

PLR:

The Pneumatic Lift and Rotate

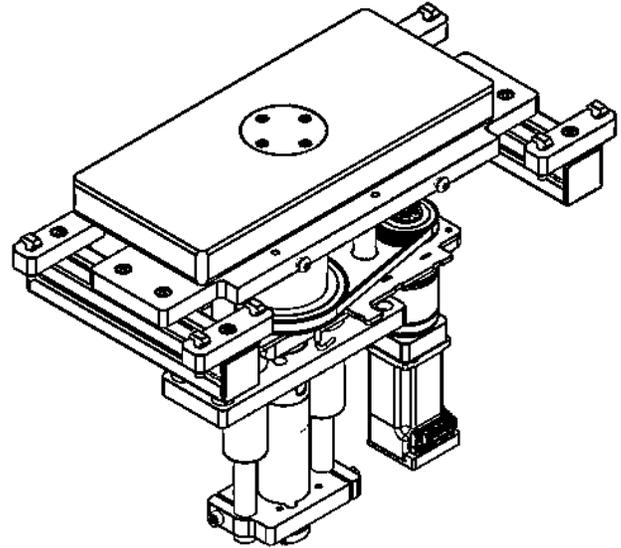
The Device:

The Pneumatic Lift and Rotate Unit (PLR) is the second generation of the Lift and Rotate Unit (LRU) designed to turn pallets 90° or 180° in a clockwise or counterclockwise direction. The unit operates through the use of pneumatics (lift portion) and a servo motor (rotating portion) for smooth rotational motion and acceleration. The servo motor is completely customizable for special applications that demand continuous rotational motion, such as winding operations or visual inspection requiring multiple view angles. It can also act as a lift-and-bypass unit, lifting pallets and placing them on a shelf so other pallets can pass through.

The PLR can be conveyor mounted or station mounted. The unit is outfitted with a 5mm proximity sensor to engage a built-in homing routine (P-00320). The default operation of the unit allows the PLR to home to its original setup position. Guarding for the bottom actuator and motor is available.

Basic Order of Operation:

1. Pallet is conveyed to device
2. Pallet is stopped directly over device by stop (not included)
3. Lift actuates and rises, with the top plate engaging the Work Piece Pallet's internal bumpers
4. Lift runs to end of stroke
5. Rotation initiates to final location.
6. Lift Deactivates and lowers, disengaging plate from pallet
7. Pallet Stop Drops
8. Pallet Conveyed out of work area



Part Number:

PLR-(A)-(B)-(C)-(D)

- A = Pallet Width Range 160mm to 1040mm
- B = Pallet Length Range 160mm to 1040mm
- C = **CM** for Conveyor Mounted, **SM** for Station Mount
- D = **G** for Guarded, **-blank-** for No Guard

Technical Specifications:

| | |
|------------------------------|-----------------------------------|
| Lift range: | 1.5mm to 40mm. |
| Lift height fine adjustment: | +/- 10mm |
| Lift cylinder bore: | 40mm |
| Lift capacity: | 150 Lbs. @ 80 psi. |
| Pallet length range: | 160mm to 1040mm in 1mm increments |
| Pallet width range: | 160mm to 1040mm in 1mm increments |
| Pneumatic ports: | ¼ NPT |

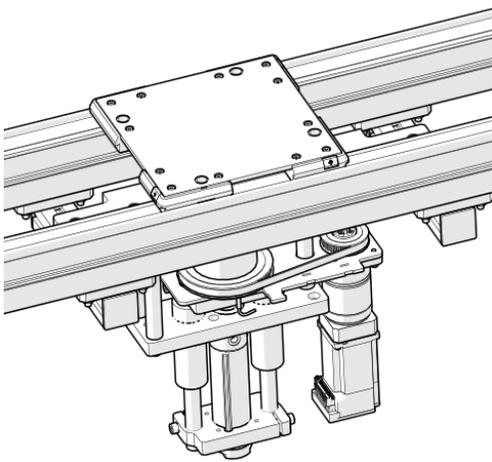


Figure 1

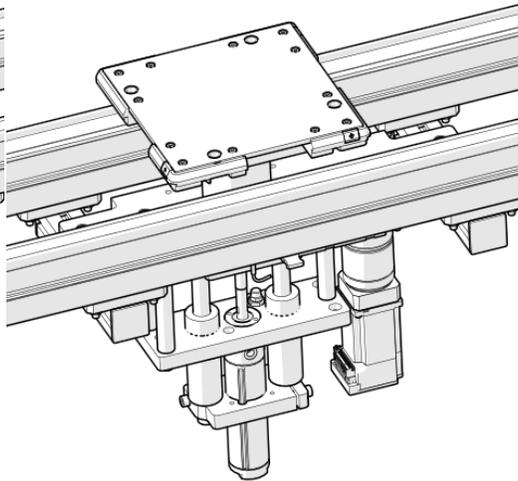


Figure 2

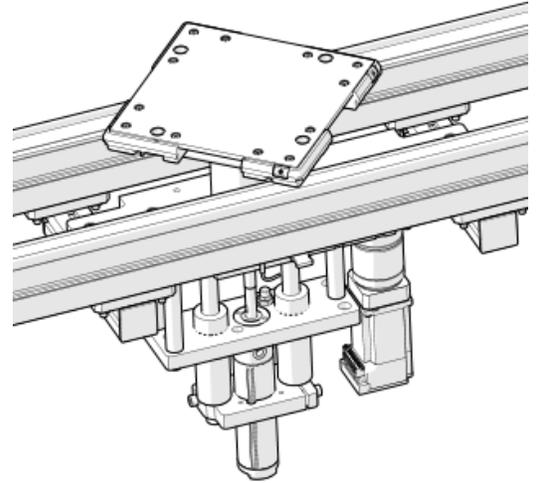


Figure 3

Pallet is conveyed to PLR, lifted, and then rotated to the desired orientation

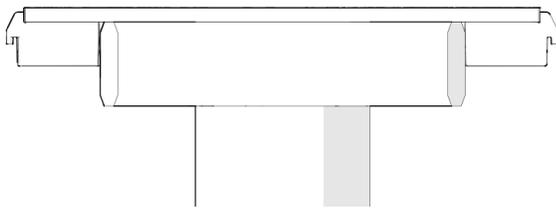


Figure 4: Rotator top plate engages between the inside of pallet bumpers

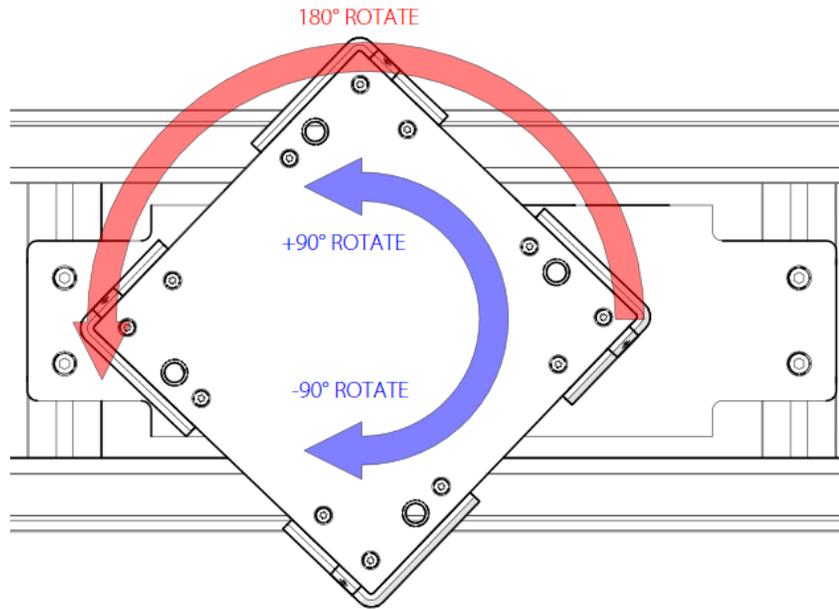


Figure 5: Basic rotate operations

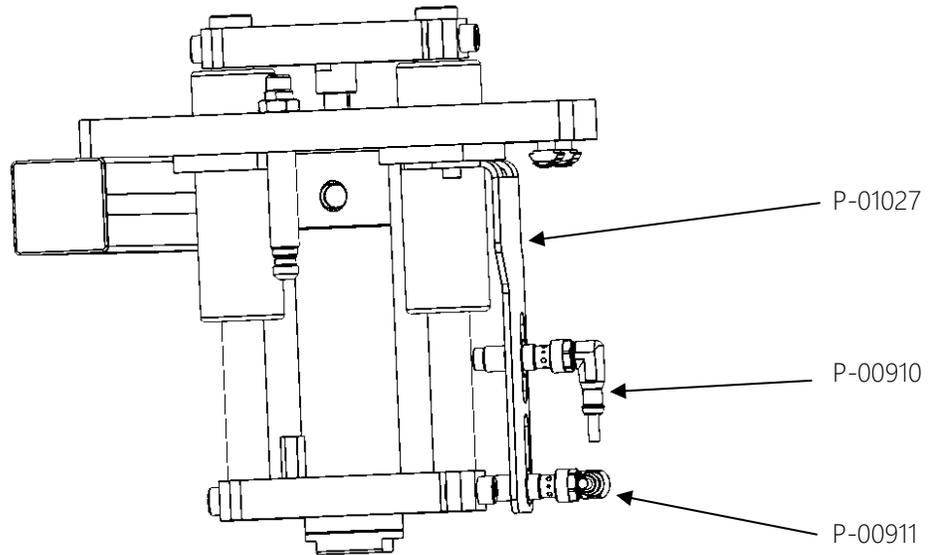
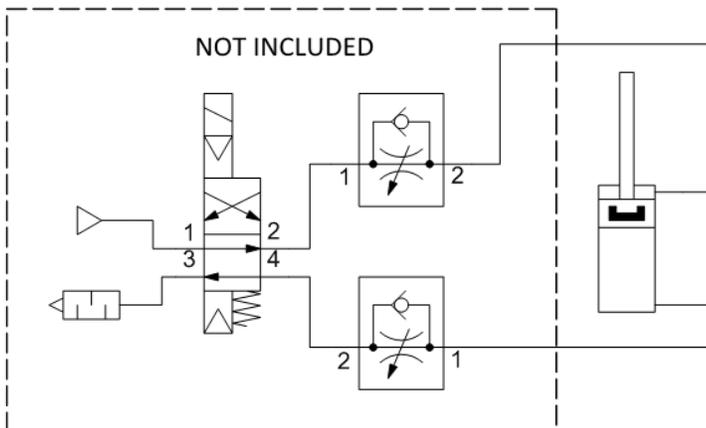


Figure 6: PLR showing P-01027 Sensor bracket with sensors (see Recommended Sensor Brackets for more info).

Recommended Pneumatic Schematic:

*Fittings and Valves not included



Recommended Sensor Brackets:

4" stroke cylinder or when stroke = 40mm
 – use bracket P-01027

Recommended Sensor Package:

IFS298 (P-00911) – Inductive sensor K1,
 12mm diameter, 8mm nonflush range,
 3wire DC PNP, N.O, QD
 IFM EVC004 (P-00910) – IFM electronic,
 cordset, M12 Female R/A, 4 Wire, 5 Pin,
 2m, PUR, Black