FRACTURED CASTING

All alloys.

A part of the casting is missing. At the defect location the casting shows evidence of fracture (see also defect C 111).

May occur at any casting area but usually with projecting sections; ribs, bosses, outside corners.

Possible Causes
— Rough shakeout.
— Careless handling, shock.
— Also may occur after initial cracking (defect C 111).

Remedy
Care in shakeout and handling.

BROKEN CASTING
(AT GATE, RISER OR VENT)

At regions where the gates, risers or vents were attached to the casting there is an irregular-shaped fracture whose surface extends into the casting. The fracture surface may be oxidized.

Possible Causes
— The gates, vents or risers were made too large or were not notched at the neck (or insufficiently so).
— Castings were shaken out too hot (Ed. note).
— Cleaning was done too roughly or carelessly with regard to the fragility of the castings.

Remedies
— Correctly dimension the attachment area, or neck, of gates, vents and risers with regard to the thickness of the casting.
— Consider use of a Washburn core for cast irons.
— Use care in shakeout (esp. temperature), handling, and cleaning.
— Before breaking off gates, vents or risers (cast iron), make a notch with a grinding wheel.

(Examples, following pages)
EARLY SHAKEOUT

The casting is broken into several pieces; the fracture surface is strongly oxidized in the case of ferrous alloys.

Cause
The casting was shaken from the mold too soon, with all or portions of the casting (especially thick sections) still being unsolidified and in a pasty condition.

Remedy
Increase cooling time in the mold before shakeout.

E 221 - Cast Iron
Gray iron clutch housing. The riser neck provided on the pattern has broken into the casting itself.

E 221 - Malleable Iron
Hydraulic brake cylinder housing of malleable iron. Gate has broken into the casting because the notch provided on the pattern either did not fill during mold ramming or washed loose during pouring; sand should be rammed better.

E 231 - Cast Iron
Gray cast iron brake drum. The casting was shaken out while still in a mushy condition.