



# Knowing When to Stop

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A DIRECTOR'S GUIDE TO  
MAINTENANCE OF  
INSTRUMENTS

# What we will cover in this clinic

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An ounce of prevention is worth a pound of repairs

Why Won't it Play

Emergency repairs

Tools to have and use

# TRIGGER WARNING!!

You will be seeing images of instrument abuse, and they may be disturbing to some members of the audience.

View this presentation at your own risk

Additional triggers might occur when you realize that you, in fact, have perpetrated or been an accomplice to such atrocities.

# Stop the Problem before it begins

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WHAT YOU CAN DO TO MAKE YOUR LIFE EASIER AND MAKE YOUR  
STUDENTS SOUND BETTER



# A clean horn is a happy horn

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90% of other problems can be prevented  
by keeping instruments clean

Regular basic maintenance is the most  
important thing you can do

Provide your students time and  
materials to do this for you

Habits create effectiveness

When you take care of the little things,  
you save your money for the big things

# Before and After Cleanings.

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# Simple steps to keeping it clean

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## Daily:

- Oil Valves
- Swab Instrument
- Check if grease is needed
- Remove reed from mouthpiece
- Secure Mouthpiece
  - Prevent Dents
- Empty water keys

## Weekly:

- Clean mouthpieces
- Dedent brass mouthpieces
- Clean Leadpipe and Neck if Needed
- Wipe off finger prints
- Grease all corks
- Check For Stuck Top and Bottom Caps
- Grease all slides.
  - Check if slides are stuck

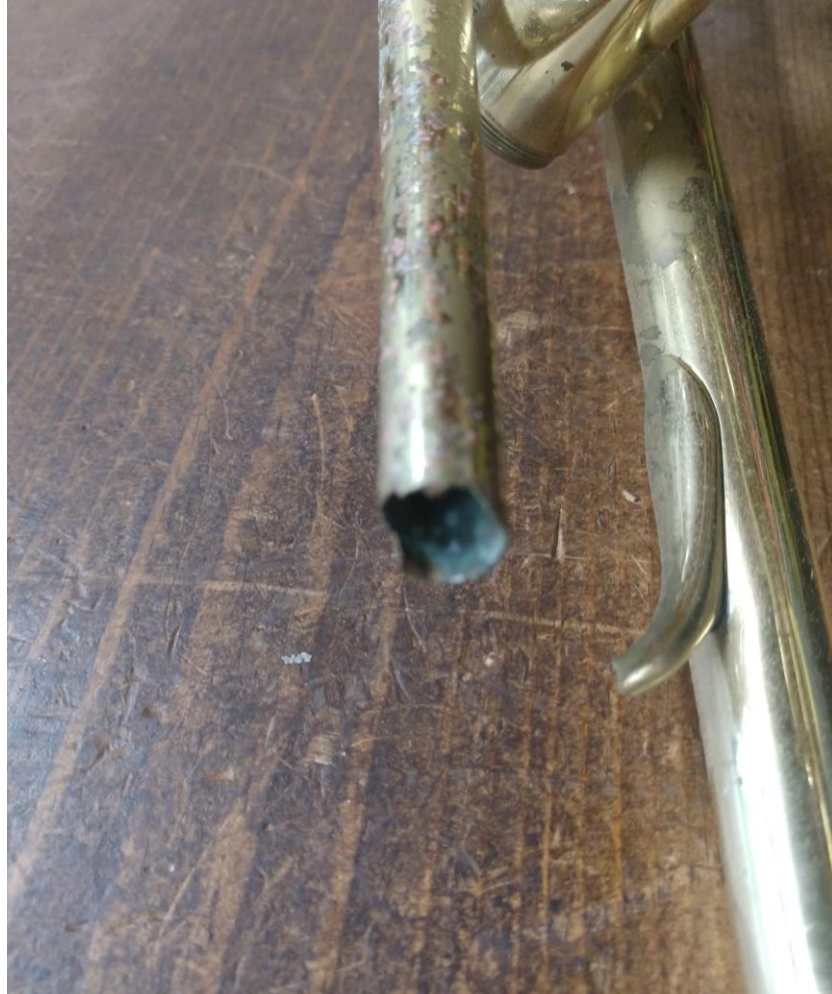
It's not THAT bad, is it?







The effects of not swabbing



Dezincification “Red Rot”

# Dedenting Mouthpieces.

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Rawhide Mallet

Mouthpiece Mandrel

Clean beforehand

Prevents Mouthpiece  
Getting Stuck



# Stuck Valve Caps.

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The Good  
News: Do it  
Yourself!



# Give your Students the time and tools.

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Don't rehearse all the way until the bell rings.

Let them know they can get a pass to the next class if possible

Rotate sections each week and give them 5 minutes on Friday to do weekly Maintenance

Have a classroom set of Cleaning supplies for each instrument they can check out.

Stock your Sink with the basics.

Check basic things during playing tests.

Give Extra Credit for showing you cleanings

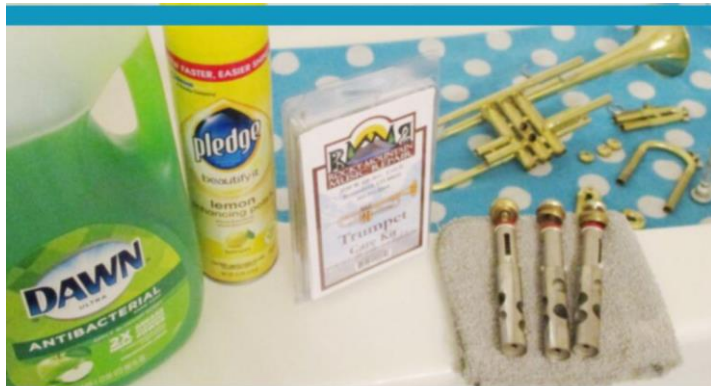
Make vacation assignments to get it cleaned.

# Resources for Cleaning/Maintenance

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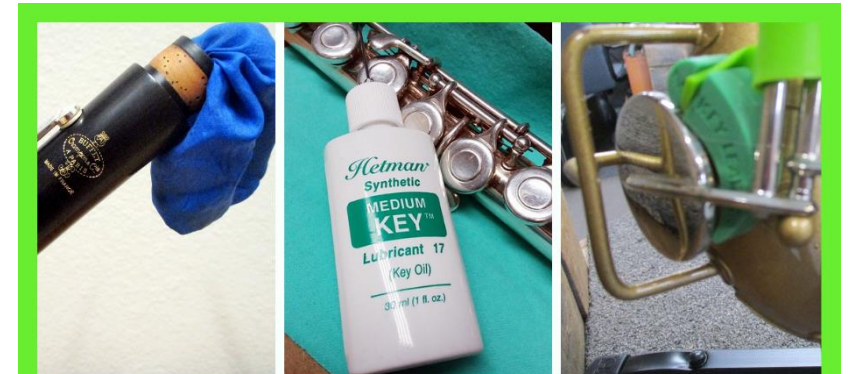
**Maintenance Sheets- Free to Download**

**Visit the Shop  
Youtube Videos  
Website Blog**



**How to Maintain  
Your Brass  
Instrument at Home**

and prevent costly repairs



**How to Maintain  
Your Woodwind  
Instrument at Home**

and prevent costly repairs

# WHY WON'T IT PLAY!?

Identifying the problem and what you can do about it



# Brass: Dents

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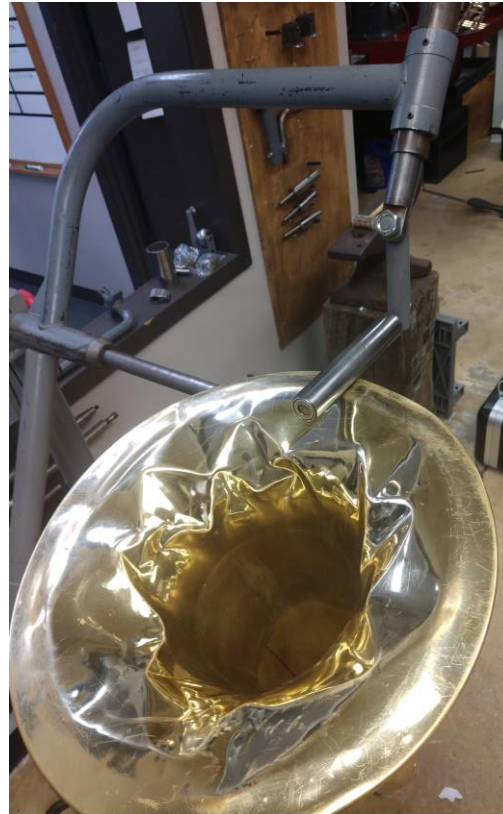
Dents will always affect the sound of an instrument

Where the dents are located and how large can play a big role

- Rule of 1/3
- Closer to mouth, more important

When tight on budget, prioritize.

When a horn looks terrible, the students won't respect it.





Rogue's Gallery





Don't worry, they're all better now

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# It won't Move!!!

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## Engineering Flowchart



# Stuck Slides and Valves.

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Usually need to bring it to the shop

Can be prevented

If done improperly, can cause a lot of damage.

# Woodwind: Binding Keys

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Stuck and Binding keys can prevent a note from speaking

## Bent Key

- Send to Shop

## Rust and Corrosion

- Oil Keys
- Remove keys and clean rods





# Stuck Flute Headjoint

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## Damage and Dents

- Will Need to be fit and put in round

## Dirty Tenon

- Never Use grease on Flute Tenons



# Stuck Mouthpieces.

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Stuck Mouthpieces should ONLY be removed with special mouthpiece pullers.

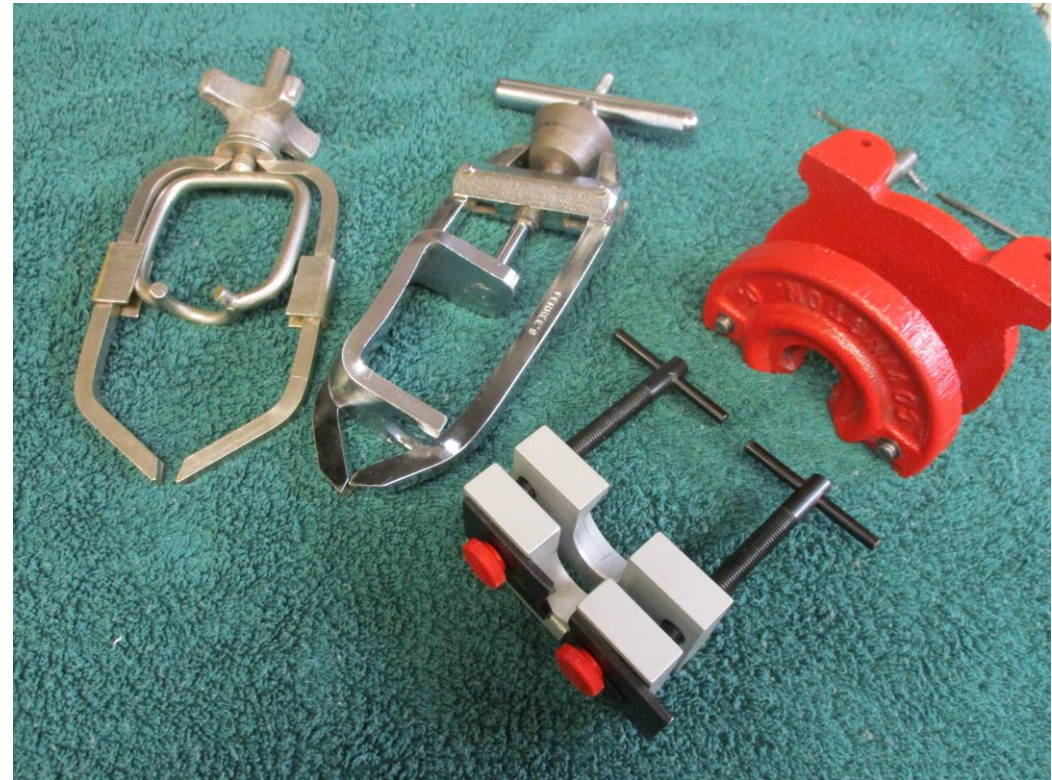
NEVER use a pair of pliers or vice grips

If the mouthpiece is not easily removed, bring it on to a repair shop

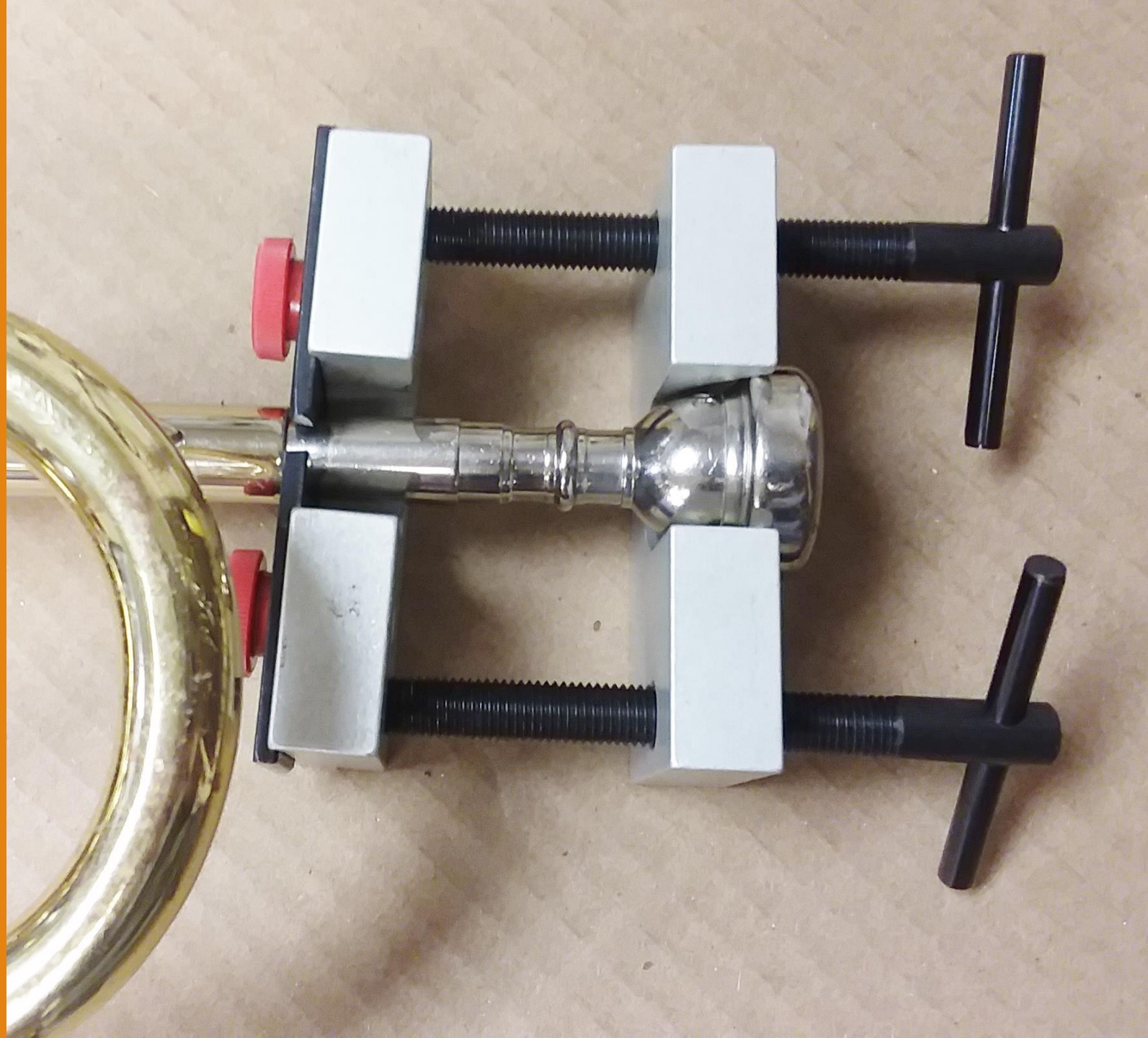
In most instances, the mouthpiece can be removed for free, while you wait.

Things that cause stuck mouthpiece

- Dents in Mouthpiece Shank
- Plating wear on Mouthpiece
- Dirty Receiver
- Students treating the horn like a punching bag



# The Bobcat





**EXHIBIT A**



# The keys don't come back up!!

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Woodwind and Brass Instruments both use springs

Spring Hook

Three Types of Springs

- Flat Springs
- Needle Springs
- Coil Springs



# Using the Spring Hook

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# Beyond the Spring Hook: Send it in!



# It's bent; Should I bend it back?

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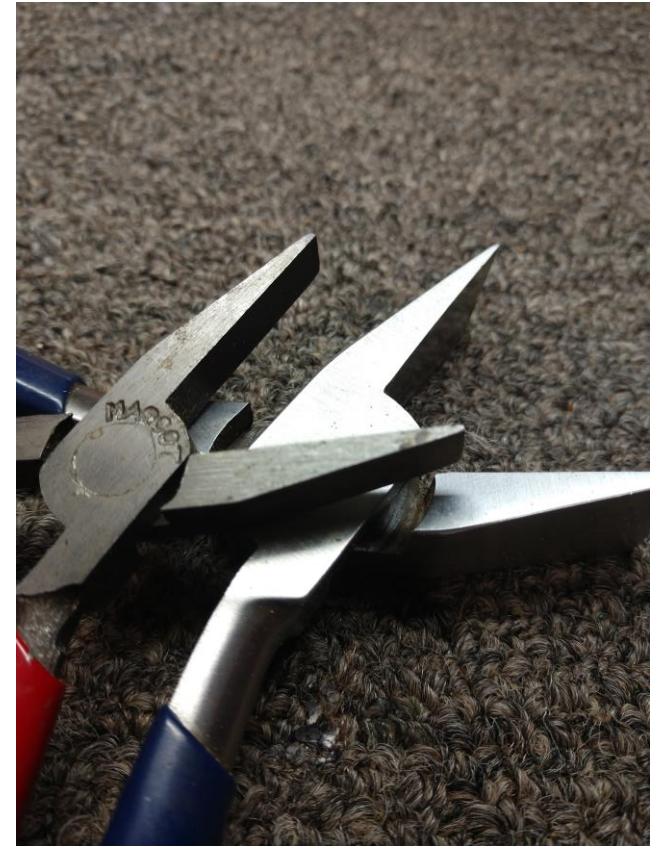


Slowly Bend

Let it rest in between moves

Smooth Jaw Pliers

When in doubt, let me break it.





## Leaky Horns and What to do

Leaks cause problems in all  
horns.

Depending on the cause,  
you may or may not be  
able to fix it yourself

Knowing why it's leaking is  
the first step in the battle



# Waterkeys

Usually an Easy Fix.

- Remove old Water Cork
- Clean out old Glue
- Dry fit cork
- Apply Cement
- Use a cork Slick to level
- Slight pressure to seat cork
- All Done!

# Solder, Just don't do it

Soldering should only be done by professionals  
Broken solder points lead to more broken solder points  
Can cause buzzing or leaks at joints



PADS

THEY DON'T LAST  
FOREVER

# How to tell if a bad is bad

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Rips

Tears

Bug Eaten Marks

Double Seat

Dents

Cracks Chips

Sticking

Feeler Gauge



# Pad Bugs, YES they're Real

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Also known as Carpet Beetles

You can see small holes in pads

Shells are found in cases

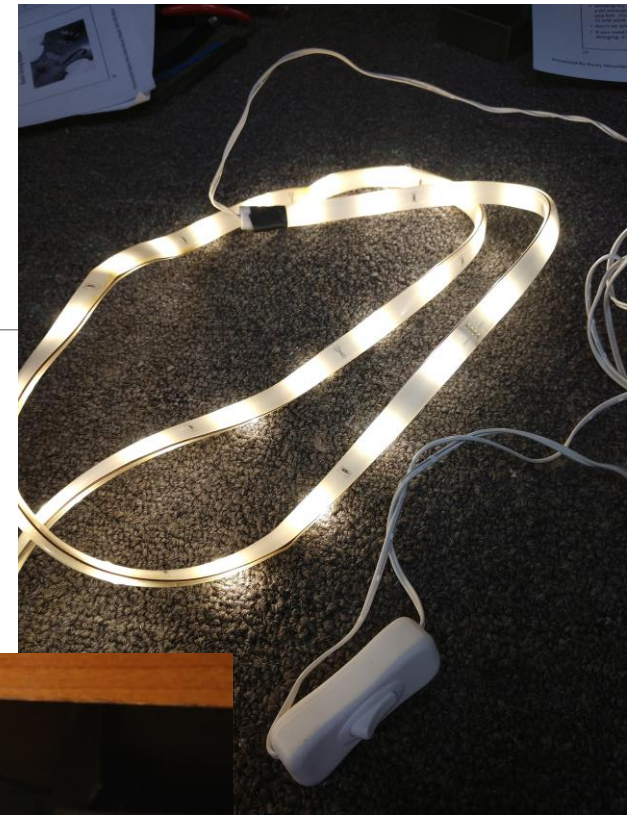
Many times instrument will need a  
repad and case replaced



# Testing for Leaks

You can test for leaks in three ways

- Light
- Suction
- Feeler Gauges





# Changing Pads

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Trust me, you're not good at it

Really, it's not going to work

Just bring it in

Regular appointments every year will keep the cost down

Swabbing is the #1 way to extend pad life

- Key leaves
- "Shove-its"
- Silk vs. cotton



# Sticky Pads

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## Key Leaves

### Pad Paper

- Place paper under key
- Apply Light Pressure
- Pull Paper Out
- Repeat as necessary
- If it continues to stick, Replace Pad
- Dollar bill/cigarette paper in a pinch





# Air constriction, Stuffy Sound



# Foreign Objects

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Many items get stuck in horns

“Claw” Tools

Alligator Forceps

Ziplock bags in Cases for Prevention



# Borosscopes are your friends

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# Stuck Swabs

Making the bad into worse

Swabs can get stuck for a number of reasons

- Using wrong size in wrong horn
- A knot in the Swab
- A tear in the swab
- A voodoo curse upon your band
  
- If not careful a stuck swab can cause damage or cracks
- Never try and push a swab through if stuck
  
- The earlier you stop trying, the easier it is for me.

# Valve guides

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1

Valve guides are usually an easy fix

2

Worn out

- If the valve is spinning or not “clicking into place it may just need replacing

3

Installed Incorrectly

- If installed backwards, will cut off air.



Yamaha: you'll feel dumb when I fix it

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# Rotor Bumpers

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# Valve Alignment

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The felts on the pistons tell it how high up and down they sit when at rest and when depressed.

If these felts aren't the correct thickness it will affect the air flow of the horn

Fairly easy to measure and replace if you have the right tools

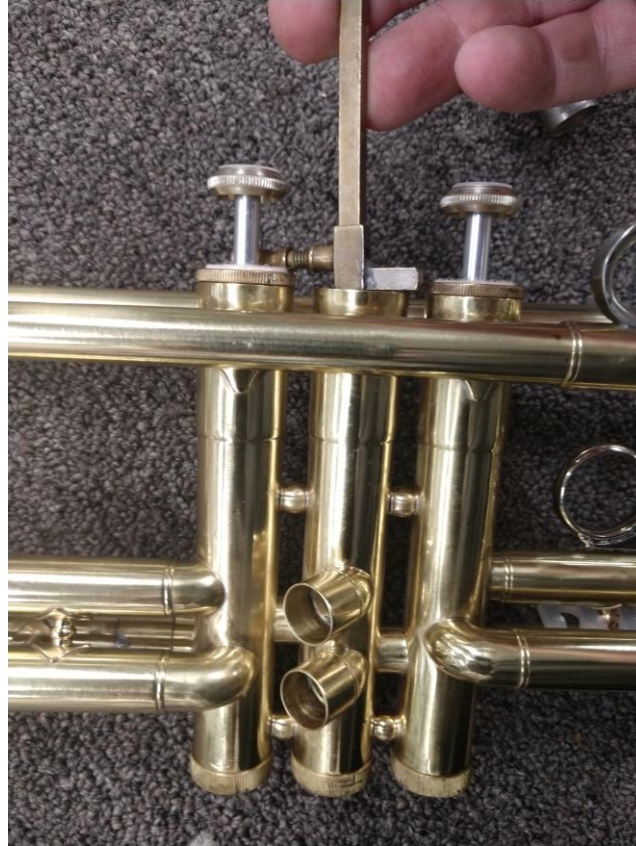
Requires a large assortment of felts to do properly

Very Cheap repair

Good shops will replace felts at every cleaning.

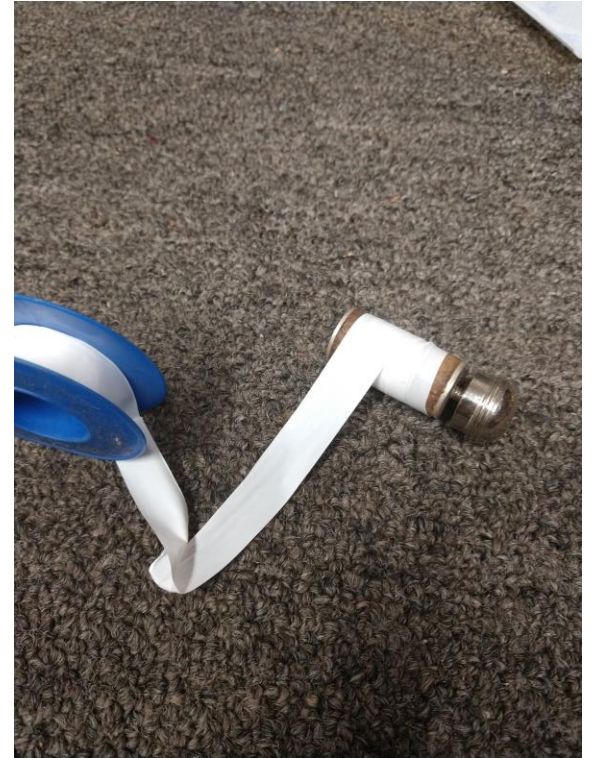
# Valve alignment tool

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Emergency Repairs



# Teflon Tape; a love Story

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# KISS that Pad problem Goodbye

If a pad falls out, you can lay aluminum foil to hold the pad back in place.

Press the pad down to seat it

Twist foil over top to secure it

This'll get you about 30 minutes of playing



# MacGyver Tricks in a pinch

-Dollar Bills can serve as Pad Paper

-Pencil erasers (white automatic pencil preferred) can be used as emergency water corks or French horn bumpers

-Clear Nail polish can be used to stop a screw from backing out temporarily.

-Broken Solder Joints:

- Zip Ties are the preferred Method
- Don't use:
  - Super Glue
  - Tape of any Kind
  - Rubber bands (especially on silver horns)
  - JB Weld or other epoxies
  - Anything you read about on the internet.

# Recommended tool and Supply List.





# Tools

## Suppliers and Recommendations

- Mouthpiece Puller (Bobcat)
- Cork Slicks (make from Harbor Freight Gauge Material)
- Spring Hook (JL Smith)
- Jeweler's Flat Blade Screwdriver (Wiha)
- Canvas Hammer (Ferree's Tools)
- Rawhide Hammer (Rio Grande Jeweler's Supply)
- Flat Pliers (Michael's Beading Section)
- Wire Cutters (any Hardware Store)
- Feeler Gauge (zip tie, and Mylar)
- Leak Light (Ikea)
- Mouthpiece Dent Tool (Ferree's)
- Drum Key (ratcheting)
- Claw Tool (Auto Parts stores, Harbor Freight)
- Neck Screw Extractor (Ferree's)

# Supplies

Place to get it listed if other than  
common stores

- Zip Ties (harbor Freight)
- Teflon Tape (Hardware Store)
- Water Corks (Music Medic)
- Aluminum Foil
- Powder Paper/Cigarette Paper (Music store/Smoke Shop)
- Sticky Backed Felt/Cork (Music Medic)
- Q-Tips
- Clear Nail Polish
- Contact Cement (hardware Store)
- Pipe Cleaners (NOT Craft Store. Get from Smoker Friendly)
- Pledge
- Solver Polish Cloth

# Prepping for a long Break

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HOW TO MAKE YOUR HORNS HAPPY WHEN YOU GET BACK



# Simple things to do before leaving

Make it an event and enlist your students to help.

-Last week of school instead of watching movies

-Graduation gift from your outgoing class to the new students

## WOODWIND:

- Grease all corks,
- Oil Keys
- Make sure all joints are apart
- No reeds on Mouthpieces

## BRASS:

- -Clean all instruments
- Oil Valves
- Grease Slides
- Polish Silver or Wipe with Pledge
- Clean Mouthpieces

**AND CLEAN OUT YOUR CASES!!!**





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