MISSING HOLES

During the perforating process punches may break, resulting in imperfect or missing holes in the metal. The risk of imperfect or missing holes is greatest with critical perforating; i.e., small holes, stainless steel, large open area and as the hole approach the minimum hole size and bar width.

The number and/or percentage of missing or imperfect holes per square foot of material have a direct relationship to the spoilage factor and resultant cost of the perforated items. This requirement **must** be discussed with the perforator in order to establish the price of the perforated product prior to the placement of the order.

The Minimum Hole Size

The smallest hole that is possible to perforate varies with the material type and thickness. A rule of thumb for carbon steel and aluminum is that the hole diameter should not be less than the thickness of the material. The closer the 1-to-1 relationship between hole diameter and material thickness is approached, the higher the probability for tool failure, and the greater the precautions necessary to protect against it. These factors all increase the cost of production. For stainless steel and other higher strength material, it is best to drop at least one thickness gage thinner than hole diameter.

The Minimum Bar Width

The same 1-to-1 relationship to thickness is the limit for bar width as well as hole diameter; keep the bar width greater than the thickness of the material to avoid problems. As the 1-to-1 relationship is approached, the increasing number of punches required sharply escalates the press tonnage needed to perforate the pattern.

WELD REPAIRS

Weld repairs may be necessary. If perfect plates are necessary, consult your IPA supplier.

HEAT TREATED PLATE HARDNESS TOLERANCE: FULL THROUGH HARDNESS

Commercial Quality — ±20 Brinell total
Superior Quality — ±15 Brinell total
Custom Quality — To be determined mutually between customer and perforated supplier.

SURFACE FINISH

Slight surface damage resulting from the perforating process cannot be prevented.

Hot rolled steel is the product reduced from slab to required thickness at elevated temperatures. This produces a scale or oxide on the metal surface.

Cold rolled steel is the product that has been substantially cold reduced at room temperature. It is characterized by an improved clean surface, greater uniformity in thickness, and improved mechanical properties compared to hot rolled steel.

Pickled steel is the product from which the scale or oxide has been removed from the surface by a diluted acid solution.

Polished sheets — Even though we will take extreme care in the handling of the material, we will **not** be responsible for the surface finish after processing. If the polished sheets have to be roller leveled, surface protection must be removed beforehand and paper interleaved afterwards.

Spot grinding of material will not exceed .01″ under the specified thickness to remove surface imperfections.

CLEANLINESS — PERMISSIBLE LUBRICATION

The perforating process requires the use of lubricants. The natural condition of perforated material may vary from a light to a heavy concentration of oils and is furnished that way as a commercial product.

Normal surface condition leaving the perforating equipment – Perforated sheets or plate may have an oily film. There may be some accumulation and/or seepage of the lubricant.

A. Wiped Sheets — Wiped perforated sheets or plates are produced by rotary brushing or wiping after leaving the machinery, or by applying absorbent products. A light film will remain with some traces of absorbent particles.

B. Degreased Sheets — If buyer specifies total removal of lubricants, seller is not liable for any surface corrosion resulting from the absence of lubricants.

The above cleanliness requirements are additional cost factors and must be discussed with the perforator prior to placement of order if they are so required.

OVER-RUNS AND UNDER-RUNS

When perforated material is ordered in pounds or footage, as in the case of material produced from coil (unless otherwise agreed upon) the quantity ordered will be subject to the following:

Permissible Mill Quantity Variation of Sheet Produced from Coil

80,000# and Over — 5% Over or 5% Under
40,000# Thru 79,999# — 10% Over or 5% Under
20,000# Thru 39,999# — 15% Over or 10% Under
10,000# Thru 19,999# — 25% Over or 15% Under
0# Thru 9,999# — 25% Over or 25% Under

If an exact quantity is required, the quote and the purchase order must contain an explicit statement that the order is for an exact quantity, and that mill and industry standards for variation do not apply.