

# Technical Bulletin

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TO: Internal Distribution  
Regional Market Managers  
Regional Service Managers  
Field Service Technicians  
Field Sales Representatives

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## PA/5000 Mechanical Design Enhancements

This technical bulletin reviews five design enhancements recently integrated into the PA/5000:

- Mechanical Air Valve for Rewind Motor
- Dancer Wheel Extension Spring
- Solid Supply Hub Clip
- Aluminum Rewind Disk
- Igus Tamp Cylinder Cables

### Current Mechanical Design Enhancements

#### Mechanical Air Valve

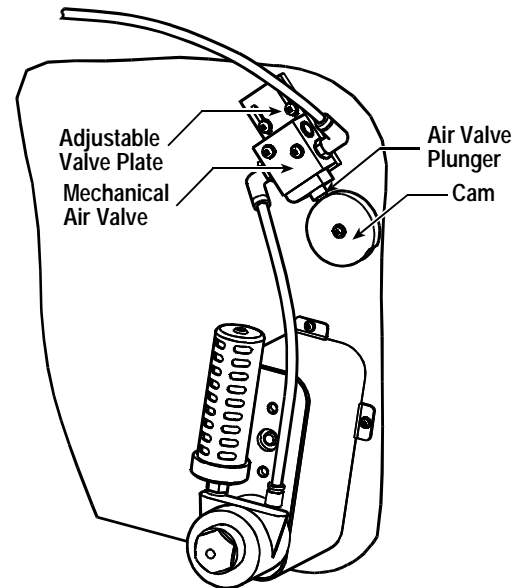
##### *Description*

The air supply to the air motor now includes a mechanical air valve/cam mechanism between the pneumatics box and the air motor. The air valve/cam mechanism varies the speed of the rewind hub by dynamically adjusting the amount of airflow supplied to the rewind motor.

As label liner tension varies, the dancer arm rotates the cam adjacent to the air valve. The cam applies pressure to the air valve, which changes the amount of airflow to the air motor. The change in airflow results in a change in the speed of the air motor. Dynamically varying the speed of the air motor provides a smooth and consistent rotation of the rewind hub.

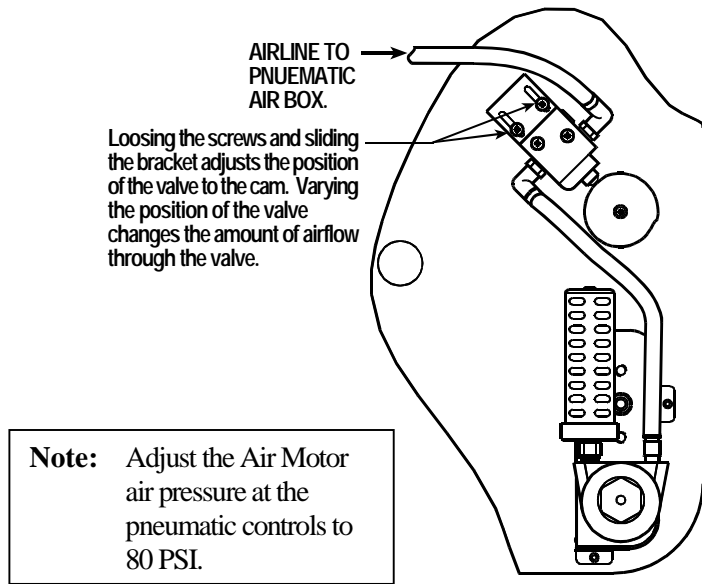
##### *Valve/Cam Adjustments*

The range of airflow through the air valve is critical for achieving a smooth and consistent rotation of the rewind hub. The position of the valve relative to the cam determines the range of the airflow to the air motor. During normal operation, the airflow ranges from zero to 6.5 cfm.



Use the following procedure to adjust the position of the air motor.

1. Place an inline flow meter on the airline between the pneumatics box and the air valve.
2. Supply air to the motor by using the "Diagnostics Tool" accessed through the PA/5000 ECM Keypad.
3. Measure the amount of airflow through the valve. The measured airflow should range from close to zero (no-flow) at the upper position to 6.5 cfm at the lower position.
4. Adjust the engagement of the cam and valve by loosening the screws and sliding the valve away from or towards the cam.



### ***Dancer Arm Spring Position***

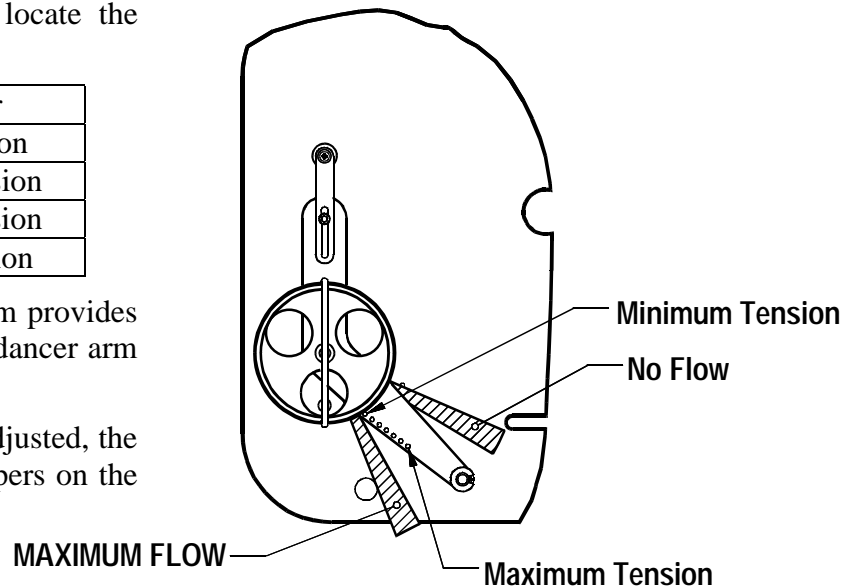
The location of the dancer arm spring compensates for the effects of gravity in varying application orientations. Adjust the position of the dancer arm spring depending on the orientation of the PA/5000.

Use the following table and properly locate the Dancer Arm Spring.

Application Orientation	Set Spring for
Up Right (Top Down)	Lowest Tension
Side Apply	Medium Tension
Nose Up	Medium Tension
Nose Down	Highest Tension

**Note:** The new design of the dancer arm provides several holes for fine-tuning the dancer arm tension.

With the air valve and spring properly adjusted, the dancer arm floats between the two bumpers on the baseplate.



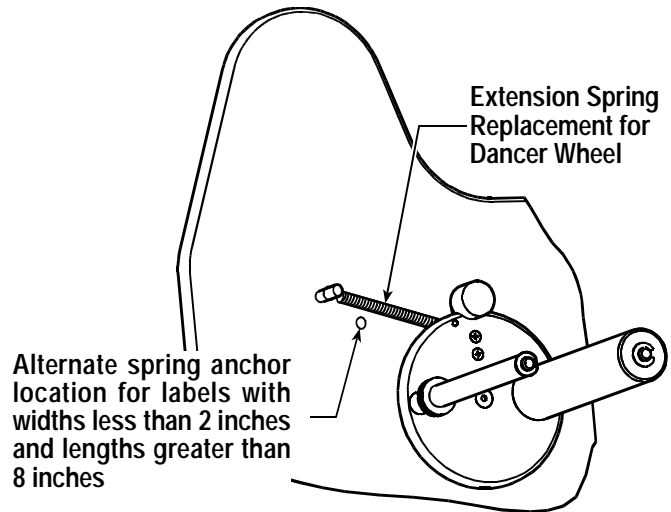
## Dancer Wheel Extension Spring

### *Description*

An extension spring has replaced the torsion spring, which returned the dancer wheel and provided a brake for the label supply roll. For easier maintenance access, the new spring is located on the front side of the base plate.

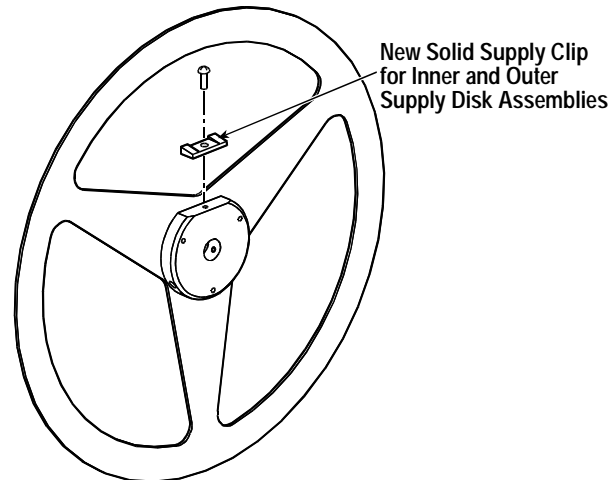
### *Spring Setting*

The new design includes two holes on the baseplate for locating the spring anchor. The default location is the upper hole. Use the lower hole for labels less than 2 inches wide and greater than 8 inches long.



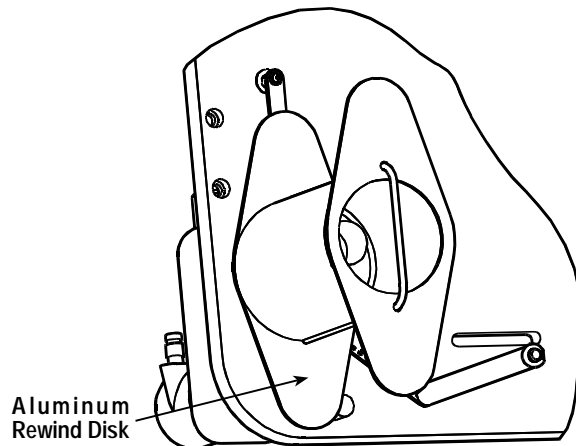
## Solid Supply Hub Clip

The Supply Hub Clip (6150-450) design has changed from a stamped sheet metal profile to a solid aluminum piece with ramped edges. The new design provides for a tight and secure fit. The new design is not susceptible to bending or breaking. Both the inner and outer supply disk assemblies use the new style of clip.



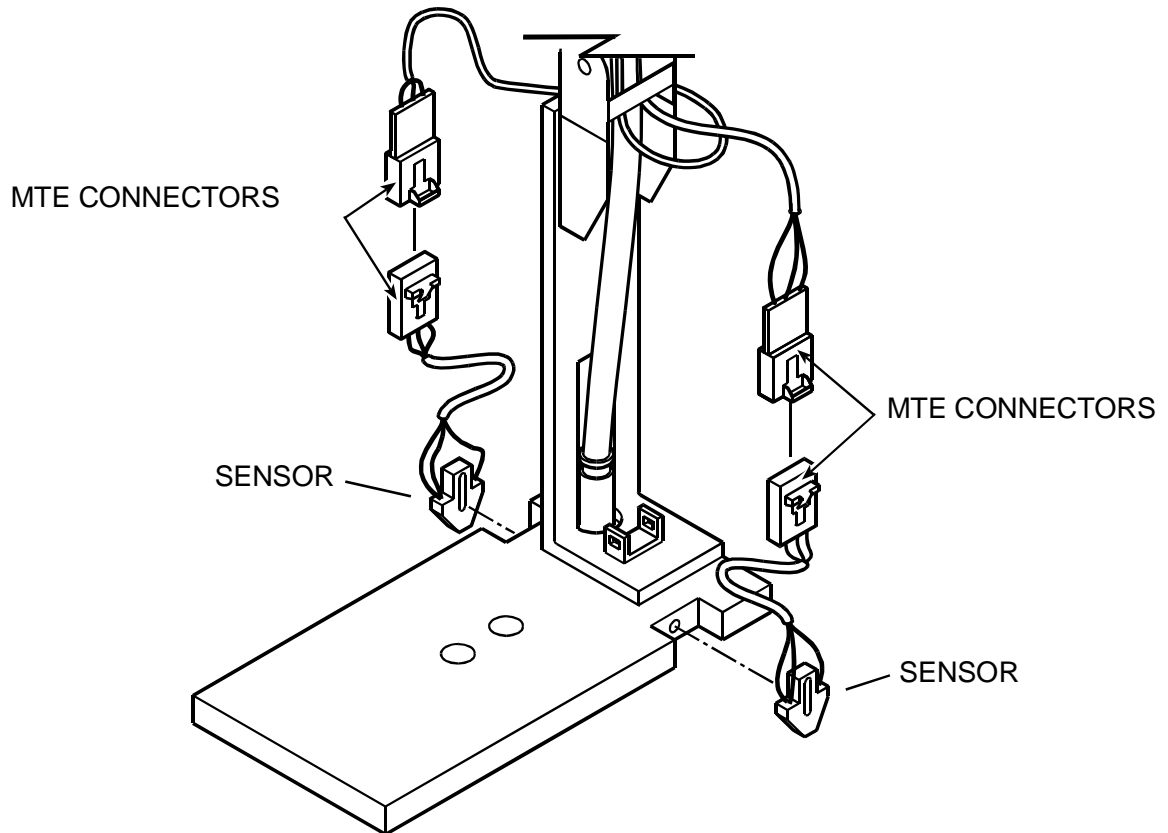
## Aluminum Rewind Disk

The material used to make the Rewind Disk (6150-346) has changed from lexan to aluminum. This material change gives the Rewind Disk more strength and stiffness, reduces the amount of bending associated with side-apply applications.



# Future Mechanical Design Enhancements

## Tamp Cylinder Cable



The tamp-cylinder assembly with the igus E-Chain design has been enhanced to increase the life of the sensor wires. This new design uses sensor wires designed for flexing and bending applications.

The label present and auto-retract sensor cables now have MTE connectors for easier replacement of sensors.

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