

# Piper Arrow II Landing Gear System Operation Overview



# Landing Gear System Switches and Indicators



**WARN  
GEAR  
UNSAFE**

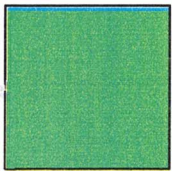
Throttle  
Position

Panel Light  
Dimmer switch

Gear Up/Down  
Switch

**AUTO  
EXT  
OFF**

25 5  
LANDING GEAR  
PUMP LIGHTS

  
Gear down and  
locked lights

# Power & Lights

- Hydraulically operated, up and down. Hydraulic pressure holds gear up (there are no gear up-locks)
- For emergency extension, hydraulic pressure holding gear up is “dumped” to allow gear to freefall to extended position.
- Lights
  - Three green light means all gear are down and locked
  - No lights means gear retracted
    - Or in daylight with the panel lights on, the gear lights will be too dim to see.
  - Yellow “Auto Extend Off” light on panel – Blinks on & off when Auto Extend System is in override or “Off”
  - Red “Warn Gear Unsafe” light on panel
    - Will light during normal gear retraction and extension to indicate gear is in transit.
  - If one green down and locked light is out, try switching bulbs.

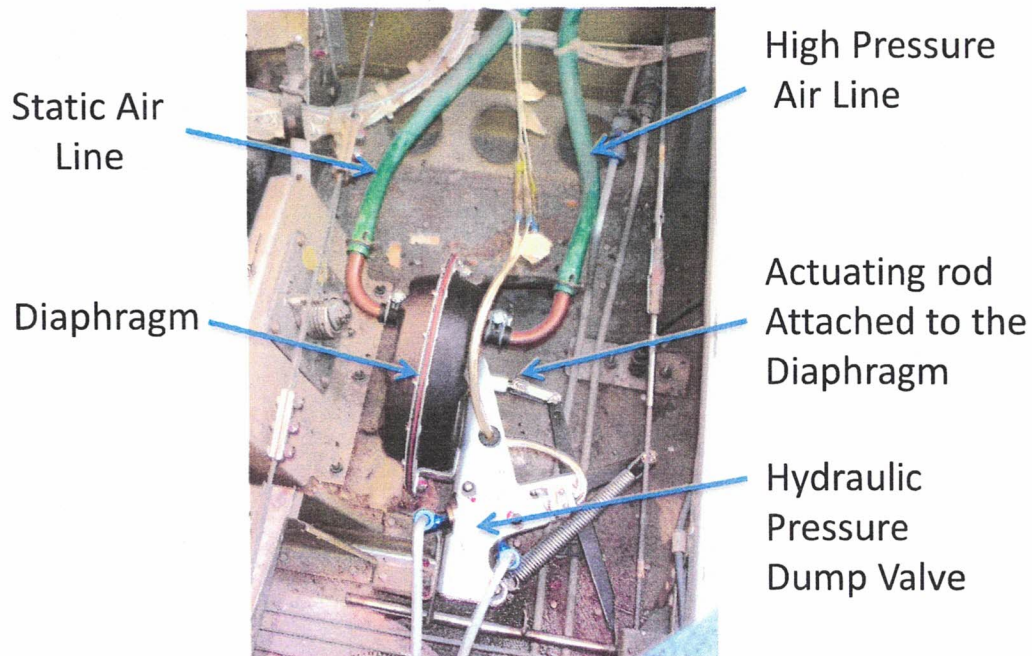
# Normal Retraction & Extension

- Retraction
  - Do not retract above 109 KIAS
  - Takes about 7 seconds
  - Red “Warn Gear Unsafe” light should illuminate while gear is in transit. Light goes out when gear fully retracted
- Extension
  - Not above 130 KIAS for normal extension
  - Takes about 7 seconds to extend
  - Extended gear acts as speed brakes
  - Glide ratio seriously decreased with gear extended

# Automatic Gear Extension System

- Designed to automatically extend gear when power is reduced and air speed is at or below approx 87 KIAS (unless system is turned off with override lever)
- Triggered by differential air pressure sensed by high pressure/static source mast on left side of fuselage and a diaphragm activated mechanism.

**Note:** *This mast is also heated when the Pitot heat switch is on to prevent icing. Icing would restrict pressure port causing the system to think aircraft speed is low and gear would automatically extend.*

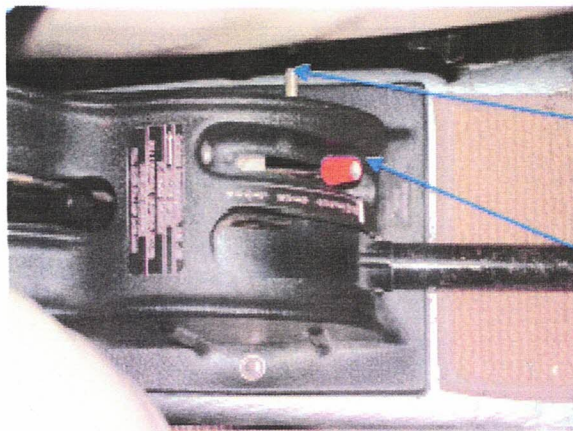


System located under Passenger Seats



# Manual Emergency Extension

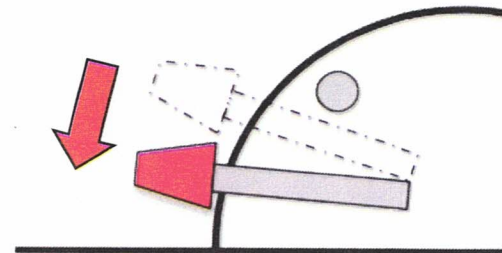
- Emergency gear “dump” by pushing red lever down to release hydraulic pressure after slowing to < 87 knots. Nose gear is helped down against airflow with a spring.
  - *Note: If Auto extend is in lockout Position, lift red lever slightly to allow lockout pin to slide out and then the lever can be pushed all the way down*
- Yaw plane if needed to get down and locked green lights for main gear



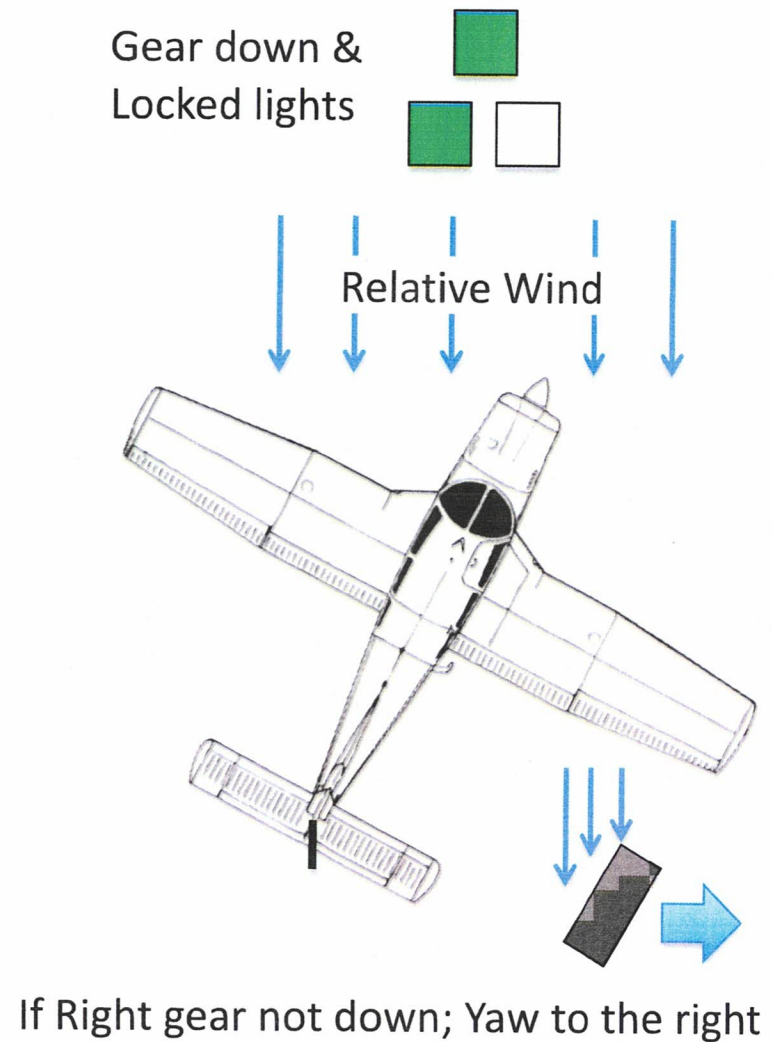
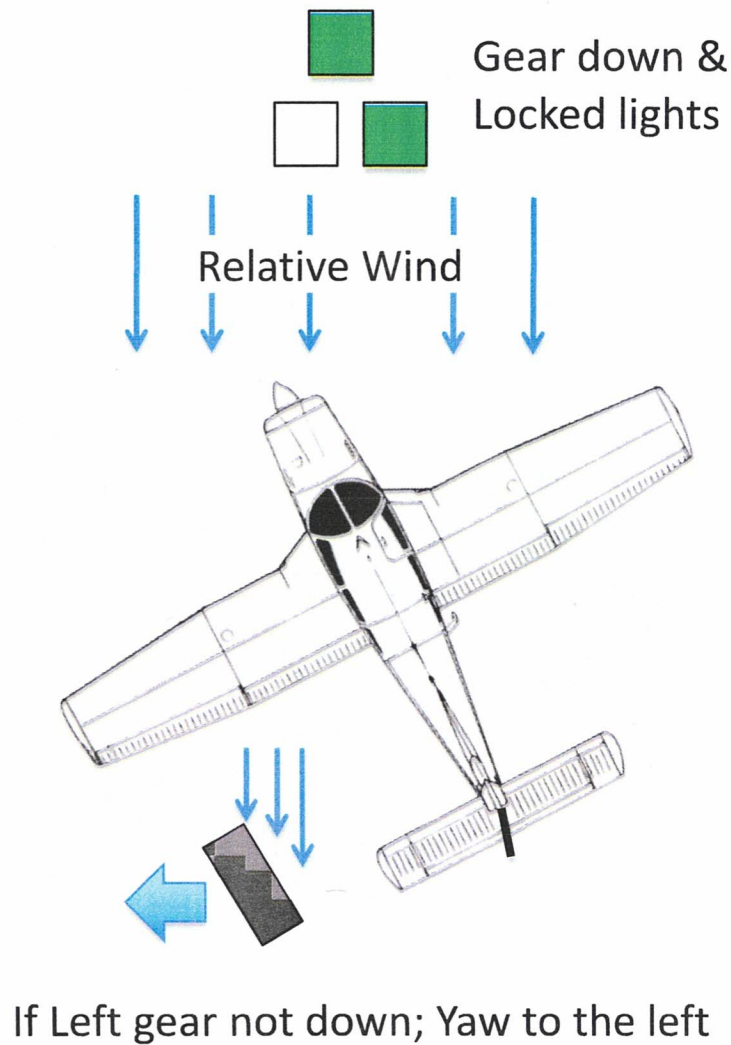
Auto Extension  
Lockout Pin

Emergency Gear  
Lever

Push Lever Down for Manual  
Emergency Gear Extension



# YAW Aircraft to help move gear down to down and locked position



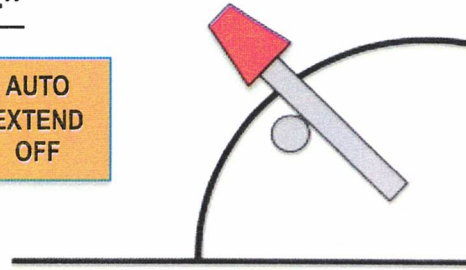
# 3 Positions for Override/Emergency Lever

## Auto-Extend Override or "OFF"

**Position** – Held up by Auto-Extend Lockout Pin.

"AUTO EXTEND OFF" light will blink on and off when lever is in override position

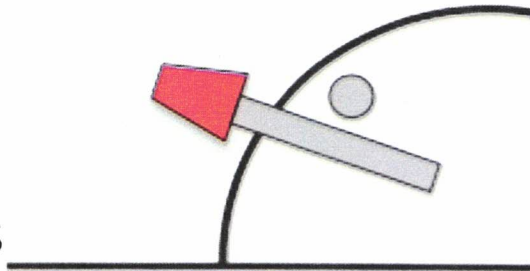
AUTO  
EXTEND  
OFF



Use position for take-off, practicing stalls, Or if engine out to improve glide ratio

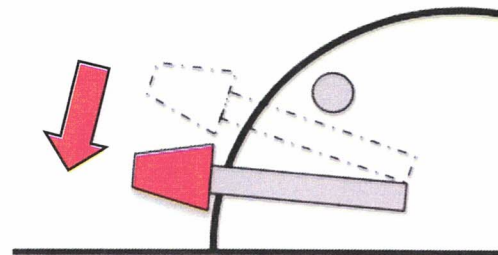
## Auto-Extend "On" Position.

Gear will automatically come down when airspeed decreases to approx 87 KAIS



Use position when in cruise flight to provide auto-gear extend capability

Push Down for Manual Emergency Gear Extension  
Below 87 KAIS



Use manual gear extension to extend gear if auto extend fails to lower gear.

# Override Gear Extension System When

- Taking off (otherwise gear does not want to come up during normal climb out speeds)
- For maximum glide in an engine out situation
- Practicing stalls with gear up
- Best practice is to remove the override and activate the automatic extension system once set-up in cruise and leave it on when entering the traffic pattern and landing
- If doing touch and goes, once you lower the gear for landing, put the lever in override position so you can raise the gear when you want after touch and go.

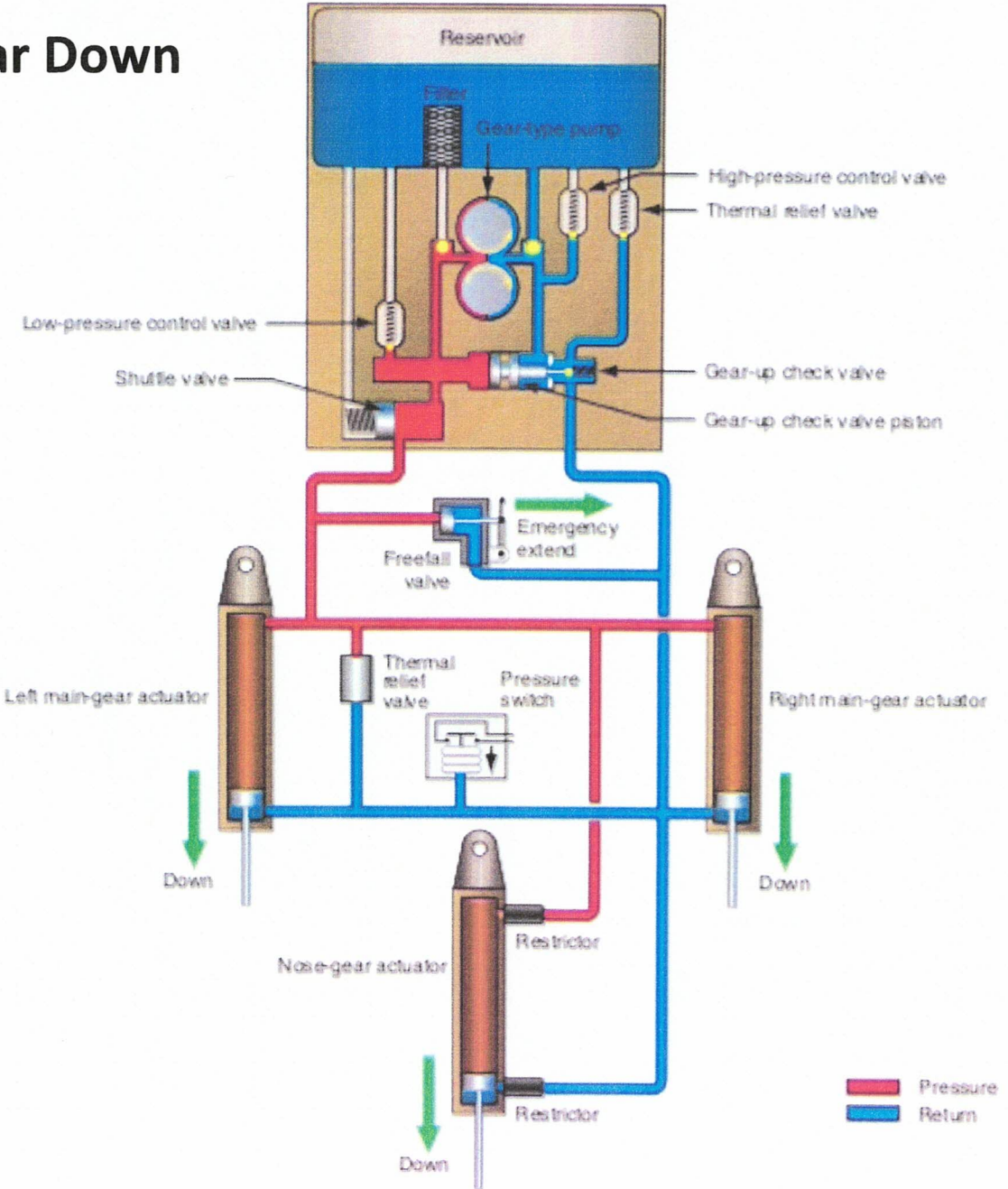
# Landing Gear Warning System

- Steady horn and red “Warn Gear Unsafe” light comes on during the following conditions:
  - Gear is up and power is very low; approx 14” of MP
  - Auto extender system puts the gear down and the gear handle is still raised
  - Gear handle is raised when the plane is on the ground

# Other Things to Know

- The gear is held up with hydraulic pressure. If in cruise you hear/feel the hydraulic pump come on, this is usually an indication there is a small leak in hydraulic system which lets the hydraulic pressure drop. The pressure switch will automatically turn the pump on to bring hydraulic pressure back to the specified amount.
- Contact maintenance after flight to troubleshoot the system if you hear/feel the hydraulic pump come on during cruise.

# Gear Down



# Gear UP

