	804-724	Non-Cushioned Stop Assembly
	804-725	Cushioned Stop Assembly
7	810-535	Flow Control Valve
8	810-529	Elbow Fitting
9	205508	Spring Tee Nut
10	835-150	Bearing
11	835-152	Rod
12	835-153	Cylinder
13	835-151	Shock
14	835-011-WWW-LLL	Top Plate Assembly
15	835-022	Guarding Kit
16	910816M	Button Head Screw, M8-1.25 x 16 mm
17	920620M	Socket Head Screw, M6-1.00 x 20 mm
18	920816M	Socket Head Screw, M8-1.25 x 16 mm
19	920820M	Socket Head Screw, M8-1.25 x 20 mm
20	920850M	Socket Head Screw, M8-1.25 x 50 mm
21	920625M	Socket Head Screw, M6-1.00 x 25 mm
22	920845M	Socket Head Screw, M8-1.25 x 45 mm
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLL = Pallet length reference: 160, 240, 320, 400, 480		

Service Parts

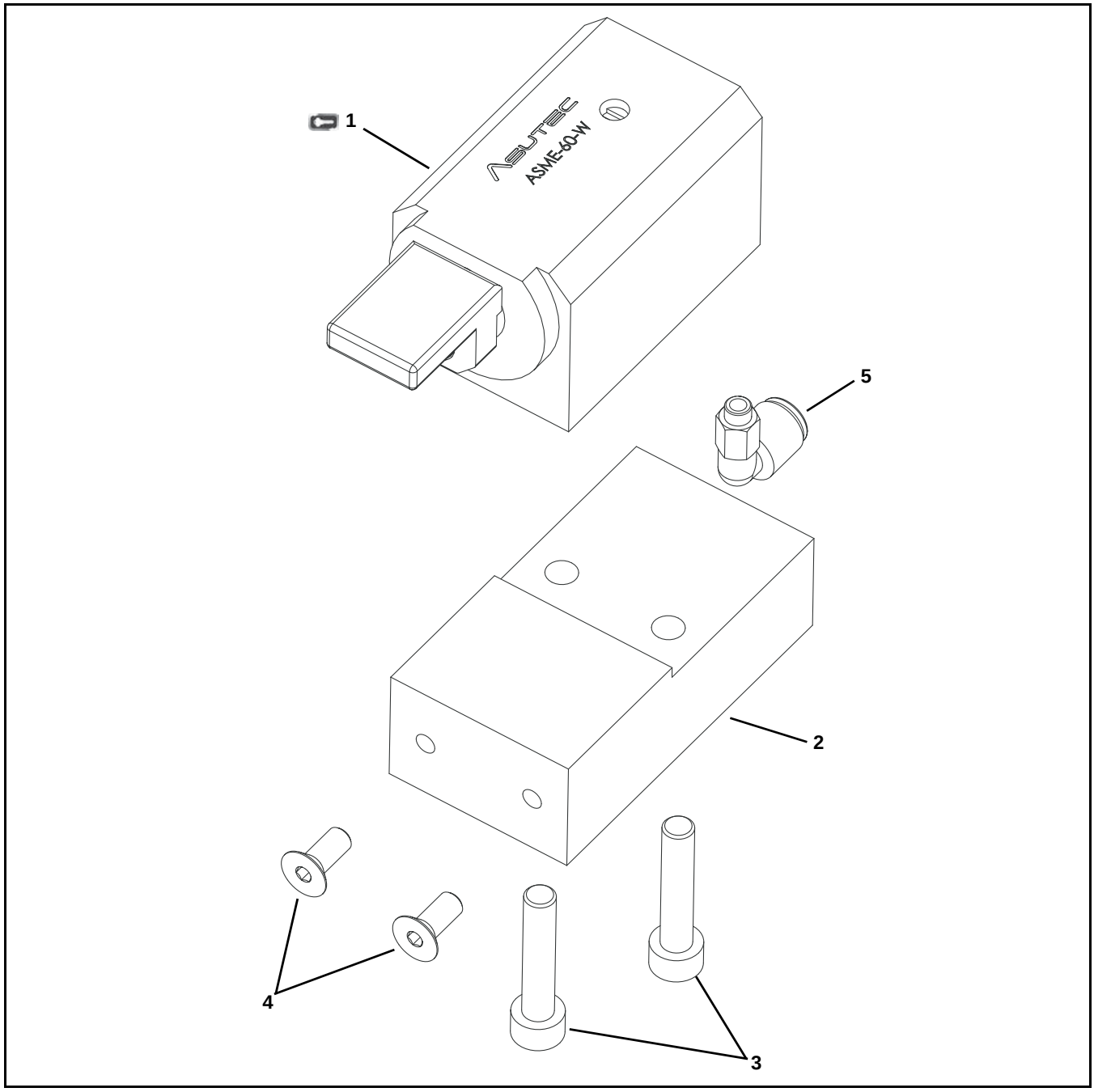
Lift and Transfer Station



Item	Part Number	Description
1	835-143-WWW-LLL	Belt
2	835-144	Bearing
3	835-145	Rod
4	835-102	Flange Roller
5	835-103	Bearing
6	835-140	Motor

Item	Part Number	Description
7	805-1644	Drive
8	835-148	Bracket
9	835-147	Pulley
10	835-146	Cylinder
11	835-142-WWW-LLL	Wear Strip
12	835-141	Shock
13	835-013-WWW-LLL	Guarding Kit
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLL = Pallet length reference: 160, 240, 320, 400, 480		

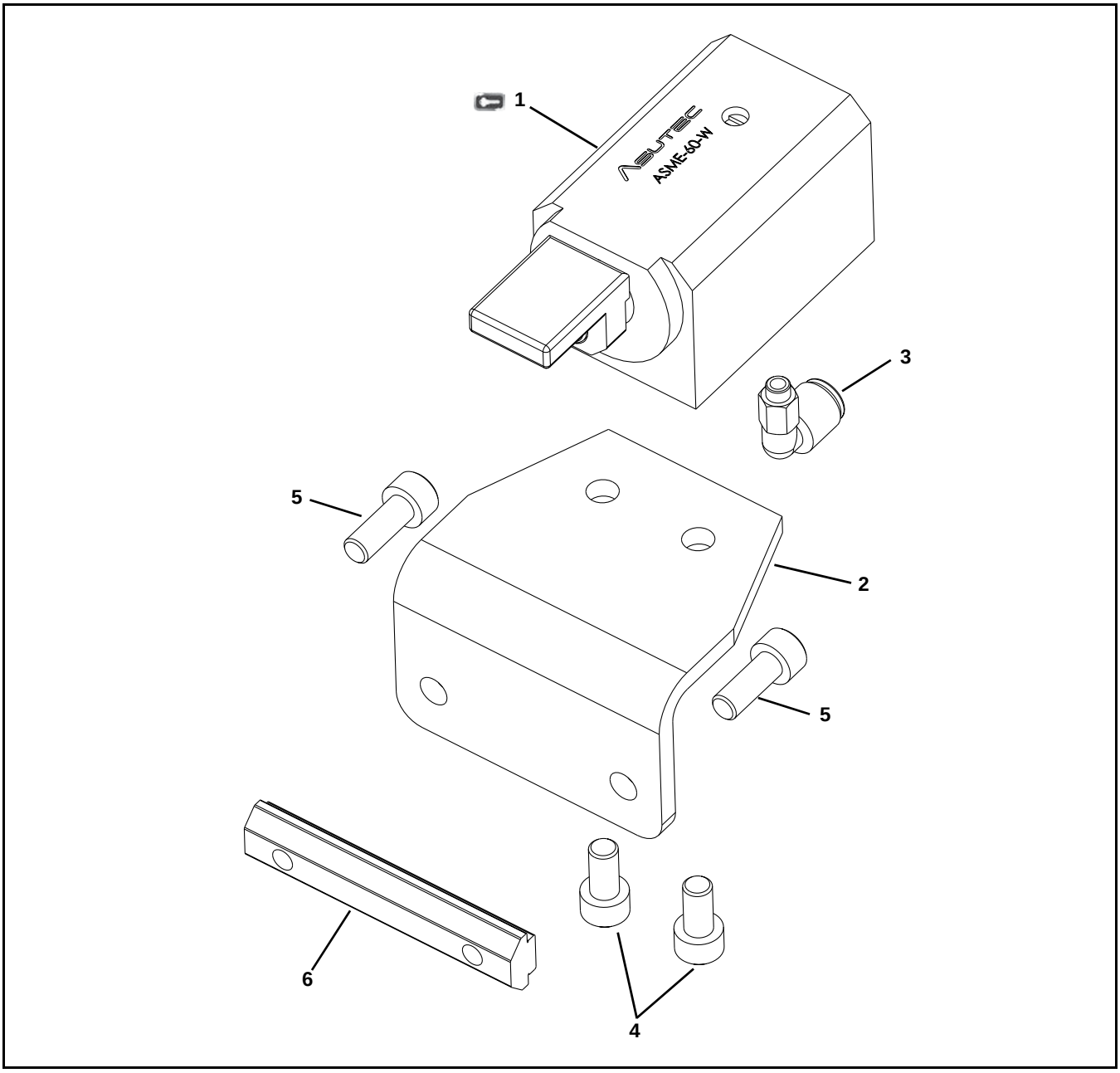
Sending Cushioned Stop Assembly



Item	Part Number	Description
1	804-774	Angle Damper
2	835-014	Mounting Block
3	920630M	Socket Head Screw, M6-1.00 x 30 mm
4	930512M	Flat Head Screw, M5-.80 x 12 mm
5	810-529	Elbow Fitting, M5 to 1/4" O.D.

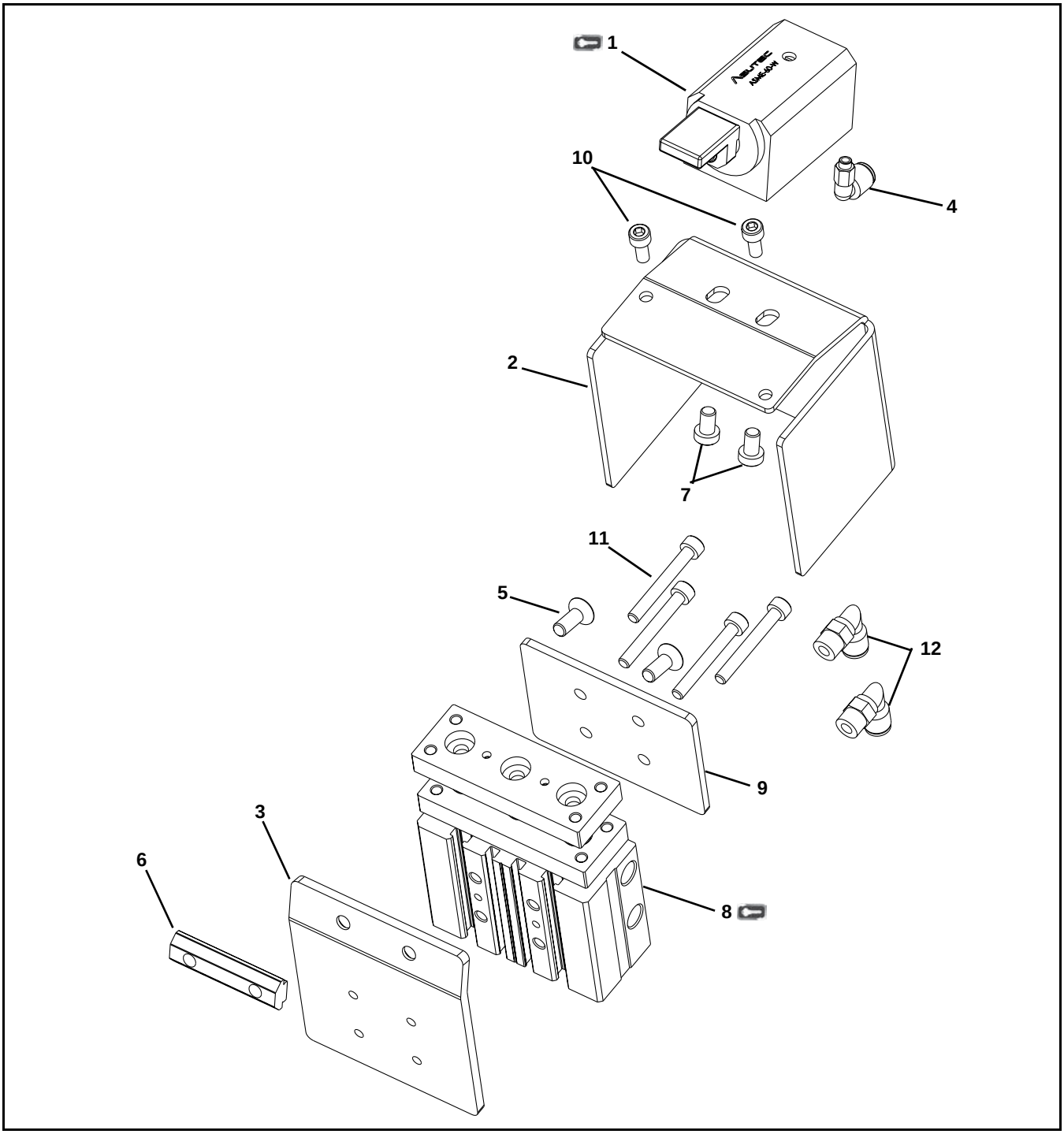
Service Parts

Receiving Cushioned Stop Assembly



Item	Part Number	Description
1	804-774	Angle Damper
2	204730	Mounting Angle
3	810-529	Elbow Fitting, M5 to 1/4" O.D.
4	920612M	Socket Head Screw, M6-1.00 x 12 mm
5	920616M	Socket Head Screw, M6-1.00 x 16 mm
6	300150M	Drop-In Tee Bar

Receiving Cushioned Flow Thru Stop Assembly

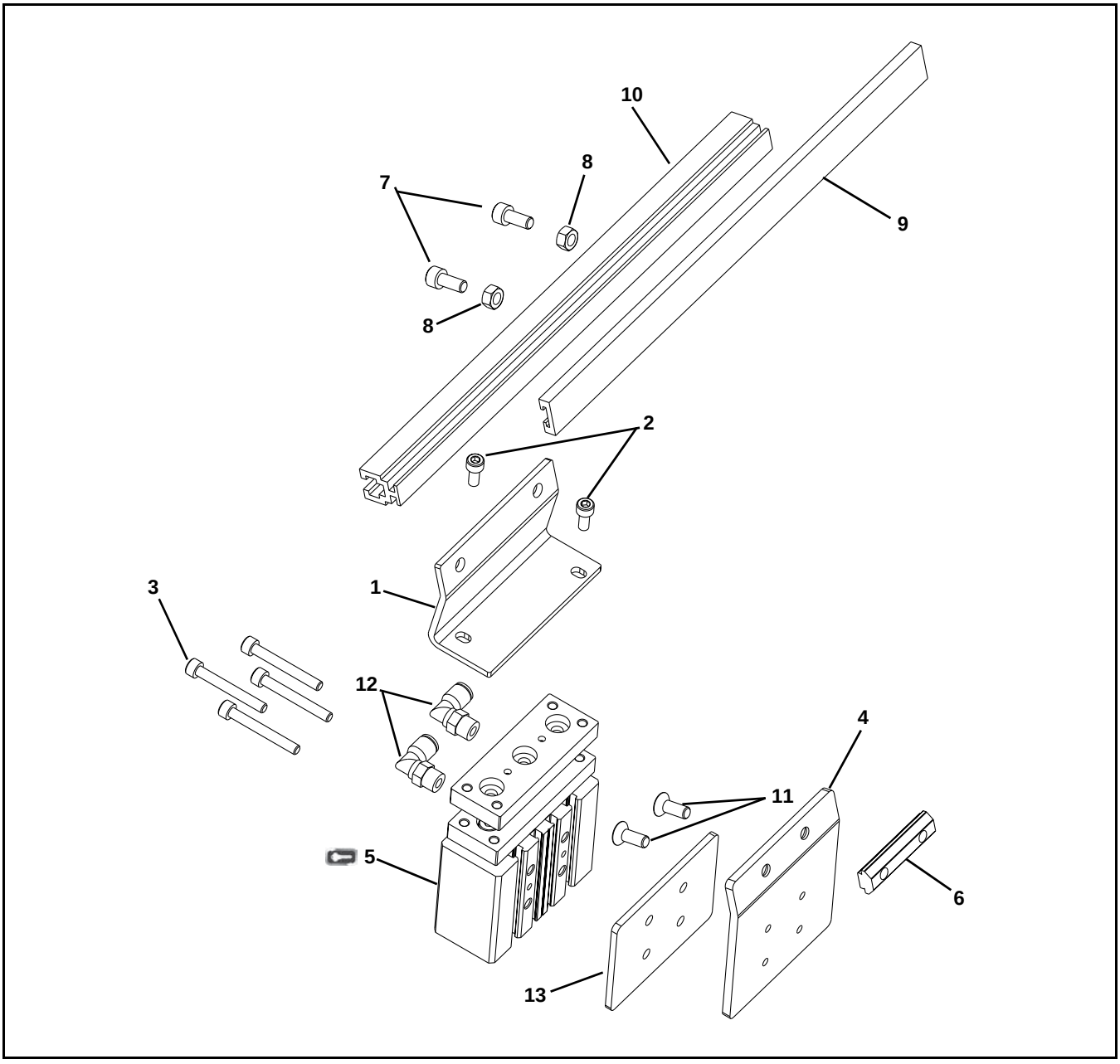


Item	Part Number	Description
1	804-774	Angle Damper
2	206657	Guard Plate
3	204739	Mounting Plate
4	810-529	Elbow Fitting, M5 to 1/4" O.D.
5	930616M	Flat Head Screw, M6-1.00 x 16 mm
6	639717M	Drop-In Tee Bar

Item	Part Number	Description
7	950610M	Low Head Cap Screw, M6-1.00 x 10 mm
8	804-776	Air Cylinder
9	204745	Spacer Plate
10	920512M	Socket Head Screw, M5-.80 x 12 mm
11	920540M	Socket Head Screw, M5-.80 x 40 mm
12	810-222	Male Elbow

Service Parts

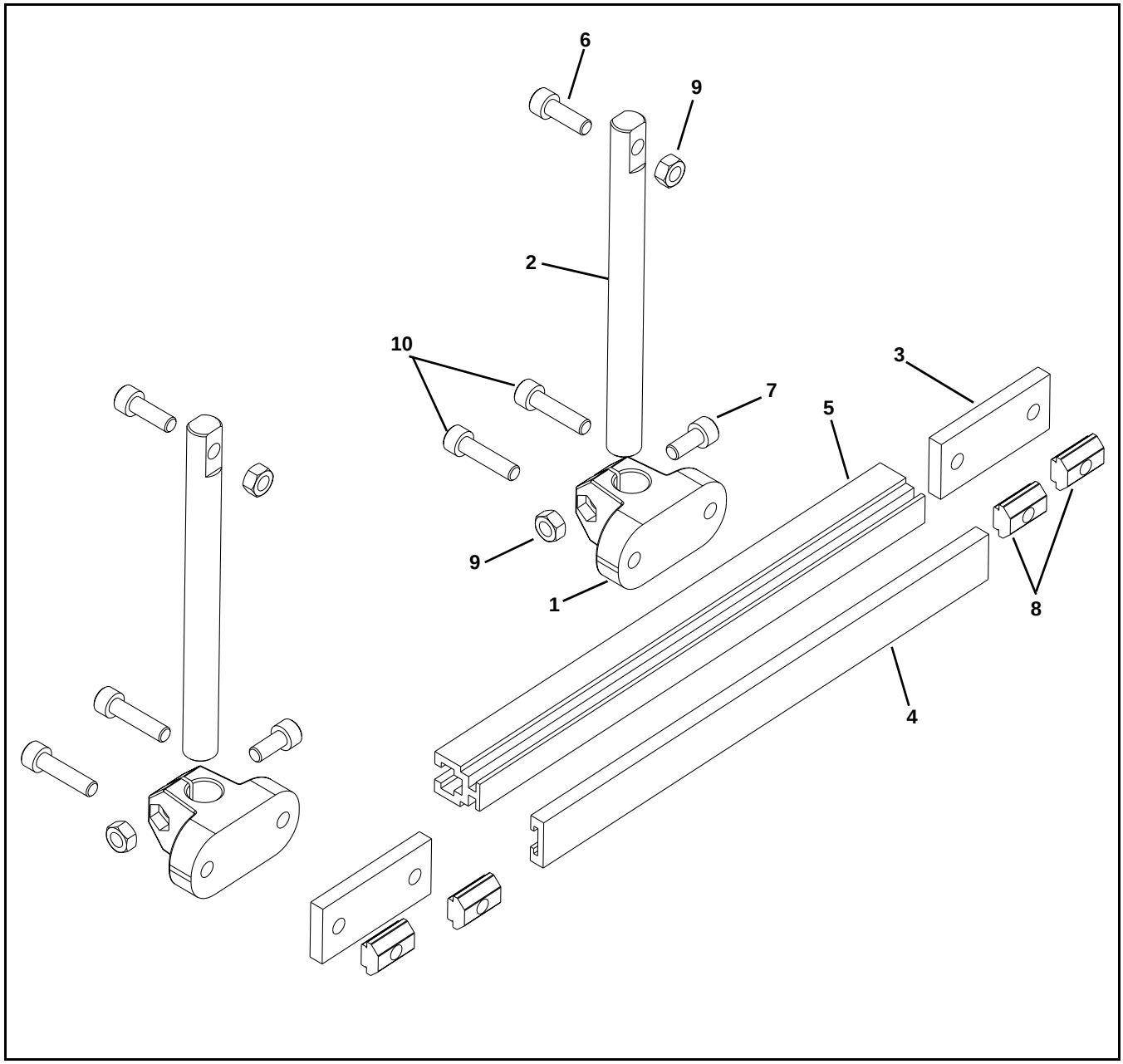
Receiving Non-Cushioned Flow Thru Stop Assembly



Item	Part Number	Description
1	205591	Pallet Stop Bracket
2	920512M	Socket Head Screw, M5-.080 x 12 mm
3	920540M	Socket Head Screw, M5-.080 x 40 mm
4	204739	Mounting Plate
5	804-776	Air Cylinder
6	693717M	Drop-In Tee Bar
7	920614M	Socket Head Screw, M6-1.00 x 14 mm
8	990601M	Hex Nut

Item	Part Number	Description
9	614068P-00291	Extruded Guide for 160 width
	614068P-00606	Extruded Guide for 240 width
	614068P-00921	Extruded Guide for 320 width
	614068P-01236	Extruded Guide for 400 width
	614068P-01551	Extruded Guide for 480 width
10	203525-00291	Profile Guide for 160 width
	203525-00606	Profile Guide for 240 width
	203525-00921	Profile Guide for 320 width
	203525-01236	Profile Guide for 400 width
	203525-01551	Profile Guide for 480 width
11	930616M	Flat Head Screw, M6-1.00 x 16 mm
12	810-222	Male Elbow
13	204745	Spacer Plate

Receiving Non-Cushioned Stop Assembly

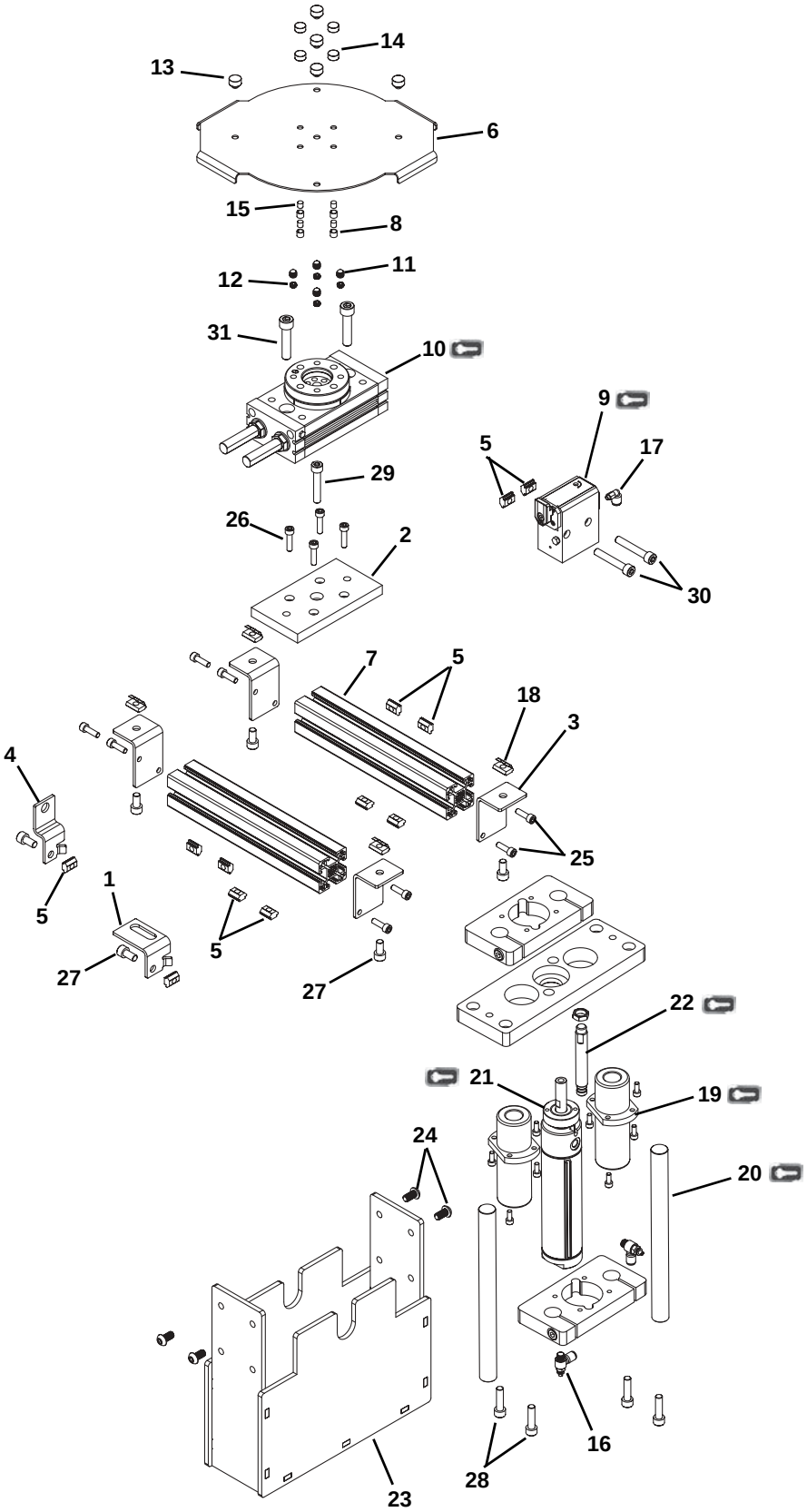


Item	Part Number	Description
1	807-824	Clamp Block
2	462050M	Vertical Shaft
3	205592	Spacer Bracket
4	614068P-00291	Extruded Guide for 160 width
	614068P-00606	Extruded Guide for 240 width
	614068P-00921	Extruded Guide for 320 width
	614068P-01236	Extruded Guide for 400 width
	614068P-01551	Extruded Guide for 480 width
5	203525-00291	Profile Guide for 160 width
	203525-00606	Profile Guide for 240 width
	203525-00921	Profile Guide for 320 width
	203525-01236	Profile Guide for 400 width
	203525-01551	Profile Guide for 480 width

Item	Part Number	Description
6	920618M	Socket Head Screw, M6-1.00 x 18 mm
7	920614M	Socket Head Screw, M6-1.00 x 14 mm
8	639971M	Drop-In Tee Bar
9	990601M	Hex Nut
10	920625M	Socket Head Screw, M6-1.00 x 25 mm

Service Parts

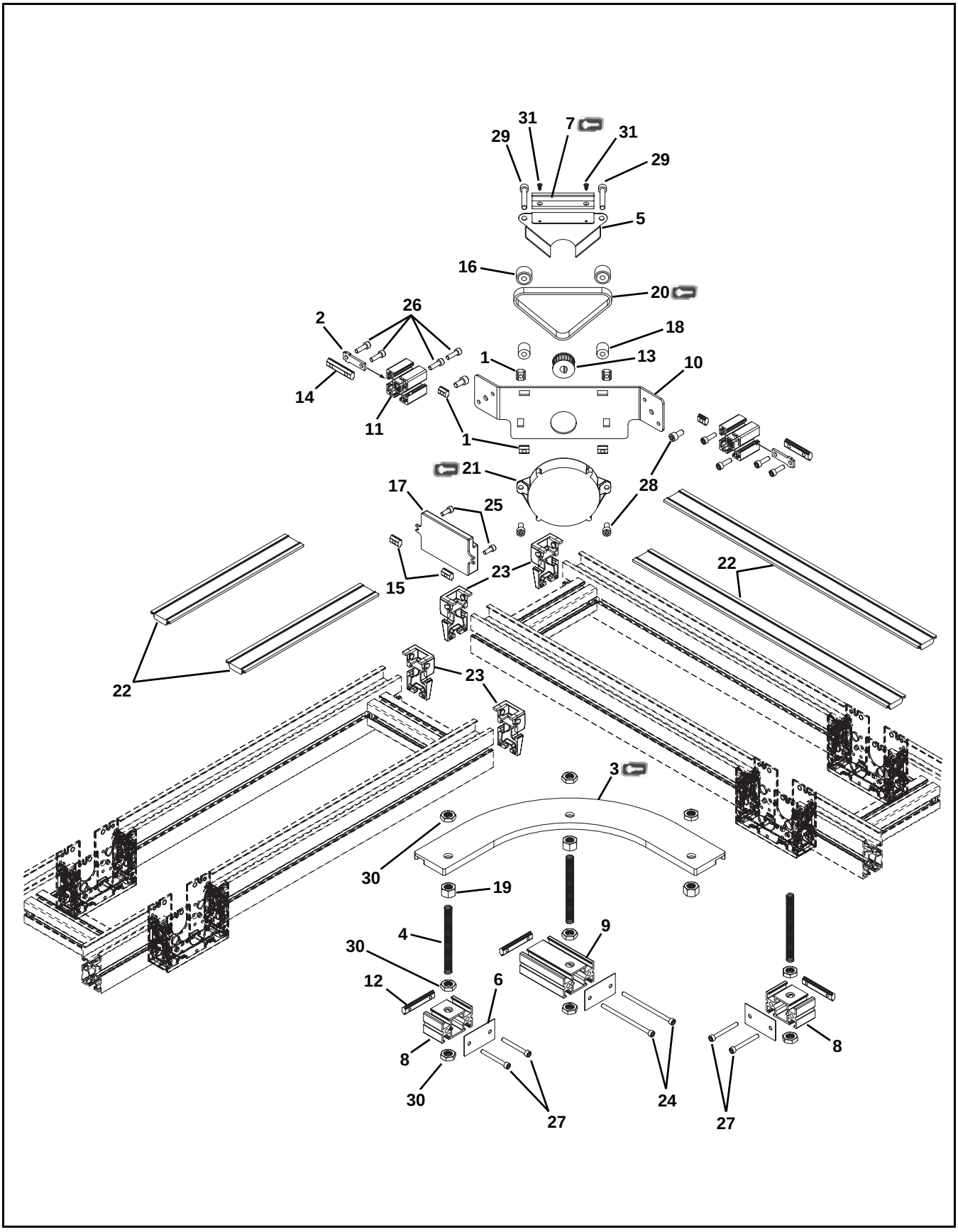
Lift and Rotate Station



Item	Part Number	Description
1	205157	Optional Bottom Sensor Bracket
2	205554	Adaptor Plate
3	205556	Mounting Bracket
4	205557	Optional Side Sensor Bracket
5	202390M	Cam Follower Nut
6	205553-WWWxLLL	Lift and Rotate Plate
7	205568-WWW	Mounting Tube
8	450226SSP	Sleeve
9	804-724	Non-Cushioned Stop Assembly
	804-725	Cushioned Stop Assembly
10	804-771	Rotating Actuator
11	807-2555	Set Screw, M8-1.25 x 10 mm
12	807-2640	Set Screw, 5/16"
13	807-2641	Bumper
14	807-2652	Bumper
15	808-020	Magnet
16	810-535	Flow Control Valve
17	810-529	Elbow Fitting
18	205508	Spring Tee Nut
19	835-150	Bearing
20	835-152	Rod
21	835-153	Cylinder
22	835-151	Shock
23	835-022	Guarding Kit
24	910816M	Button Head Screw, M8-1.25 x 16 mm
25	920620M	Socket Head Screw, M6-1.00 x 20 mm
26	920625M	Socket Head Screw, M6-1.00 x 25 mm
27	920816M	Socket Head Screw, M8-1.25 x 16 mm
28	920830M	Socket Head Screw, M8-1.25 x 30 mm
29	920845M	Socket Head Screw, M8-1.25 x 45 mm
30	920850M	Socket Head Screw, M8-1.25 x 50 mm
31	921045M	Socket Head Screw, M10-1.50 x 45 mm
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLL = Pallet length reference: 160, 240, 320, 400, 480		

Service Parts

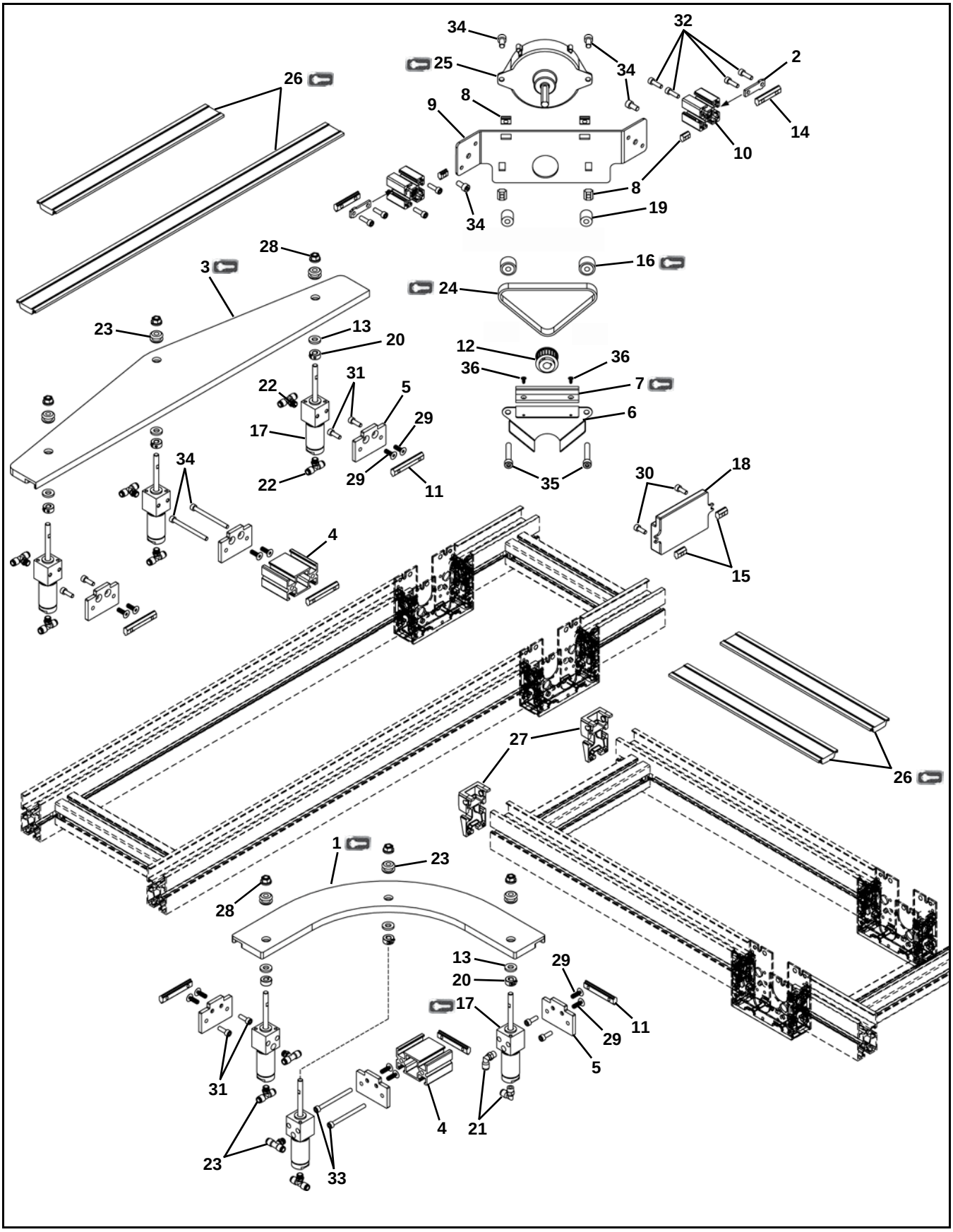
90° Corner



Item	Part Number	Description
1	202390M	Cam Follower Nut
2	204537	Key Bar for 320, 400 & 480 widths only
3	205176	Corner Guide
4	205179	Stud
5	205186	Guard
	206655	Guard for 480 width only
6	205564	Cover
7	206652	Wearstrip
	206653	Wearstrip for 480 width only
8	205177-1.5	Support Tube 1.5"
9	205177-4	Support Tube 4.0"
10	205185-LH	Left Hand Angle Bar
	205185-RH	Right Hand Angle Bar
	206654-LH	Left Hand Angle Bar for 480 width only
	206654-RH	Right Hand Angle Bar for 480 width only
11	205562-WWW	Rail Extension for 320, 400 & 480 widths only
12	300150M	Drop-In Tee Bar
13	450556P	Pulley, 5MMP x 15MMW x 22T
14	639717M	Drop-In Tee Bar 1.25" for 320, 400 & 480 widths only
15	639971M	Single Drop-In Tee Bar
16	802-046	Cam Follower Bearing
17	805-1644	Drive Control
18	807-2296	Spacer
19	807-2637	Hex Nut
20	814-100	Timing Belt, 5 x 400 mm
	814-428	Timing Belt, 5 x 890 mm for 480 width only
21	826-773	Motor
22	835-002-LLLLL	Lowside Bedplate
23	835-126	Lowside Tail Assembly
24	9206110M	Socket Head Screw, M6-1.00 x 110 mm
25	920616M	Socket Head Screw, M6-1.00 x 16 mm
26	920620M	Socket Head Screw, M6-1.00 x 20 mm
27	920655M	Socket Head Screw, M6-1.00 x 55 mm
28	920816M	Socket Head Screw, M8-1.25 x 16 mm
29	920850M	Socket Head Screw, M8-1.25 x 50 mm
30	991409M	Jam Nut
31	807-2693	Flat Head Screw M8-18
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLLLL = Part length in inches with 2 decimal places.		
Length Example: Length = 95.25" LLLLL = 09525		

Service Parts

90° Corner and Merge



Item	Part Number	Description
1	205176	Corner Guide
2	204537	Key Bar for 320, 400 & 480 widths only
3	205178	Straight Guide
4	205180	Spacer
5	205181	Mounting Plate
6	205186	Guard
	206655	Guard for 480 width only
7	206652	Wearstrip
	206653	Wearstrip for 480 width only
8	202390M	Cam Follower Nut
9	205185-LH	Left Hand Angle Bar
	205185-RH	Right Hand Angle Bar
	206654-LH	Left Hand Angle Bar for 480 width only
	206654-RH	Right Hand Angle Bar for 480 width only
10	205562-WWW	Rail Extension for 320, 400 & 480 widths only
11	300150M	Drop-In Tee Bar
12	450556P	Pulley, 5MMP x 15MMW x 22T
13	605280P	Washer
14	639717M	Drop-In Tee Bar 1.25" for 320, 400 & 480 widths only
15	639971M	Single Drop-In Tee Bar
16	802-046	Cam Follower Bearing
17	804-768	Cylinder
18	805-1644	Drive Control
19	807-2296	Spacer
20	807-2638	Clamp Collar
21	810-222	Male Elbow
22	810-533	Male Tee Branch
23	812-087	Grommet
24	814-100	Timing Belt, 5 x 400 mm
	814-428	Timing Belt, 5 x 890 mm for 480 width only
25	826-773	Motor
26	835-002-LLLLL	Lowside Bedplate
27	835-126	Lowside Tail Assembly
28	910-321	Flange Lock Nut
29	918-161	Flat Head Cap Screw, 1/4-28 x .75"
30	920616M	Socket Head Screw, M6-1.00 x 16 mm
31	920618M	Socket Head Screw, M6-1.00 x 18 mm
32	920620M	Socket Head Screw, M6-1.00 x 20 mm
33	920675M	Socket Head Screw, M6-1.00 x 75 mm
34	920816M	Socket Head Screw, M8-1.25 x 16 mm
35	920850M	Socket Head Screw, M8-1.25 x 50 mm
36	807-2693	Flat Head Screw M8-18
WWW = Pallet width reference: 160, 240, 320, 400, 480		
LLLLL = Part length in inches with 2 decimal places.		
Length Example: Length = 95.25" LLLLL = 09525		

Return Policy

Returns must have prior written factory authorization or they will not be accepted. Items that are returned to Dorner without authorization will not be credited nor returned to the original sender. When calling for authorization, please have the following information ready for the Dorner factory representative or your local distributor:

1. Name and address of customer.
2. Dorner part number(s) of item(s) being returned.
3. Reason for return.
4. Customer's original order number used when ordering the item(s).
5. Dorner or distributor invoice number (if available, part serial number).

A representative will discuss action to be taken on the returned items and provide a Returned Goods Authorization (RMA) number for reference. RMA will automatically close 30 days after being issued. To get credit, items must be new and undamaged. There will be a return charge on all items returned for credit, where Dorner was not at fault. It is the customer's responsibility to prevent damage during return shipping. Damaged or modified items will not be accepted. The customer is responsible for return freight.

<table>
<tr><th></th><th colspan="8">Product Type</th></tr>
<tr><th></th><th colspan="7">Standard Products</th><th>Engineered to order parts</th></tr>
<tr><th>Product Line</th><th>Conveyors</th><th>Gearmotors & Mounting Packages</th><th>Support Stands</th><th>Accessories</th><th>Spare Parts (non-belt)</th><th>Spare Belts - Standard Flat Fabric</th><th>Spare Belts - Cleated & Specialty Fabric</th><th>Spare Belts - Plastic Chain</th><th>All equipment and parts</th></tr>
<tr><td>1100</td><td colspan="6" rowspan="14">30% return fee for all products except:
50% return fee for conveyors with modular belt, cleated belt or specialty belts</td><td colspan="2" rowspan="15">non-returnable</td><td rowspan="15">case-by-case</td></tr>
<tr><td>2200</td></tr>
<tr><td>2200 Modular Belt</td></tr>
<tr><td>2200 Precision Move</td></tr>
<tr><td>2300</td></tr>
<tr><td>2300 Modular Belt</td></tr>
<tr><td>3200</td></tr>
<tr><td>3200 LPZ</td></tr>
<tr><td>3200 Precision Move</td></tr>
<tr><td>4100</td></tr>
<tr><td>5200</td></tr>
<tr><td>5300</td></tr>
<tr><td>6200</td></tr>
<tr><td>Controls</td></tr>
<tr><td>7200 / 7300</td><td colspan="6">50% return fee for all products</td></tr>
<tr><td>7350</td><td colspan="9" rowspan="4">non-returnable</td></tr>
<tr><td>7360</td></tr>
<tr><td>7400</td></tr>
<tr><td>7600</td></tr>
</table>

Returns will not be accepted after 60 days from original invoice date. The return charge covers inspection, cleaning, disassembly, disposal and reissuing of components to inventory. If a replacement is needed prior to evaluation of returned item, a purchase order must be issued. Credit (if any) is issued only after return and evaluation is complete.

Dorner has representatives throughout the world. Contact Dorner for the name of your local representative. Our Customer Service Team will gladly help with your questions on Dorner products.

For a copy of Dorner's Warranty, contact factory, distributor, service center or visit our website at www.dorner.com.

For replacement parts, contact an authorized Dorner Service Center or the factory.

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