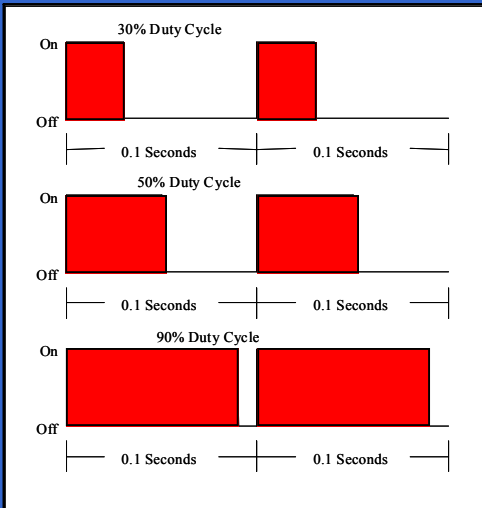
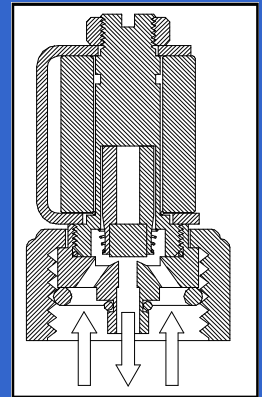


## PWM Spray Technology

is a  
**New System Design**  
Using Standard Tips

### Basic Operation:

PWM solenoid changes the operation duty cycle to change the effective tip or orifice size to maintain a set pressure or change a rate.

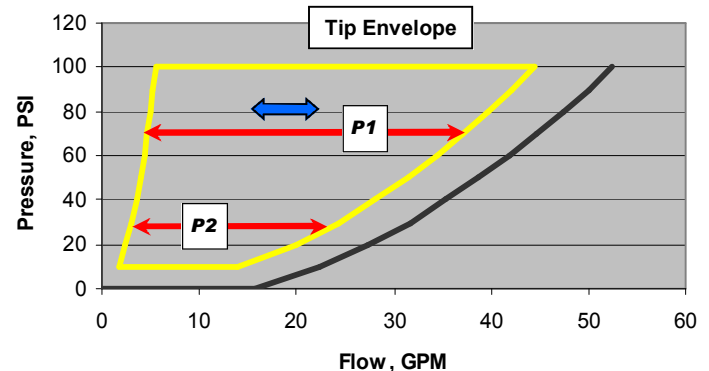


## **PWM Performance**

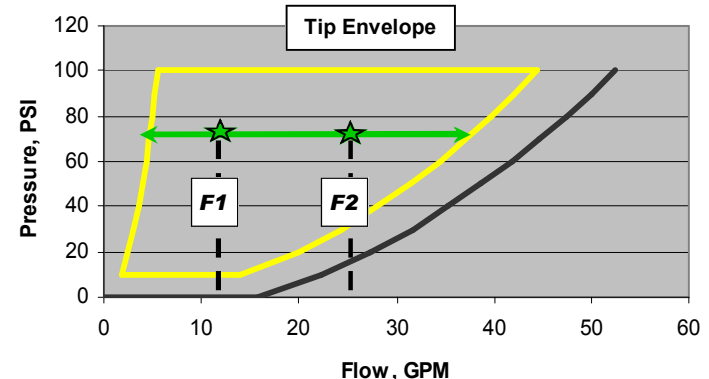
### Operates within a Tip Performance Envelope:

- **Larger** speed range than PC Needle
- **No reaction to speed changes**
  - ✓ Pressure remains constant
  - ✓ Flow changes to maintain constant rate
  - ✓ Droplet size is constant
- **Optimum coverage occurs over entire speed range with a single tip**
- **Selective "on-the-go" drift control**
  - ✓ Operator controlled pressure change P1 to P2
  - ✓ Droplet size follows pressure change
- **Consistent Application over entire speed range**
- **Variable rate capability with single tip**
  - ✓ With a constant pressure
  - ✓ Toggle between R1 and R2
  - ✓ Respond to a variable rate map
  - ✓ Uses standard tips

Blended Pulse Orifice Flow



Blended Pulse Orifice Flow

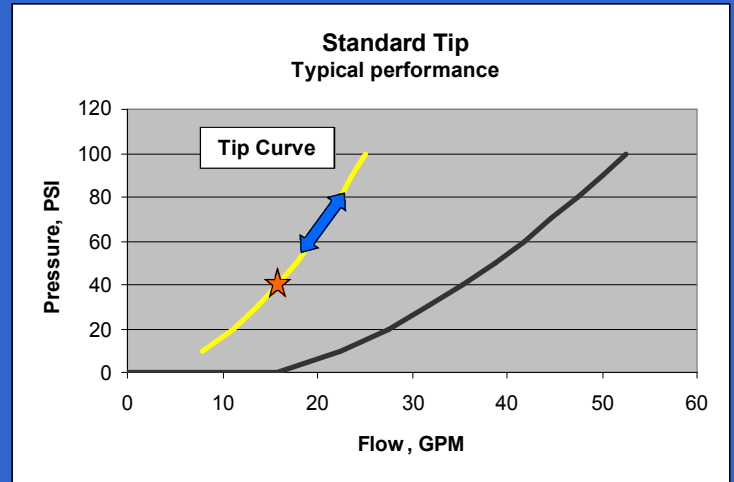


## The Pressure Compensated Needle Valve is a new Tip Design Using a Standard System Design

### **Standard Tip Performance**

#### Operates along a single Tip Curve:

- Limited speed range
- Reacts to speed changes
  - ✓ Creates large pressure variations
  - ✓ Creates large droplet variations
- Coverage optimum at a single speed, rate and pressure ★
- Drift potential inherent
- Tip change often needed



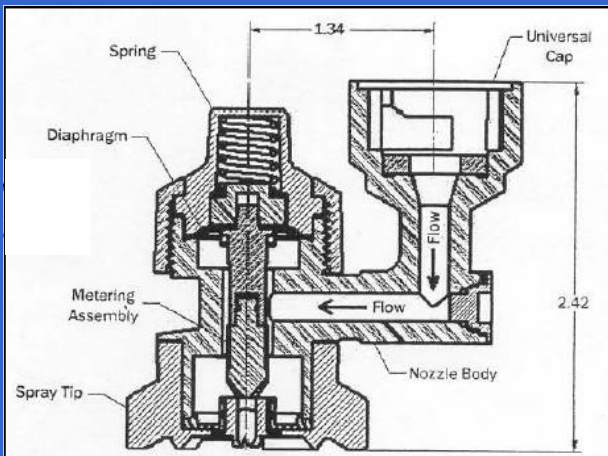
### **PC Needle Tip Performance**

#### Basic Operation:

Pressure change from a speed change moves a diaphragm. The diaphragm moves a plunger to change orifice size. The orifice size change limits pressure change at the tip. The pattern droplet spectrum is less.

#### Flatter Tip Performance Curve:

- Larger speed range than standard
- Reacts less to speed changes
  - ✓ Less pressure changes
  - ✓ Less droplet variation
- Still performs along a single Tip Curve
  - ✓ Pressure still varies with speed
  - ✓ Pressure still varies with flow
  - ✓ Droplet still varies with pressure
- Optimum coverage still at a single speed, rate and pressure ★
- Still has drift potential
- Still needs tip changes
- Still wears like a tip
  - ✓ Expensive
  - ✓ Annual replacement concern
  - ✓ Pressure range and performance decreases with wear



**Pressure Compensated Need Valve Tip**  
Typical performance

