

## STANDARD PRACTICE #222

## Heat Treatment of Commercial High Powered Rifle Barrels

## Equipment:

Lindberg Furnaces  
Barrel Rack  
Oil Quench Tanks  
Electric Hoist

## Sequence of Operations:

Wear safety mask, gloves and safety shoes. Beware of hot oil splashes.  
Put "HOT" sign on cooling barrels.

Precautions:

- a. Use only racks with wire mesh welded to both top and bottom of frame.
  - b. Furnaces and quench tanks are to be inspected once each week and cleaned whenever necessary.
  - c. Temperature recorders on draw furnaces are to be checked for accuracy three times each week. Temperature recorders on furnaces that have been left idle 48 hours or more, must be checked before use. Foreman will keep record of recorder inspections and adjustments.
1. Place barrels in rack, straight, according to the following schedule:
 

M/721-722	- 150 barrels per rack (Max.)
M/743-750	- 150 barrels per rack (Max.)
M/725	- 150 barrels per rack (Max.) Big end down.
M/40-X	- 100 barrels per rack (Max.)
  2. When furnace reaches temperature specified by Laboratory, remove cover, raise rack with hoist and lower into furnace. Remove hook from rack, raise hoist, and replace cover on furnace. Record time when barrels are put into furnace and when furnace again reaches specified temperature.
  3. Harden barrels for specified time at temperature.
  4. Before barrels are ready to come out of furnace, be certain only one quench tank is running. If old tank is to be used, open flow valve  $2\frac{1}{2}$  turns; if new quench tank is used, open flow valve wide. Ten minutes must elapse between quenching loads.
  5. Remove furnace cover, raise load out of furnace and lower into quench tank as rapidly as possible. When load is in quench tank, set 3-minute buzzer. Remove barrels after three minutes and allow to drain for one minute (Max. time). Place oil drain pan on rack.