PATTERN MOUNTING ERROR

The casting fails to match the drawing in one or more locations. Inspection shows an error was made in the mounting method or location of replaceable portions of the pattern.

Cause

Replaceable sections of the pattern were not provided with reference marks or constructed so as to assure the proper way of mounting.

Remedies

— Mark the parts of the pattern with lines, colors or numbers showing proper mounting position.
— Construct patterns in a manner such that there can be no confusion in mounting.
— Mount the pattern parts with the drawing at hand.

SHIFT

All casting processes involving parting lines.

The casting seems to have been subjected to a shearing action parallel to the parting line. Opposing edges of projection are equal and in opposite directions. Casting shape is otherwise correct on both sides of the parting line.

Possible Cases

— Poor matching or loose fit in the assembly of the pattern
— Poor matching or loose fit in prints
— Poor matching or loose fit in a pattern plate
— Loosely fitting flasks not compensated by alignment devices (off-sets, telltales, etc)
— Poor matching or loose fit between permanent mold halves
— Properly matched and fitted equipment, but flasks too weak to withstand high sand squeeze pressure
— Accidental mold damage occurring during mold assembly
— Poor matching or loose fit in the assembly of a core box
— Pattern Variation, F 221-1
— Print Variation, F 221-2
— Pattern Plate Variation, F 221-3
— Mold Variation, F 221-4
— Permold Variation, F 221-5
— Flask Deformation, F 221-6
— Mold Displacement, F 221-7
— See core shift, F 222

(Examples, following pages)
Figure 210
Malleable Iron, Green Sand
Shifted mold. Malleable iron wheel with a shift caused by the mold being bumped during closing.

Figure 211
Malleable Iron, Green Sand
Malleable iron pillow block cover cast in jacketed mold. Accidental displacement of the mold halves caused a shift, resulting in the formation of a crack due to difference in section thickness.

Figure 212
Gray Iron, Green Sand
Gray iron casting showing core displacement; reduce the clearance between the core and its print.

Figure 213
Gray Iron, Green Sand
Shift caused by pattern mis-match. Gray iron lever castings. The part on the left is good, while that on the right shows a shift: pattern plates should be realigned.