

DENTAL EQUIPMENT, MAINTENANCE & SHARPENING

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THE RIGHT TOOLS = THE BEST RESULTS



PERSONAL PROTECTIVE EQUIPMENT

- Wear
 - Bouffant caps
 - Face Masks
 - exam gloves
 - gowns
- Clean up
 - Cavi or Clorox Wipes
 - Ultrasonic cleaners
 - Autoclave



CaviWipes towelettes, presaturated with CaviCide®, are a cleaner and disinfectant in one. These medical-grade sanitizing wipes are durable, nonwoven, nonabrasive towelettes that offer quick, easy-to-use, time-saving convenience. They're recommended for use on non-porous surfaces and fixtures.

- Effective against *Staphylococcus aureus* with reduced susceptibility to vancomycin and Influenza A2 Virus
- Kills TB in 3 minutes and MRSA, HIV-1 and HBV and HCV in 2 minutes
- Low alcohol (17.20% isopropanol) surface disinfectants
- Stays fully saturated; better fluid capacity means the wipes won't dry out
- Ideal for operating rooms, surgical centers, neonatal units, medical and dental operatories and other critical-care areas

ACCORDING TO WSAVA GUIDELINES, THE MINIMUM REQUIRED EQUIPMENT FOR VETERINARY DENTAL PROCEDURES IN THE USA (TIER 3 COUNTRY) INCLUDES

- Good lighting
- Magnification
- Digital Dental Radiology

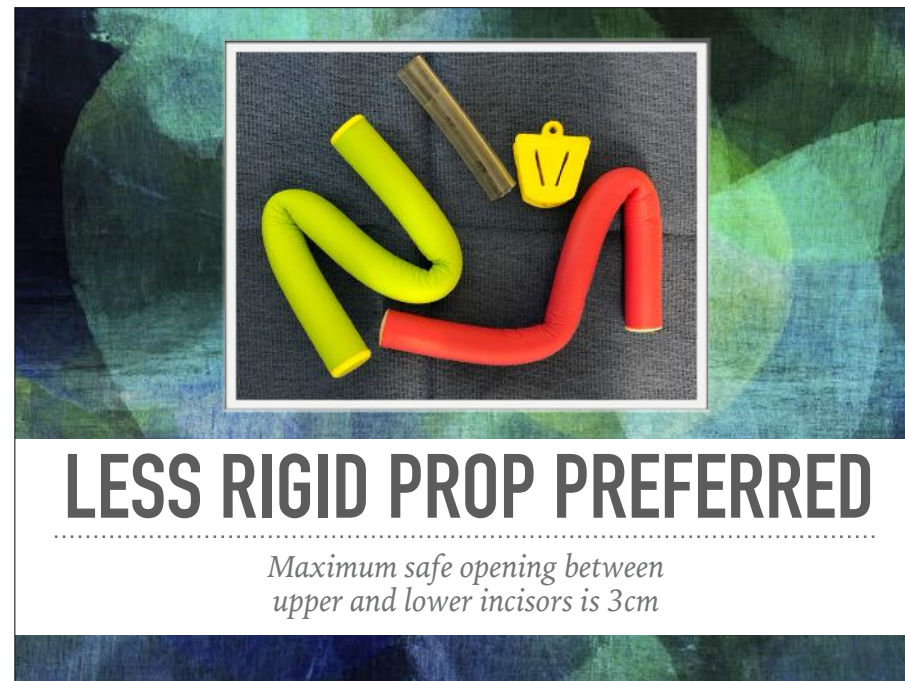
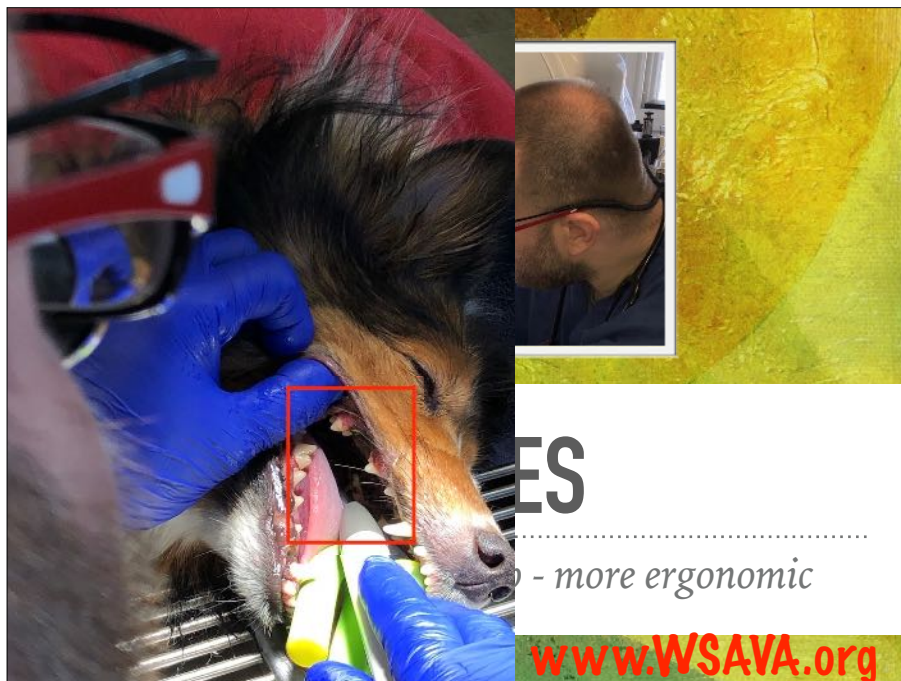
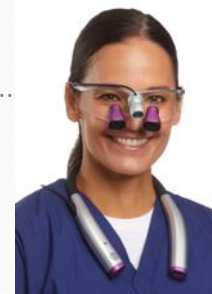
LOUPES

- Lighting
 - wired
 - non wired
 - LED vs. other
- Vision
 - Prescription
 - Non Prescription
 - Half frame for either
- Price point
 - Single vs. multi-user
 - Quality and durability



LOUPES 2 - 2.5X

- Enova
 - unique battery solution
 - great customer service
- Rose Microsolutions
 - multi-user options
 - excellent price point
- Medi Loupes
 - L for people 5'8" and taller
 - R for those 5' 9" and shorter

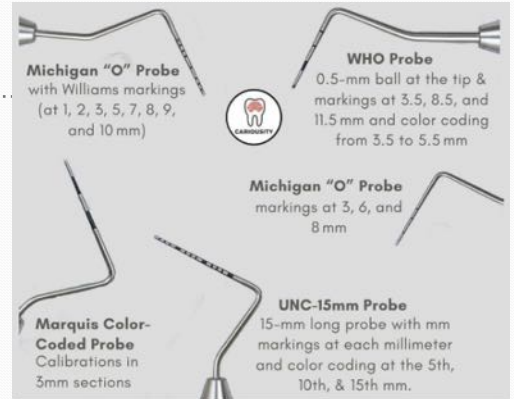




PROBES AND EXPLORERS

Up to 3mm in dogs Up to 0.5mm in a cat

PROBES & EXPLORERS



CURETTE VS. SCALER

<https://bit.ly/handinstruments>

SCALERS



Supra-gingival Calculus Removal

- Triangular cross section
- Face perpendicular to the lower shank
- Two cutting edges
- Pointed/sharp toe

UNIVERSAL CURETTES



Supra & Sub-gingival Calculus Removal

- Face perpendicular to the lower shank
- Two cutting edges
- Rounded tip/toe
- Barnhart, Columbia

GRACEY CURETTES



Subgingival Calculus & Root Planing

- One cutting edge, rounded tip/toe
- Variety of shank angulations providing easy access to all areas

iM3 and GerVet also make Universal-Gracys

<https://bit.ly/handinstruments>





ROOT PLANING TECHNIQUE

► Vertical, oblique and horizontal strokes

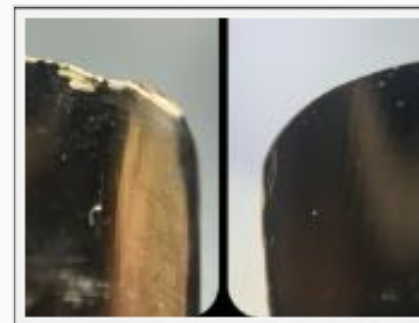
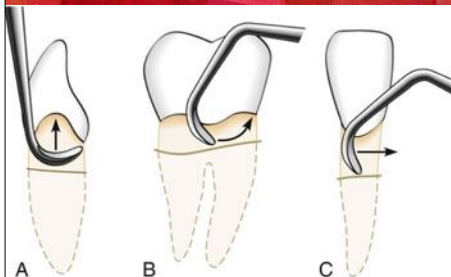
► Root planing should have less pressure than scaling the crown

► Use lateral pressure on the end of the instrument to engage the calculus.

► Pull out the tartar, don't push it back into the pocket

► If exploring the area use a very light hold

► Horizontal stroke mostly for subgingival curettage



SHARP OR DULL?

Which tool is more likely to cause damage while working in the mouth?



IMPORTANCE OF INSTRUMENT SHARPENING

- Increase tactile sensitivity
- Decrease muscle fatigue
- Reduce number of strokes
- Decrease burnishing

SHARPENING HAND INSTRUMENTS

► Stones

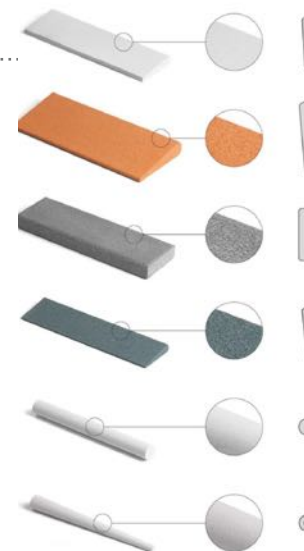
- Arkansas, India, Diamond

► Shapes

- Flat, rounded, conical

► Lubricant?

- dry
- water
- sharpening oil



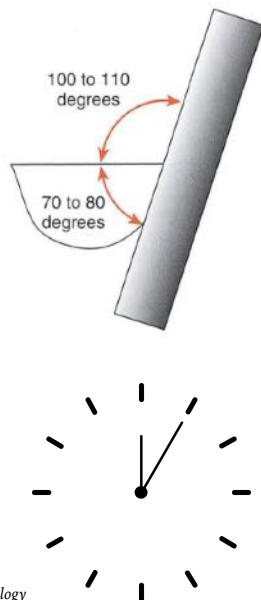
HAND SHARPENING

- 70 degrees between side and face
 - too steep, dulls/breaks easily
 - too shallow, loose efficacy
- Think of the hands of a clock



Figure 51-112 Left, Properly sharpened curette maintains a 70- to 80-degree angle between its face and lateral surface. Center, Curette has been sharpened so that one of its cutting edges is less than 70 degrees. This fine edge is quite sharp but dulls easily. Right, One of the cutting edges of the curette has been sharpened to 90 degrees. Heavy lateral pressure must be applied to the tooth to remove deposits with such an instrument.

Images from Carranza's Clinical Periodontology



SUGGESTIONS

- Use Magnification
- Use a Sharpie on instrument edge
- Select a stone grit to match task
 - Diamond, Arkansas touch up
- Buy quality instruments to keep up with sharpening
- Use a system to prevent surfaces from banging into each other

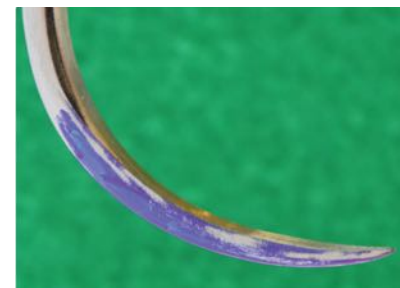


Image from Registered Dental Hygienist Magazine

Ideally dental instruments should be sharpened:

After every use

Every week

Every month

Every year

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MACHINES TO HELP SHARPEN

- Sidekick
- Rx Honing Machine

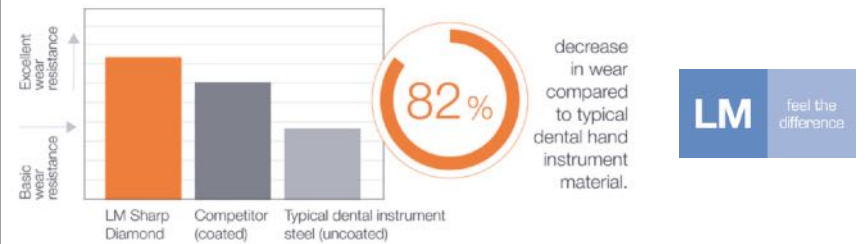




'STICKY' SPOT – PDL

plastic test stick

SHARPEN FREE



Reference studies: * (1) Sormunen E., Nevala N: Evaluation of ergonomics and usability of dental scaling instruments; Dental scaling simulation and field study, part III. Finnish Institute of Occupational Health, LM-Instruments Oy. (2) Nevala N, Sormunen E, Remes J, Suomalainen K: Ergonomic and productivity evaluation of scaling instruments in dentistry. The Ergonomics Open Journal 2013; 6, 6-12. ** Leppäniemi J. et al: The influence of PVD coatings on the wear performance of steel dental curettes. Key Engineering Materials Vol. 674 (2016), 289-295.

- Coating to keep the edge (prevent burnishing)
- Replace instead of sharpen

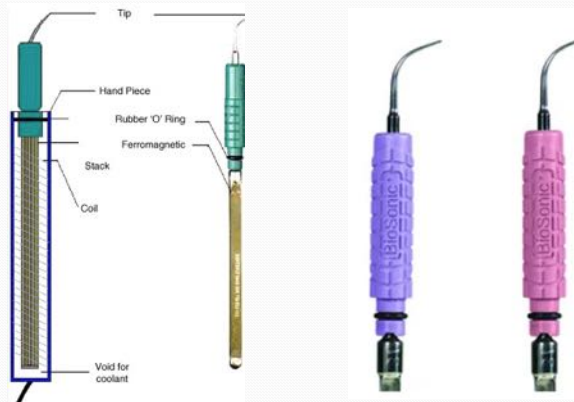


ULTRASONIC SCALERS

PIEZOELECTRIC ULTRASONIC SCALERS



MAGNETOSTRICTIVE ULTRASONIC SCALERS

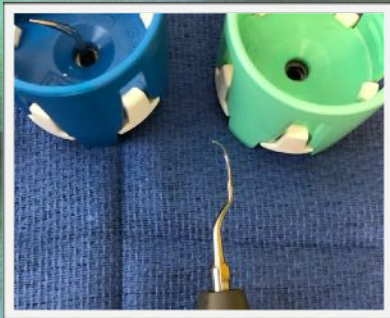


CLEAN BETTER ON THE FIRST PASS

Use H3 tip on Acteon Newtron for grooves, sulcus

ULTRASONIC INSERT WEAR GUIDES





IMPROVE CLEANING

Use light 'paint brush' strokes

Ultrasonic scalers clean effectively through all of the following methods EXCEPT:

Oscillation of the tip near
the calculus

Cavitation = sound waves
energize the water spray

Tip contacts the tooth
with light strokes

Tip is forced against
calculus like a scaler

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WET TABLE

adjust height? size? wall mount/wheeled?

[surgiden.com](https://www.surgiden.com); also makes the No Rad shield



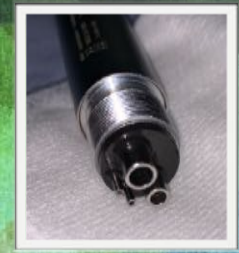
DENTAL UNIT COMPONENTS

compressor, air/water syringe, high/low handpiece



HIGH/LOW SPEED HANDPIECE

with or without light, no water in low



OIL HANDPIECES

use the small 'large' hole

Which of the following is NOT true regarding high speed handpiece use?



High speed handpieces should be lubricated after every day's use.

Handpiece turbines only need to be cleaned annually.

After oiling the handpiece, it should be run to distribute the oil for 2 minutes.

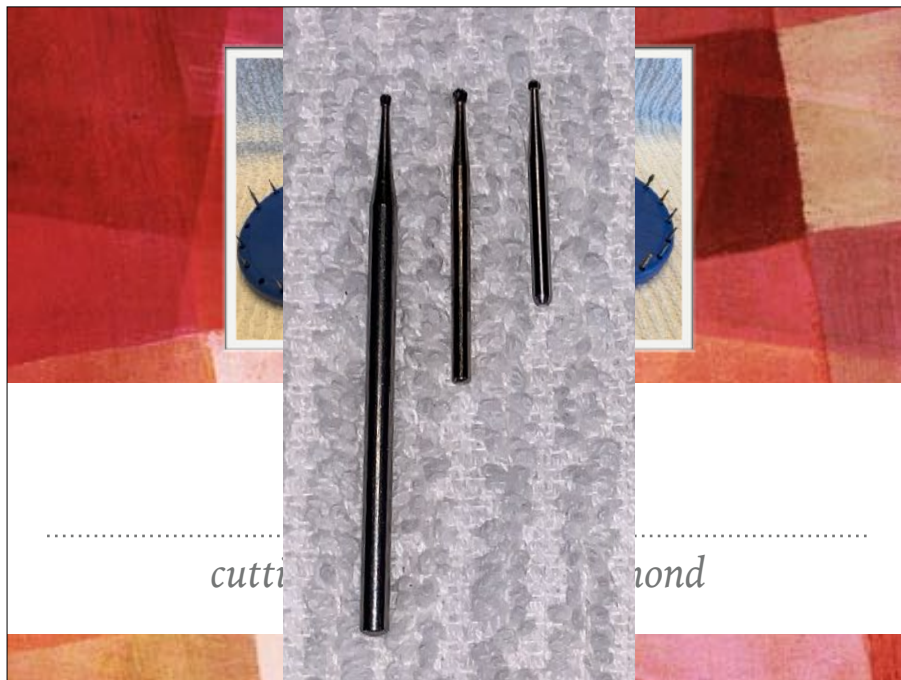
Any time the handpiece is run, there should be something in the turbine such as a bur or blank.



TURBINE CLEANING

rubbing alcohol and microbrushes





HIGH SPEED HANDPIECE; FRICTION GRIP (FG) BURS

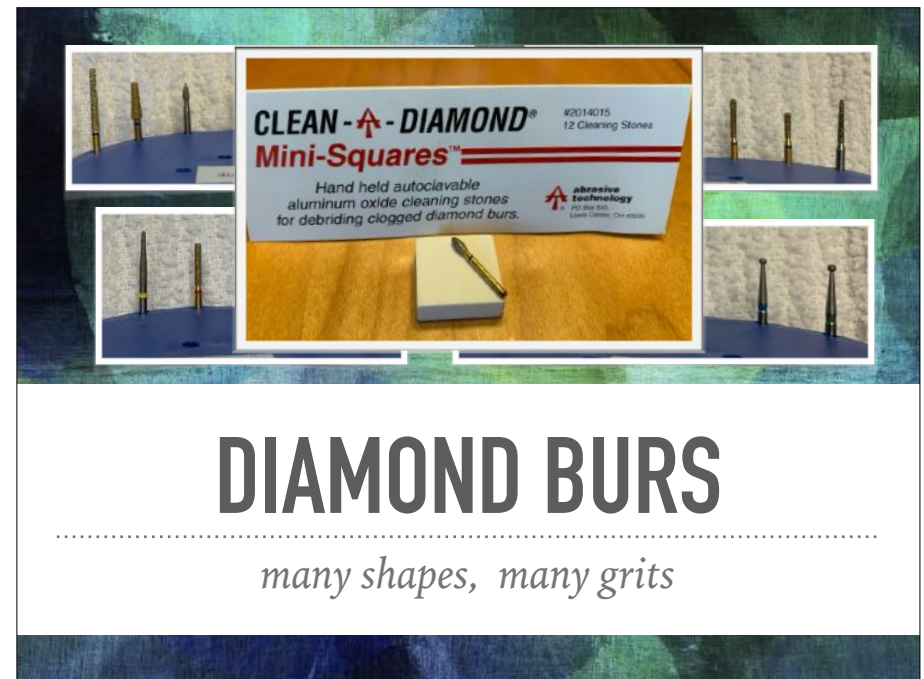
- ▶ Round, Pear: use tip
 - ▶ remove buccal bone, PDL
- ▶ Taper, Pear: use side
 - ▶ section teeth
- ▶ Length of working area
 - ▶ L is 1-2 mm longer than std working head
- ▶ Surgical length vs. Standard
 - ▶ 25mm vs 19mm long shank



Dental Bur Suggestions

| | Buccal Bone | PDL sides | Tooth sectioning |
|-----|-------------|-----------|----------------------------|
| Dog | 2 | 1/2 | 701 +/- surgical length |
| Cat | 1/2 | 1/4 | 699 |

Consider 329 or 330 pear burs as alternatives for all uses in cats



HIGH SPEED HANDPIECE; FRICTION GRIP (FG) BURS

- ▶ Diamond bur shape of choice
 - ▶ Alveoloplasty
 - ▶ (remove necrotic bone, return harmonic bony architecture)
- ▶ Medium or Coarse
 - ▶ Blue or Green stripe



Dental Bur Suggestions

| | |
|-----|---|
| Dog | Round or Football blue or green stripe large |
| Cat | Round or Football blue or green stripe medium |

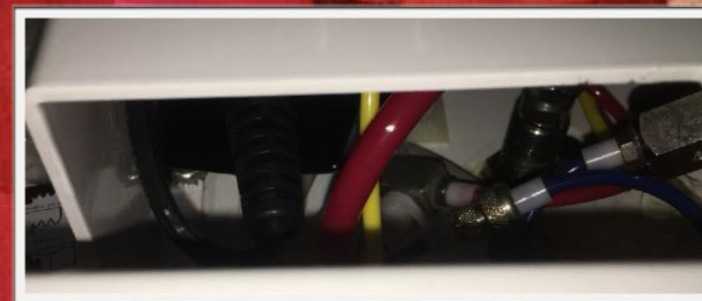
BUR RE-USE?

- ▶ Cutting
 - ▶ designed for single use
- ▶ Diamond
 - ▶ repeated use
 - ▶ need to clean
 - ▶ ultrasonic, stone cleaner
- ▶ Never re-use after:
 - ▶ dull or extensive use (FME)
 - ▶ neoplasia or infectious disease (FIV)



COMPRESSOR

Standard (oil free) or Silent (synthetic oil)



ADJUSTMENTS/REPAIRS

Know who to contact



SUCTION

- attached to unit, button activated vs stand alone, continuous

MAI DV-350



AIR/WATER

CLS minimizes aerosolization during ultrasonic scaling



ADJUSTING SETTINGS

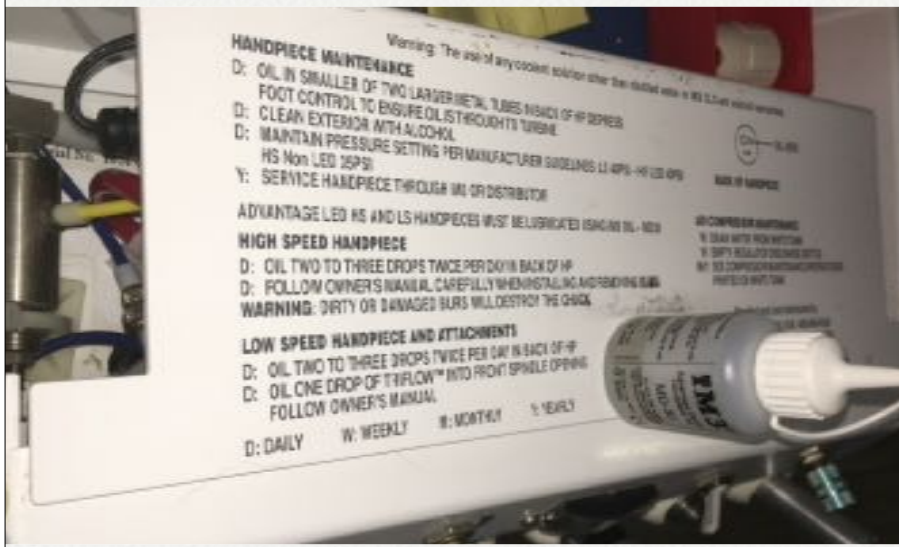
Low: 35-50 PSI High: 30-35 PSI

TROUBLESHOOTING

- air leaks
- compressor not pressurizing
- foot pedal not working
- handpiece not spinning
- handpiece water leak
- no water from handpiece
- lack of power
- bur lock/bur slipping



MAINTENANCE



MAINTENANCE



- Daily
 - touch up hand instruments
 - oil handpiece
- Weekly
 - check compressor gauges
 - drain oil free compressor
 - clean handpiece turbine
- Monthly
 - check oil level (not below half) for oil compressors
- Yearly
 - compressor maintenance (filters, change oil (if have oil))
 - sterile straw for biofilm removal



QUESTIONS?


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