BluDot Brake Actuation System

Theory of Operation
and
Installation

BluDot
What is it?

- A brake actuation system
- NOT an air brake system – it is air *over* hydraulics
- Works on trailers with hydraulic brakes
- Converts tractor air pressure to hydraulic pressure at a constant and proportionate ratio
- Is a similar braking system to what semi-trailers use

BluDot
Why use it?

- It is "perfectly" proportional – it is as if there is only ONE unit
- The entire system is simpler than electric/hydraulic systems
- It uses DOT-certified components tested over billions of miles in commercial operation
- There is NO brake controller – it uses the tractor air system
- There is no electrical or mechanical pickup to supply brake controller signal
- Your tractor is *designed* around air systems
- There is NO electrical connection or conversion
- There are no plugs to go bad (electrically)
- There is no hydraulic pump to "spool up" before brakes actuate, so less delay

BluDot
Cons….

- You have airlines running between truck/trailer
- You **must have** a vehicle with air brakes tow the trailer
- You truck will not have a conventional controller to tow other trailers (unless you add one)
- Resale of trailer may be affected (requires air)
- Some manufacturers will not install (no skills)
- It ***may*** be more expensive because of installation costs

BluDot
How does it work?

- Service air and emergency air supplied via gladhands to trailer
- Service air is "signal" and provides proportioning
- Emergency air is stored in tank on trailer
- "Proportioning" valve takes air from tank at same level as service air and applies it to a brake can which drives a master cylinder
- Master cylinder mechanically converts air pressure to hydraulic line pressure and "amplifies" the pressure.
- Hydraulic pressure drives the brakes.

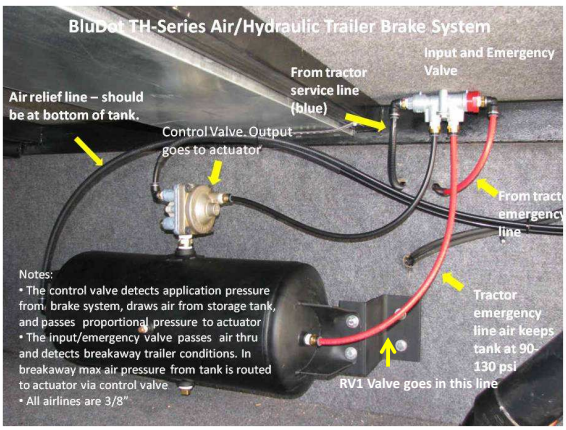
There is an emergency "breakaway" capability for air loss or disconnect

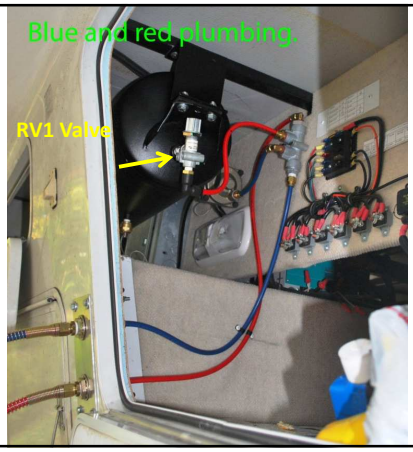
BluDot
Nuances and Enhancements

- Dexter brakes work with unmodified BluDot systems (high line pressures permissible)
- Kodiak brakes require lower line pressures – must use a reducing valve on tank (pressure around 90psi, RV1 valve)
- Relief valve/water drain valve must be added
- Recommend a tank pressure gauge
- Gladhand placement is "backward" from commercial operation (gladhands stay with trailer)
- **Installation is sensitive to proper brake bleeding**
- **Recommend DOT 4 brake fluid**

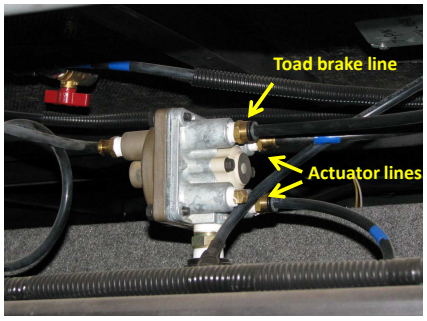
BluDot Components

Kodiak Modification Parts



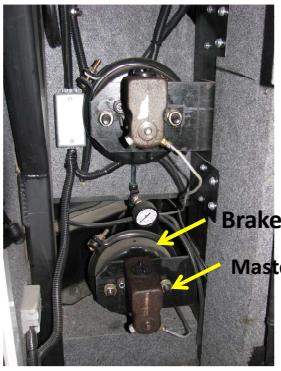


Control Valve
Dual Actuators and Toad Brake



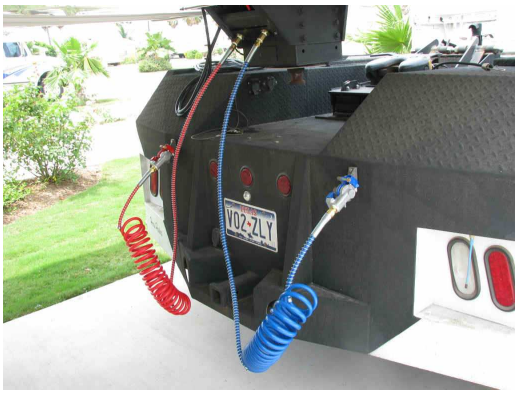
Dual Actuators

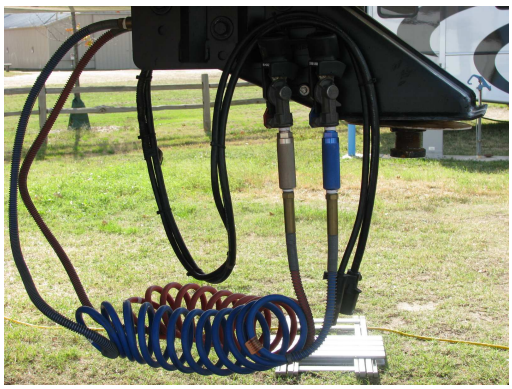
- Top actuator controls front axle
- Bottom actuator controls rear two axles



Gladhand and Coils Mounting

- This can be difficult on a retrofit
- Two methods: through gooseneck, or across "gap"
- Coils mount to trailer and "stay with" trailer. This is a cleaner install than commercial method.
- Location of fittings on truck
  - Together or spread
  - Use of angled fittings
- Protection when not connected






Air lines installed.


GPW 5000 lbs
GTW 32000 lbs


Angled Gladhand Fitting
Matching Gladhand for weather protection (w/quick connect)
TEXAS
SFY 213