Risk Assessment Model
Knives and Shears

The following is a risk assessment model for knives and shears used in the processing facility and may be used as a guide for developing a risk assessment for a specific processing facility.

The risk assessment is based on the assumption the processor has written sanitation standard operating procedures that addresses knives and shears, including:

- Applicable standards, e.g., U.S. Food and Drug Administration, Title 21 CFR - Parts 110, 113 and 123, and State of Alaska, Title 18, Chapter 34;
- Control Measures;
- Monitoring Procedures;
- Corrective Actions; and
- Records.

Depending upon the specific processing facility, elements of this risk assessment can be added or deleted.
Risk Assessment Model
Knives and Shears

Risk Assessment - Potential Hazard Identification:

Knives and shears are commonly used in fish processing facilities. These utensils may be a potential source of metal inclusion in the finished product.

Risk Assessment - Hazard Characterization:

According to Chapter 20 of the *Fish and Fisheries Products Hazards and Controls Guidance (Third Addition)*, the U.S. Food and Drug Administration’s Health Hazard Evaluation Board has supported regulatory action against food products with metal fragments of 0.3" (7 mm) and 1.0" (25 mm) in length (FDA Compliance Policy Guide No. 555.425). Knives and shears constitute a potential food safety hazard (metal inclusion) and must be evaluated during the health hazard analysis under Title 21, *Code of Federal Regulations Part 123 – Fish and Fishery Products* enforced by the U.S. Food and Drug Administration.

Knives and shears are routinely utilized in the processing of fish and fishery products. Knives and/or shears are used during the various processing steps, including filleting, trimming, and patching. In these applications, the knives and shears are only used on soft tissue and small bones.

Typically, the knives used are constructed of a single edge thick metal blade with a non-wood handle, and shears are hinged thick metal blades with a non-wood handle. Historically, the type of knives and shears used in the processing facility are extremely durable and not subject to chipping, fragmentation, or breakage.

In some components of the food manufacturing industry, metal detecting equipment is used to examine finished products prior to distribution. The use of metal detection equipment is not common in processing facilities to examine canned, fresh, and frozen products.

Since knives and shears may be a potential metal inclusion hazard, the risk assessment was performed to determine whether it is necessary to number the knives and shears and/or document the issuance and return of the items on a daily basis.

Risk Assessment – Exposure Assessment:

The interim and finished food products are exposed to knives and/or shears during the various processing steps, including filleting, trimming, and patching. As such, all finished products are exposed to the potential risk of metal inclusion from the utensils.
Risk Assessment – Risk Characterization:

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>High – Occurs frequently</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Medium – May occur in time</td>
<td>High</td>
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<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Low – Not likely to occur but possible</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>

Risk Management:

The knives and shears used during processing far exceed the 1.0" (25 mm) critical limit; therefore, their accidental inclusion:

- In canned product is impossible in all can sizes, e.g., ¼, ½ and 1 lb.; and
- Would be readily visible to the consumer or end-user in fresh and/or frozen products.

In addition, the durable construction of the blades is not subject to chipping, fragmentation, or breakage.

The risk assessment determined the items constitute a low risk food safety hazard, and the numbering and/or documenting of knives and shears would not have an impact on the potential risk.

The quality control and/or production supervisory personnel shall monitor the supply and usage (i.e., the need to replenish the supply of the utensils to employees) of the utensils using a pre-determined scheduled basis. Any abnormal usage or loss of processing utensils is investigated and discussed with employees.
The numbering and/or documentation of the issuance and return of knives and shears may be considered a best management practice or management tool to control the expenses associated with replacing the utensils.

In addition, customer complaints are reviewed and evaluated for potential problems associated with knives and shears, and corrective action taken as deemed appropriate.

Risk Communication:

The proper use, maintenance, and return of knives and shears at the end of the shift should be discussed with production employees during pre-season employee training.

Abnormal usage or loss of utensils must be discussed with employees to determine the reasons causing such issues.

If warranted, the established procedures shall be discussed with individuals when infractions occur to ensure compliance with the policies, and discipline action taken if necessary.