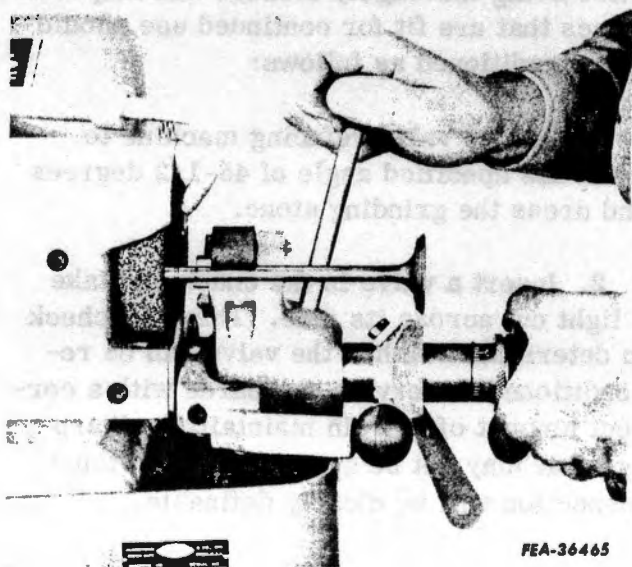


Avoid taking heavy grinding cuts as this heats the valve head excessively, producing an unsatisfactory valve face, and necessitates dressing the grinding wheel frequently. Repeated light grinding cuts are preferred until a true face of even width is obtained around the valve. Avoid passing the stone beyond the face of the valve as this will cause ridging and grooving of the stone surface and make dressing of the stone necessary. Reject all valves with distorted heads which produce an uneven face and valves which grind down to a thin edge.

One of the principal difficulties in reconditioning valves is to obtain nearly identical angles on the valve seat and valve face. The importance of these angles in the grinding operation cannot be overemphasized, because it is impossible to produce a flat or square seat by lapping.



The grinding stones on both the valve refacing machine and valve seat grinder should be dressed before starting a reconditioning job.

You will be unable to determine how closely the angle of the seat will match the valve face until the valve and seat have been ground and a check made with a very light tint of Prussian blue. If a full seat-width contact around the entire circle of seated valve is not shown, the angles do not match. It will then be necessary to redress the valve seat grinding stones, changing the angle sufficiently to correct the error. The correction should be made on the valve seat, and not on the valve. No more material should be removed from the valve face than is necessary to true it up and remove the burned or pitted portion. New valves should not be refaced, but should be checked for trueness. When a satisfactory match of valve seat and valve face angles has been obtained, the adjustment of both the valve refacer and the seat grinder should be locked in position, in order to eliminate this trial-by-error method on additional valves having the same angle.

At times unusually large amounts of heat scale may be found on exhaust valves, which is hard on the grinding stone. Frequent redressing of the stone will be necessary to maintain a smooth even surface and a uniform set of valve face angles.

After refacing each valve, inspect the end of the stem. If wear is noticeable, reface the end of the stem. Grind sufficiently to true-up the end of the stem.

Perhaps it has been noticed that on many International Harvester Farm Equipment engines, the valve face and seat are ground to an "interference angle". This means that the sum of the seat angle and the face angle do not equal 90 degrees.