**Failure Is Normal**
- Why Do We Test?
- Inexperienced Testers Be Ready.....
- Invest Time in Gaining Experience.

**Don’t Fear The Repair**
- Maintenance is Normal
- Repairs are Normal
- We are the Experts
- Communicate with the Customer

**Hit & Miss Method**
- Good seal between your palm and diaphragm.
- Quick strike.
- Compressed air forces diaphragm into place.

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**Backflow Repair & Troubleshooting Questions**

**#10**
- I am testing the Check Valve and the needle keeps falling to 0. Is there something wrong with my Gauge?

**#9**
- I am working on an Ames 4000SS relief valve. How do I get the diaphragm into the proper position?
Inverting Method

- Try inverting piston assembly on a flat surface.
- Good seal between the surface and diaphragm.
- Compressed air.

Consistent Pressure With Water

- Fill diaphragm with water.
- Good seal between your palm and diaphragm.
- Slowly press down.
- Water will not compress.

#8

- I am working on a Wilkins 975XL. #2 check disc is clean and test drops below 1 PSID.
- Should I stretch the spring to make it stronger?

Poppet Style Check Valves:

- Febco 825Y & 805Y
- Wilkins 975XL & 950XL
- Conbraco 40-200 & 40-100
- Check lid acts as a spring retainer and poppet guide.

Check Valve Guide:

- Don’t forget the guides.
- The guide surface is the recess hole in the lid and stem.
- Poppet should move freely.
- NO LUBRICANTS.

2nd Check Guide Problem

- Recess hole is not always centered.
- Try turning check lid counter-clockwise ¼ turn.
- Lid is o-ring sealed.
#7
- I am testing a Watts 909. Both checks fail and RV will not open.

What could be the Problem?

#6
- We installed a DCA on a fire line. The water authority informed us that a DCDA is required.

Can we just install a bypass assembly to make it a DCDA?

Creating A New Assembly:
- Manufacturer model & serial #’s.
- Can it Void approvals?
- Does the Manufacturer offer parts?
- Always check with the Water Authority first.

Adding A Metered Bypass:
- Low flows must be detected by the meter before the mainline checks open.
- You may have to change the check valves on mainline assembly.
- Approved meter and bypass device is important.

#5
- How Long Should Parts Last?

- Extreme Use
  - Hospitals
  - Manufacturing Facilities
  - Apartment Complexes

- Systems Change
How Is The Water Quality?

- Water Quality
  - Debris Issues
  - Chemicals

How Is The Environment?

- Exterior Environment
  - Hot Environments
  - Freeze Damage

- System Hydraulics
  - Backpressure
  - Water Hammer

I am repairing an Ames 2000SS. I have tried everything to unscrew the check valves and I can not get them to budge. What am I doing wrong?

Basics Of Removal:

- Cam Checks - used in 3000ss, 4000ss, 774, 994.
- Remove #1 CV first.
- Do not use cam arm to unscrew.
- Unscrew checks counter-clockwise by hand "if possible"

Basics Of Removal:

- If too tight, place a drift punch or long screwdriver in the holes on the outer edge of the check module.
- Tap with hammer in correct direction.

Special Tools:

- There are After Market tools available to help remove Cam Checks.
What Makes Removal Difficult?

- The stainless steel body can flex or twist if enough torque is applied to the piping system.
- This can cause the body to "egg-shape".

Solution:

- Try loosening the gate valve bolts to relieve the stress.
- Remember to install the new cam checks before you retighten the bolts.

#3

What is Testcock #1 Used For?

#2

The Assembly tests fine but it continues to discharge intermittently.

What is causing Intermittent Discharge from the Relief Valve?

Causes of Intermittent Discharge

- Pressure Fluctuations
  - Upstream
  - Downstream

- Is the Assembly working correctly?

How Do You Explain To The Customer?

- Pressure Fluctuations
- Back Pressure Problems
- Water Hammer

- Be Ready with Solutions
- Preventative Maintenance is Normal
We installed a rubber kit on an RPA. We reestablished pressure and now have a constant drip from the RV.

Is the something wrong with the RV? What should we do?

Don’t Panic…..Troubleshoot.

Installing new parts does not always mean your repair is complete.

Start troubleshooting.
Simulate flow.
Use your test gauge.

The Problem:

- Many times it is a fouled #1 check-not the RV.
- Water turbulence can cause debris to break loose.

The Solution:

- Clean and flush. (repeat if necessary).
- If debris is excessive, try pre-pressurizing the assembly.

Things To Remember:

- Always schedule more time than you think you will need.
- Relax and think.
- Rule out the most obvious problems first.