



RADIO CORPORATION OF AMERICA  
RCA VICTOR DIVISION,  
TUBE DEPT. STANDARDIZING EEE  
HARRISON, N. J. LANCASTER, PA.

DATE Dec. 28, '48 PAGE 1

STANDARDIZING  
NOTICE

34-29-1

SUBJECT LUBRICANTS FOR MATERIALS FORMED  
INTO PARTS

SUPERSEDED DATE 4/8/41

Lubricants listed on p. 2 are standardized for the applications shown thereon. No new lubricants shall be introduced without PC approval.

The preparations are to be used as lubricants for materials drawn and formed into parts which are used inside radio tubes. They are selected for service-ability as well as ease and possibility of complete removal by standard cleaning procedures.

The materials are composed of animal, mineral and vegetable oils and also soaps. The oils are completely soluble in Blacosolv, the standard cleaning solvent, but most soaps are not and these do not even fire off easily in hydrogen. In fact, there is no satisfactory standard method as yet for removing die lubricants containing soap.

Washing in blacosolv, if done for a sufficient length of time, should adequately remove oils. However, this treatment should be followed by hydrogen firing as a safeguard. \*\*\*

For references to cleaning procedures for removing lubricants, see 34-4-1.

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PC24061-35/EG

STANDARD LUBRICANTS AND THEIR APPLICATIONS

For references to cleaning processes for removing lubricants see 34-4-1

Lubricant	Composition or Class of Oil	Used on Machines
1. 33-B-66 Butyl Carbitol Acetate	Acetated ether alcohol	<u>Stem Forming</u> - a. Machine parts which come in contact with stems. <u>Four-slide</u> - b. Clear and pre-carbonized Ni and Ni-plated steel formed into cathodes, plates, etc., <u>having a lock seam.</u>
2. WDC Drawing Compound 100-250g in 5 gal. water		<u>Cold Wire Drawing</u> - Nickel, nickel alloy and nickel and copper coated wires.
3. 1 part by wt. of 33-D-26 Extreme pressure compound & .5-1.5 parts by wt. of Kerosene	Mineral & sulfurized oils & soap. Mineral Oil.	<u>Power press</u> - Clear nickel, chrome iron and stainless steel.
4. 33-O-6 Varsol & Sunoco Spirits	Mineral Oil	A thinner for other oils as shown below.
5. 33-O-8 N-A-L Oil	Animal, Mineral & vegetable oils & water soluble waxes.	<u>Power Press</u> - Monel
6. N-A-L Oil - 2 part & 33-O-6 Oil - 1 part		<u>Power Press</u> - Clear ni-plated steel iron & steel. (Also rust preventative.)
7. 33-O-12 600 W Oil	Mineral Oil	<u>Four -slide</u> - Nipron Wire
8. 33-O-13 Cadet W Oil	Mineral Oil	<u>Power Press</u> - a. Tantalum Molybdenum. <u>Four Slide</u> - b. Liquor finish (copper coated) iron, nipron, clear nickel & clear ni-plated steel, except parts with <u>lock seams.</u> <u>Hand Fixtures</u> - c. Any stock (if a lubricant is needed).
9. Cadet W Oil - 1 part & 33-O-6 Oil - 1 part	Mineral Oil	<u>Four-slide &amp; Power Press</u> - Pre-carbonized nickel & nickel plated steel, except parts with <u>lock seams.</u>

\* INDICATES A CHANGE      ✕ INDICATES AN ADDITION

SUBJECT LUBRICANTS FOR MATERIALS FORMED  
 INTO PARTS

SUPERSEDED DATE 7/22/47

Lubricant	Composition or Class of Oil	Used on Machines
10. 33-0-14 Castor Oil	Vegetable Oil	<u>Power Press</u> - Clear nickel, cobalt-nickel iron (Kovar, Fernico)
11. 1 part Machine Oil(SAE 30)& 1 part 33-0-6 Oil	Mineral Oil " "	<u>Kershaw</u> - Grid wires.
12. No lubricant.	- -	<u>Power Press</u> - Silver
13. 33-0-15 Fiske No.S-130	Sulphur free mineral oil.	<u>Lathe</u> - Copper anodes
14. 90% 33-B-38 Blacosolv 10% 33-B-66 Butyl Carbitol Acetate	Trichlorethylene & Acetated ether alcohol	<u>Mica stitching</u> - Machine parts which come in contact with mica assembly.
15. Tallow & Blacosolv Mixture Ratio 1#/gal.	Animal fat	<u>Power Press</u> - Kovar, cold rolled steel, nickel parts (deep drawing).
16. Mentor #28	- -	<u>Four-slide &amp; Power Press</u> - S95B material used in <u>lock seam</u> parts.

\*\* See following page for wire lubricants.

SUBJECT LUBRICANTS FOR WIRE DRAWING

SUPPLEMENTED DATE 7/29/48

LUBRICANTS TO USE WHEN HOT DRAWING WIRE

Die Line (Mils)	Table	Lubricant	Carbon Content	Wire Type
72 - 38	Single Die Mach.	33-A-21	Dilute sufficiently so that carbon peeling at entrance to die is observed.	Moly, H Wire, Downmo, Tungsten, Platinum Moly.
82	Finishing Swaging	33-A-21	A paste is used sufficient to obtain a black coating on wire after passing thru the last swaging die.	Moly, H Wire, Downmo, Tungsten, Plat. Moly.
→ 33 - 12.5	#4	33-A-21	*1.5-*2.5%	Moly, H Wire, Downmo, Tungsten, Plat. Moly.
→ 12.5 - 3.7	#1	E-287 Westinghouse Aquadag Substitute (5-gal.cans)	*1.5-*2.5%	Downmo, H Wire, Tungsten.
→ 3.4 - Finished Wire	#2	E-287 Westinghouse Aquadag Substitute.	*1.5-*2.5%	Downmo, H Wire, Tungsten.
→ 12.5 - Finished Wire	#3	E-287 Westinghouse Aquadag Substitute.	*1.5-*2.5%	Moly, Tungsten, *** Downmo.

→ Notes - 1.\*Carbon content of E-287 Westinghouse Aquadag substitute is 6-6.5%.

2. Check carbon content of aquadag or aquadag substitute bi-weekly on tables #1, #2 and #3; Weekly on table #4.
3. Use only distilled water to maintain consistency.
4. For information only pH should be 7.5-8.5.

STANDARDIZING SECTION  
 ENGINEERING DEPT.

\*\*\*Indicates elimination of platinum molybdenum, which is cold drawn at these sizes.

∇ INDICATES A CHANGE      ✕ INDICATES AN ADDITION

PC-H1499-35/EG