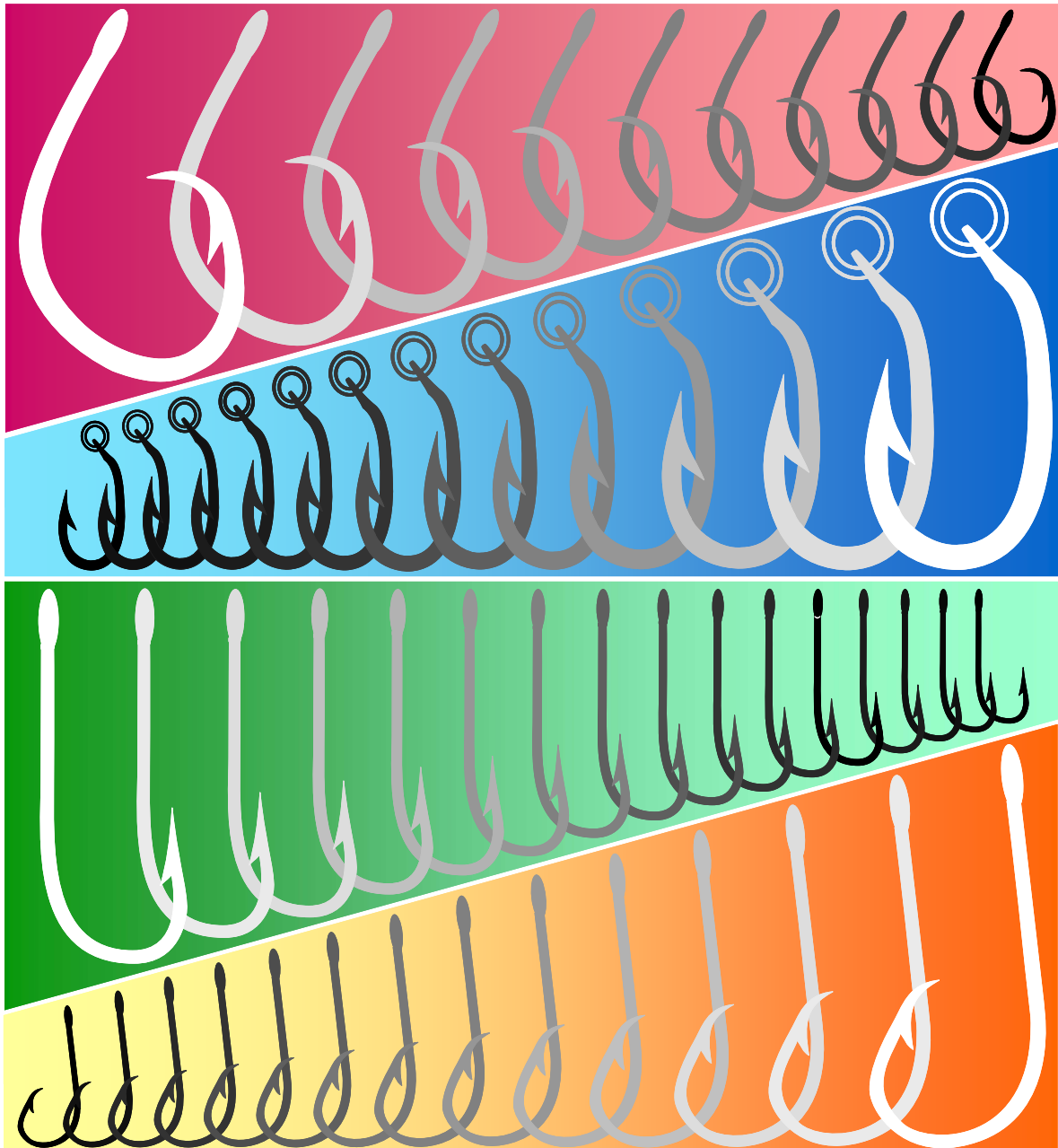


**Inter-American Tropical Tuna Commission
Comisión Interamericana del Atún Tropical**

**HOOKS USED IN ARTISANAL LONGLINE FISHERIES
OF THE EASTERN PACIFIC OCEAN**

**ANZUELOS UTILIZADOS EN LA PESCA ARTESANAL CON
PALANGRES EN EL OCÉANO PACÍFICO ORIENTAL**



**By/Por
Takahisa Mituhasi and/y Martín Hall**



La Jolla, California

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OBJECTIVES AND PREPARATION OF THIS CATALOG

Fisheries and bycatch studies frequently require measures of catch per unit of effort, and a critical need to produce consistent time series is the standardization of the effort measures. For longlines, captures per 1000 hooks are commonly used. Artisanal fisheries show a large variability of types and sizes in time and space, caused by problems of hook availability and costs, multiple targets, etc. As hook selectivity depends on its shape and size, both the catch per unit of effort of the target species, and of the incidental captures are affected by the hook used.

To maintain the technical information needed on the hooks, it is necessary to identify the types in use to compare their performances, for mitigation studies, and others. It was decided to produce a visual catalog of hooks in use in the Eastern Pacific coastal region from Mexico to Peru, similar to those created by Beverly and Park (2009) for the western Pacific, and Yokota *et al.* (2006) for pelagic longline fisheries. Samples were collected throughout the region with the cooperation of the fisheries agencies of the countries involved, and images were produced in the true size, so that scientists or observers could easily identify the hooks in use by placing a hook over the images, until a match was found.

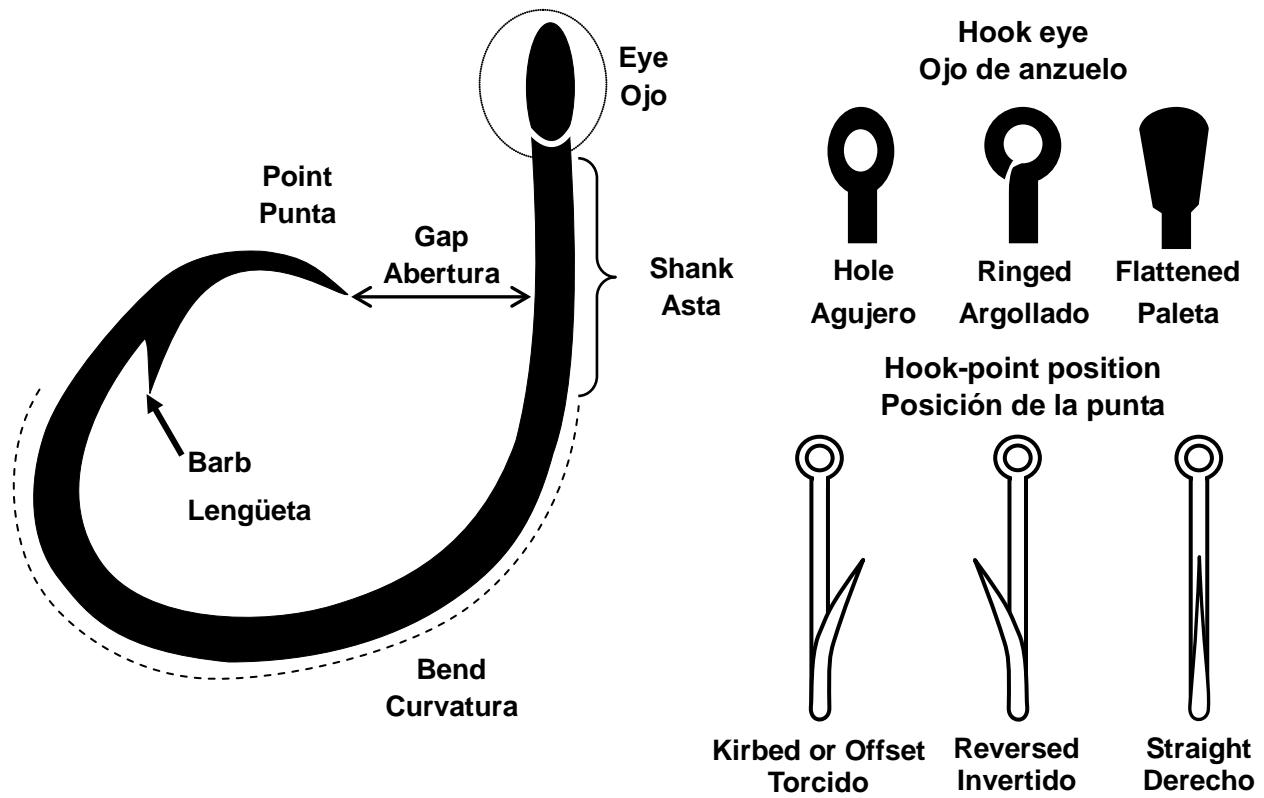
We would appreciate cooperation of all those interested in the catalog, in providing us with additional models or sizes that they may encounter, and that are not represented in this first set, to add them to the catalog.

OBJETIVO Y PREPARACION DE ESTE CATALOGO

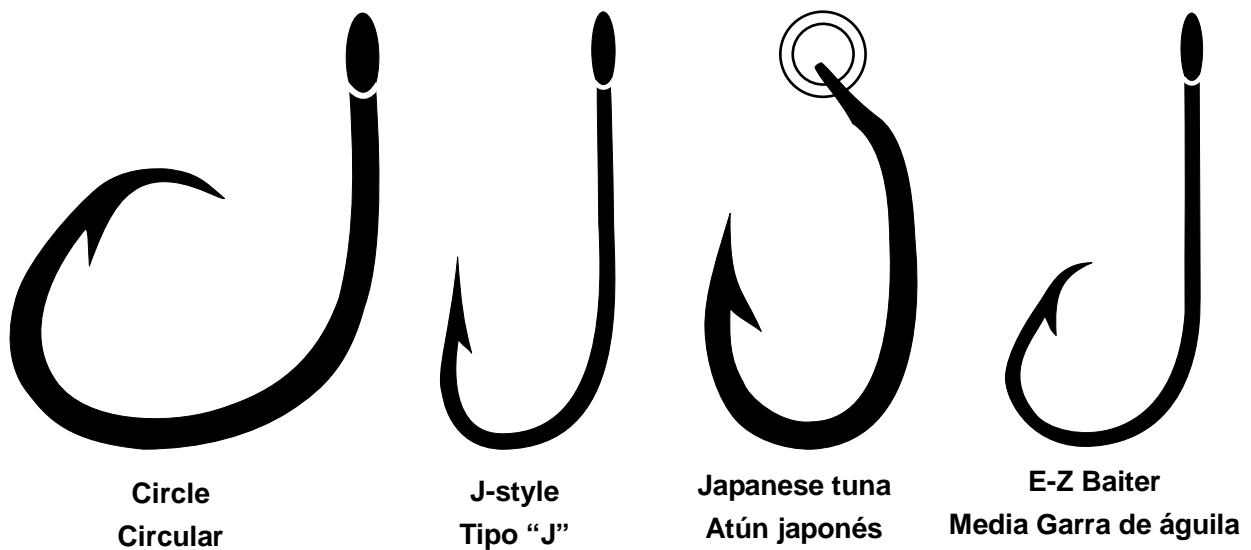
Los estudios de pesquerías y de capturas incidentales requieren a menudo medidas de captura por unidad de esfuerzo, y una de las necesidades críticas para generar series de tiempo consistentes, es que se estandarice la medida de esfuerzo pesquero. En artes de palangre se utilizan comúnmente medidas de capturas por 1000 anzuelos. Las pesquerías artesanales muestran una gran variabilidad de tipos y tamaños de anzuelos en el tiempo y en el espacio, causada por problemas de disponibilidad y costo de anzuelos, objetivos múltiples de la pesca, etc. Como la selectividad del anzuelo depende de su forma y tamaño, tanto la captura por unidad de esfuerzo de las especies objetivo como la de especies capturadas incidentalmente son afectadas por el anzuelo utilizado.

Para mantener la información técnica necesaria sobre los anzuelos, se requiere identificar los tipos en uso y comparar su desempeño, para estudios de mitigación y otros. Se decidió producir un catálogo visual de anzuelos en uso en la región costera del Pacífico Oriental desde México hasta Perú, similar a los creados por Beverly y Park (2009) para el Pacífico Occidental y Yokota *et al.* (2006) para la pesca de palangre pelágico. Se colectaron muestras en toda la región con el apoyo de las agencias de pesca de los países, se produjeron imágenes que son reproducidas en el tamaño real de los anzuelos, para que científicos u observadores puedan identificar fácilmente el anzuelo en uso, simplemente colocando un anzuelo sobre las imágenes, buscando la coincidencia.

Agradeceremos la cooperación de todos los interesados en el catalogo que pudieran hacernos llegar modelos o tamaños que encuentren y que no estén incluidos en este primer conjunto de anzuelos, para agregarlos al catálogo.



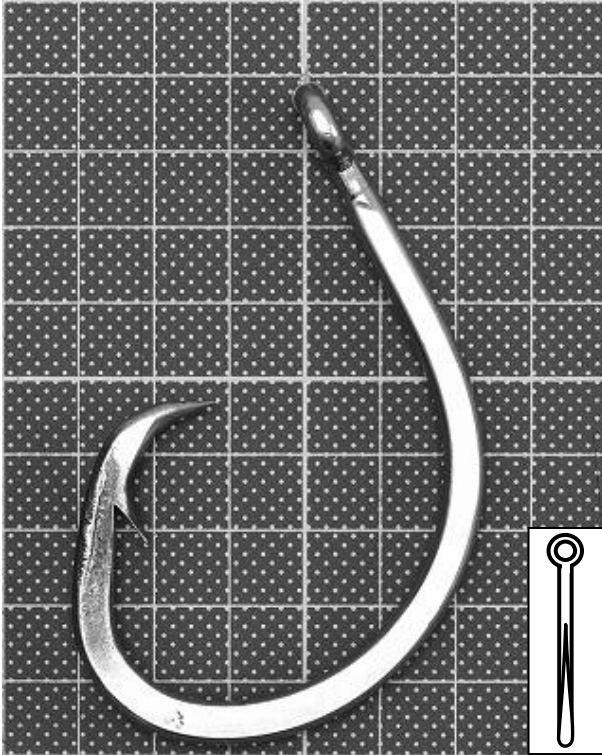
Key terms for describing fishing hook
Términos claves para describir el anzuelo



Types of hook design
Tipos de diseño de anzuelos

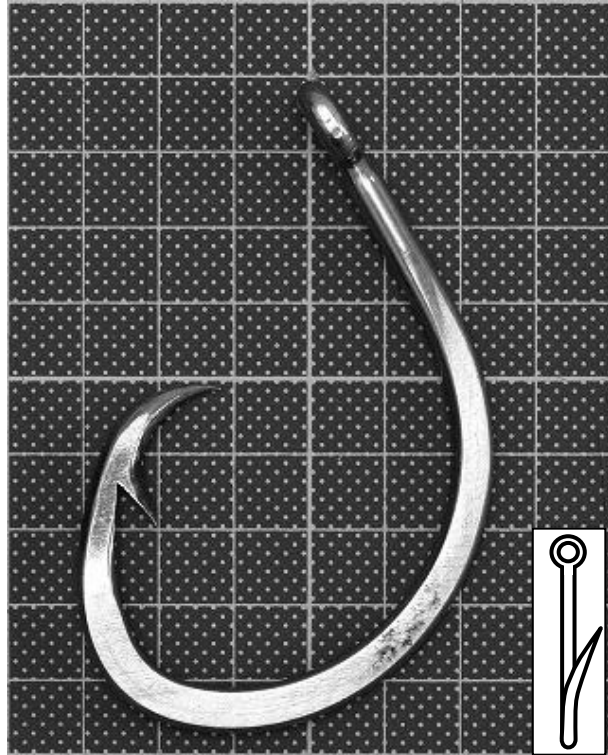
Size/Tamaño 18/0

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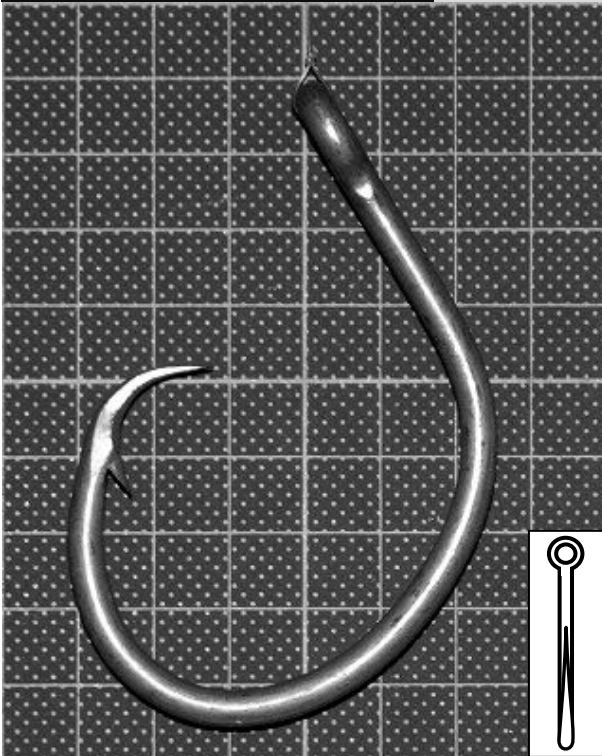
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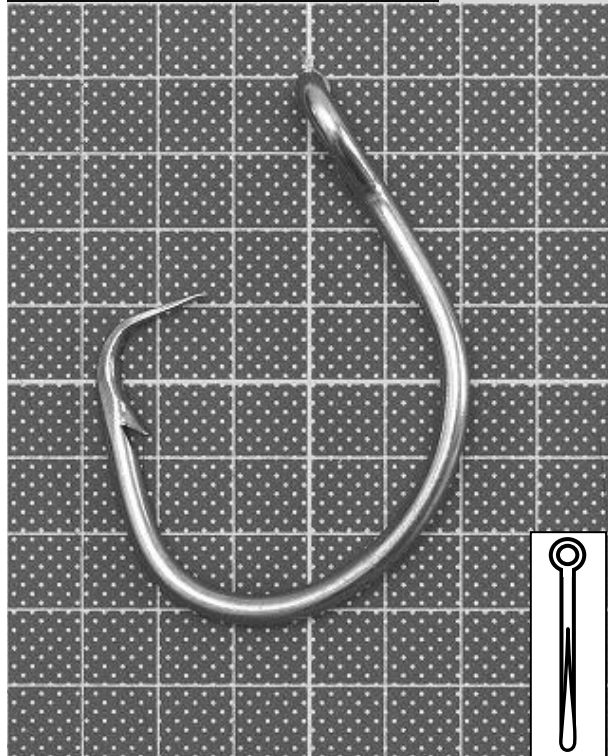
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C-03



Size/Tamaño 16/0

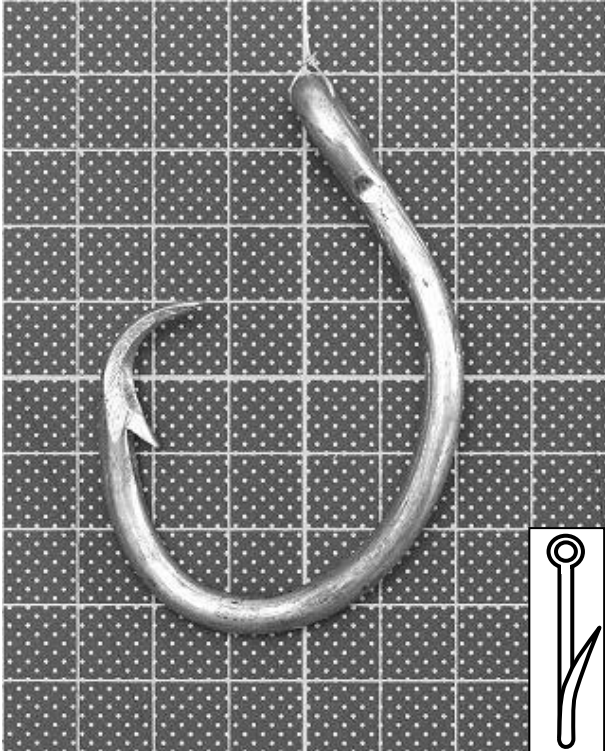
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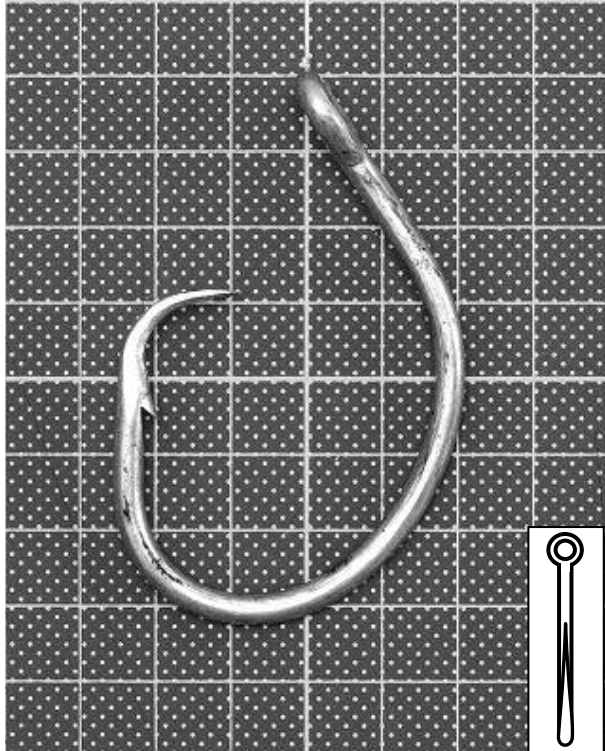
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Circle / Circular

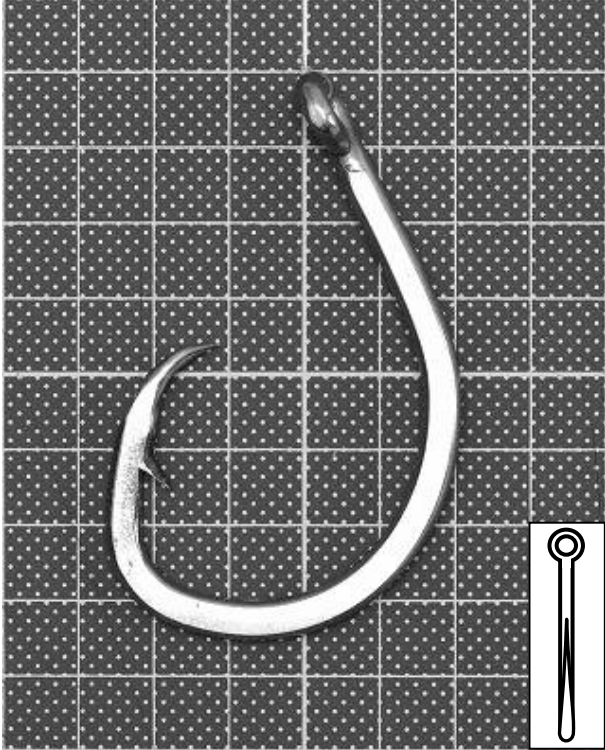
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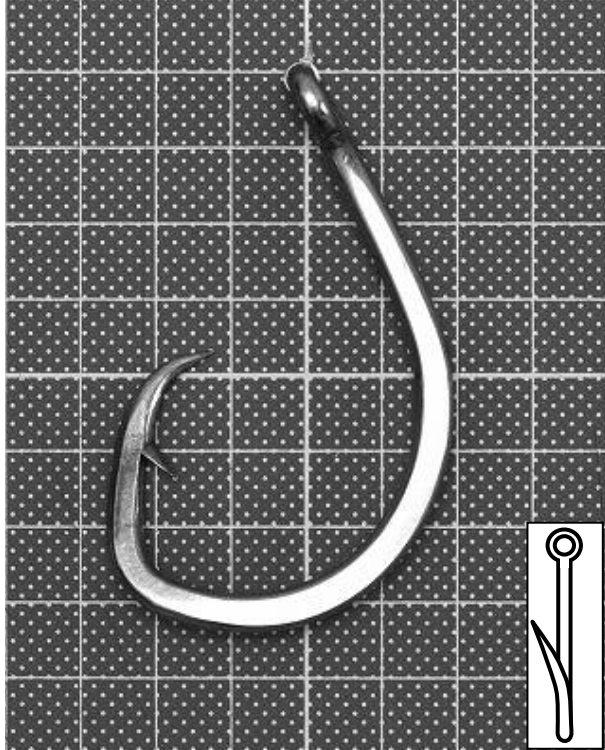
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Size/Tamaño 16/0 C-07

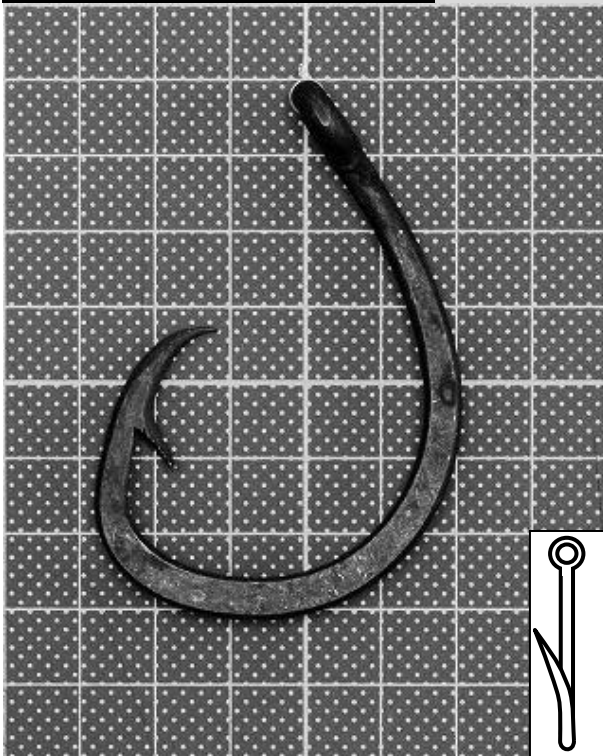


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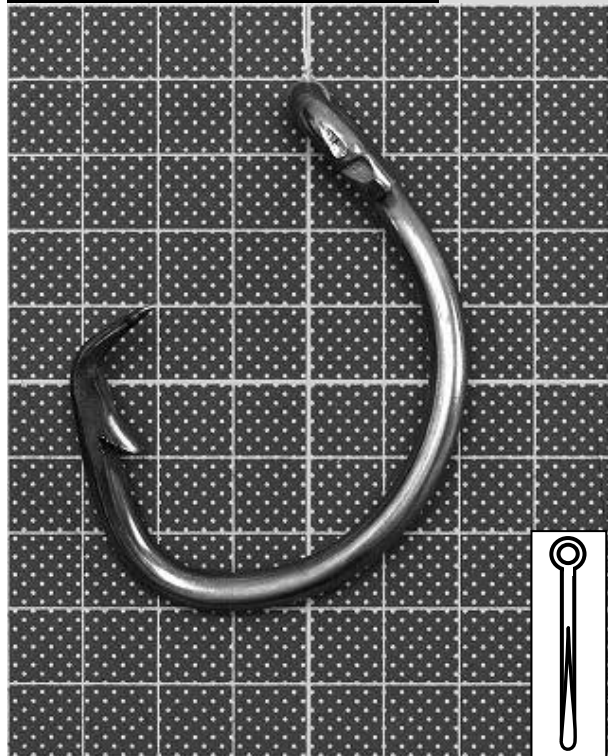
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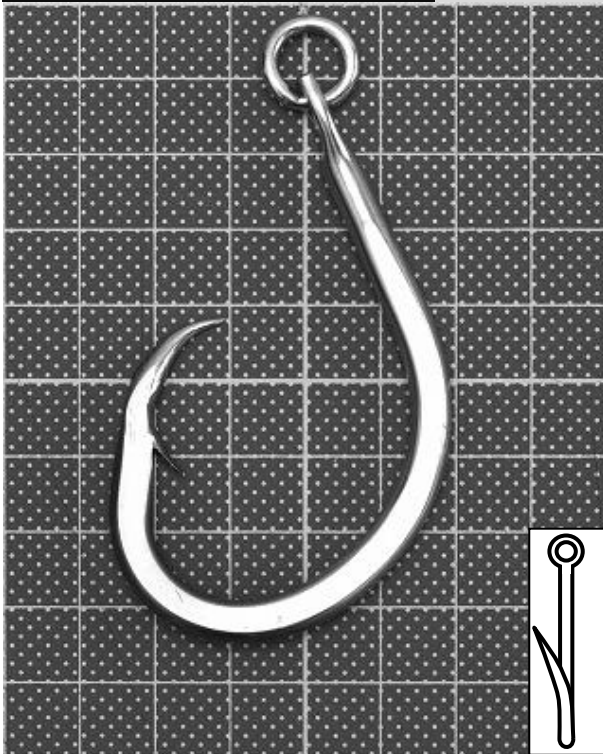
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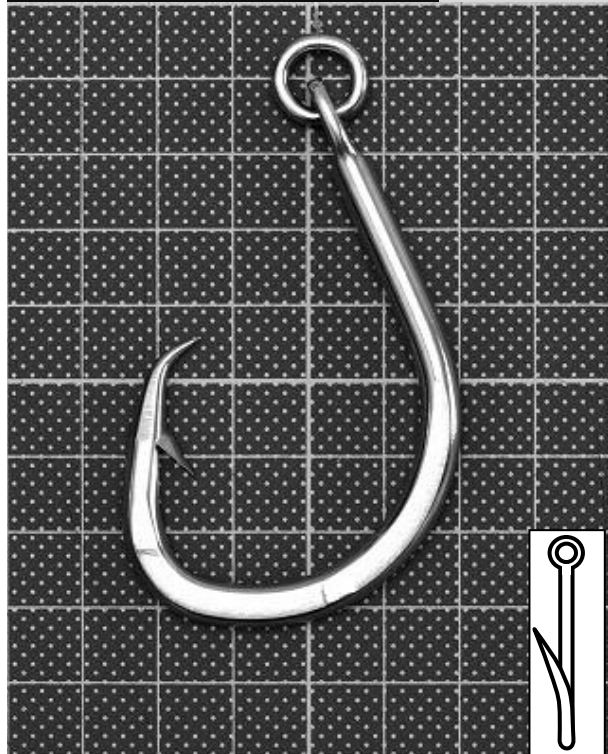
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C-11



Size/Tamaño 16/0

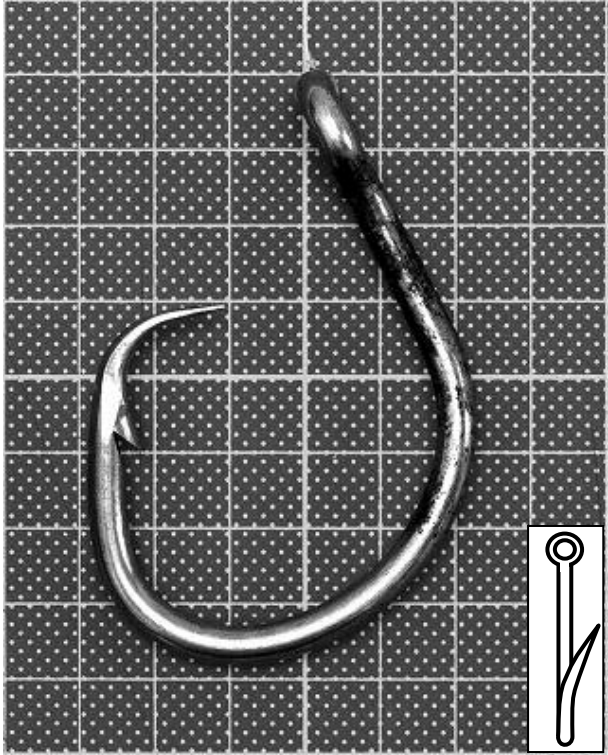
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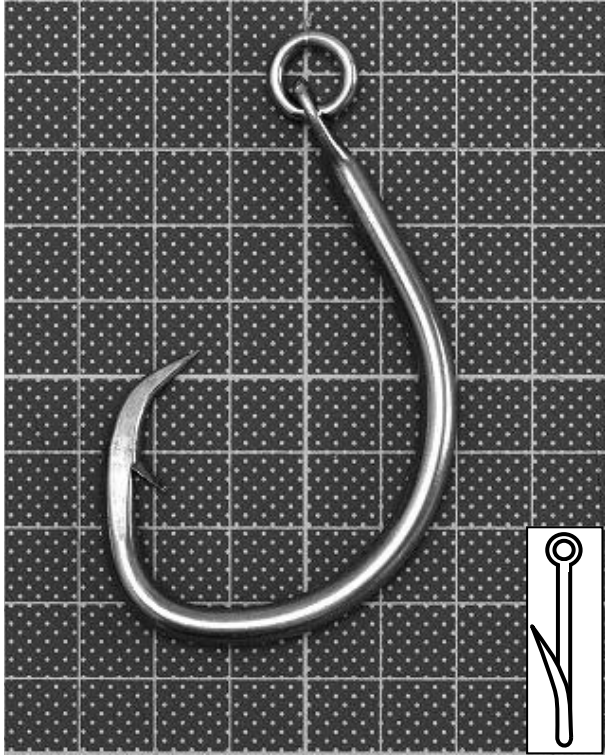
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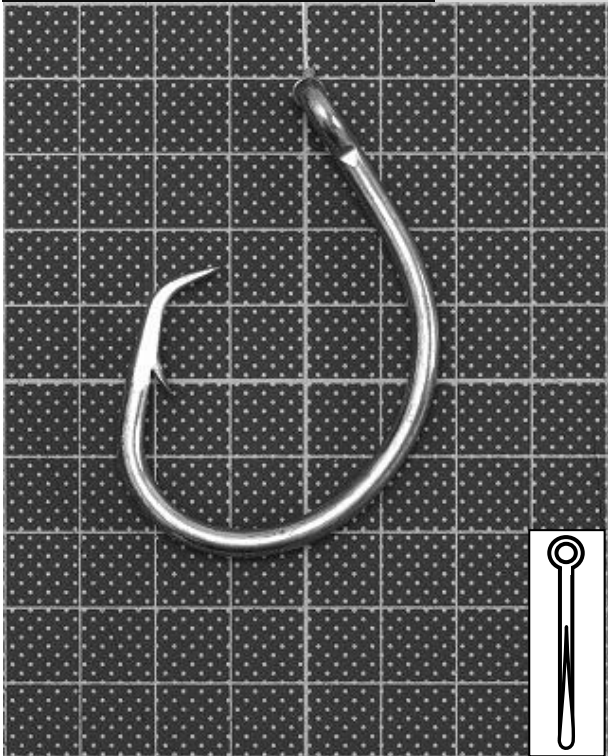
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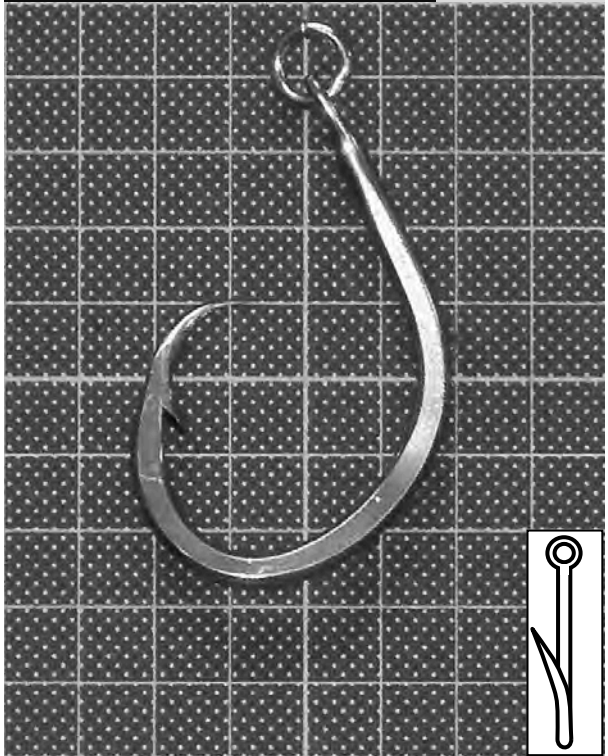
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Size/Tamaño 15/0 C-15

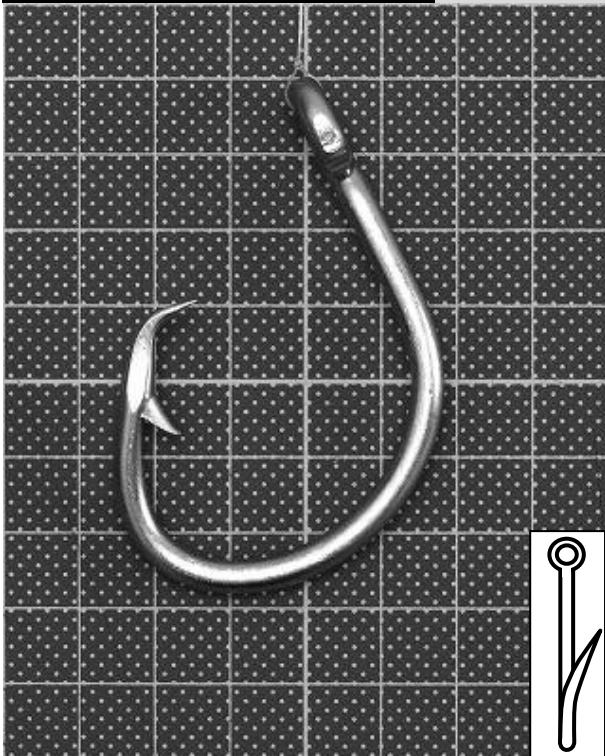


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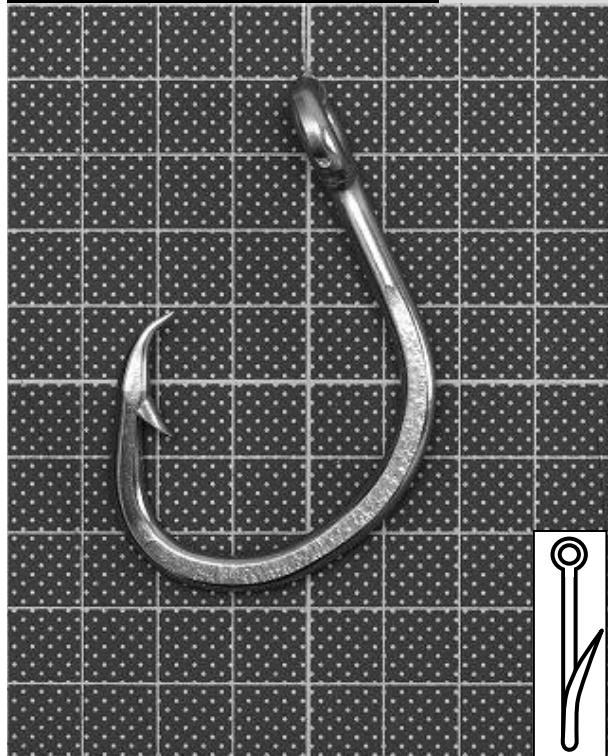
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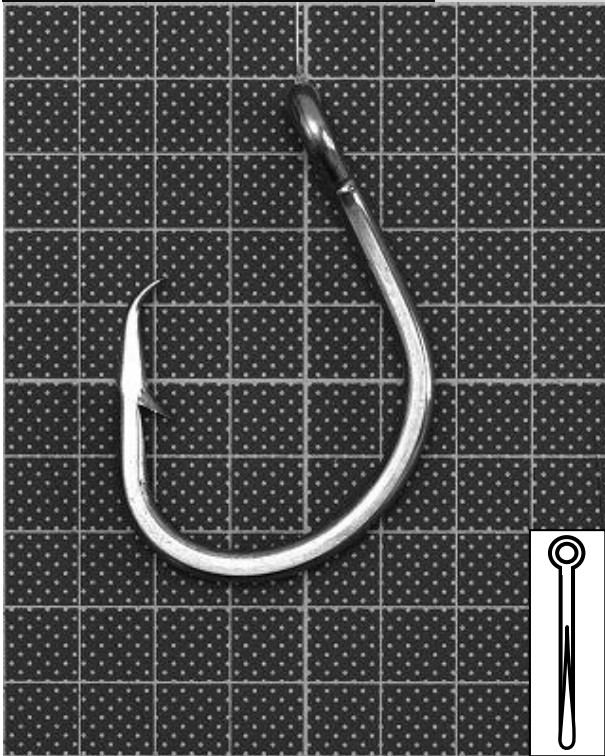
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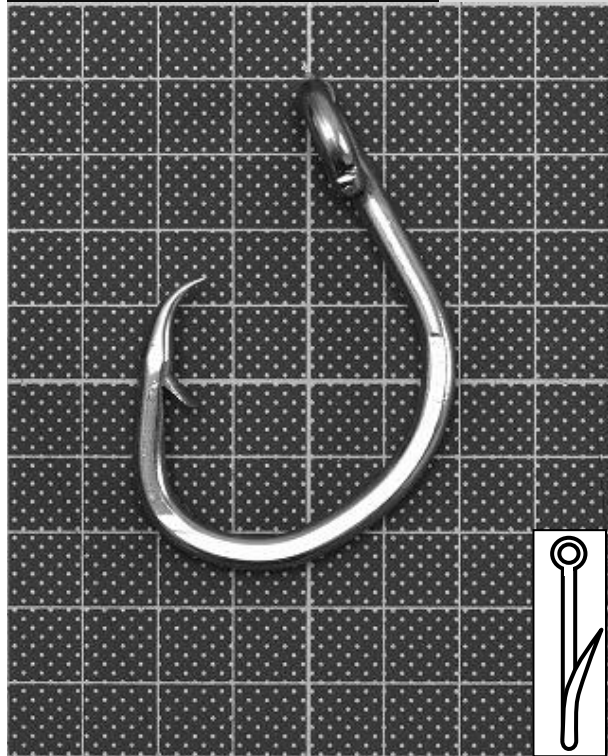
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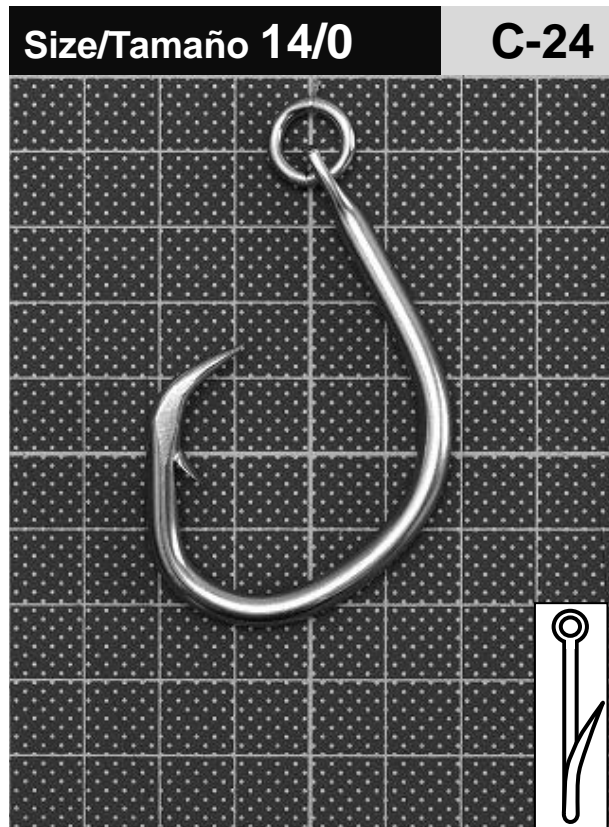
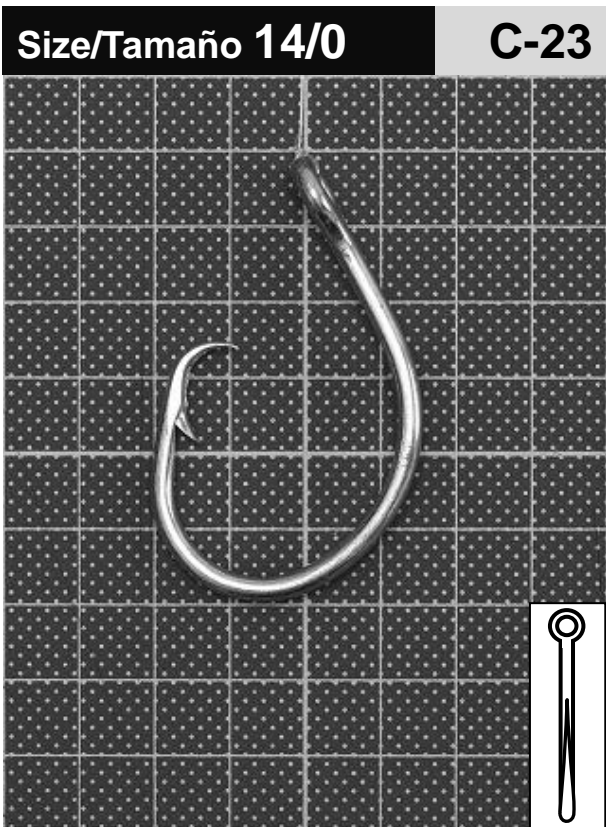
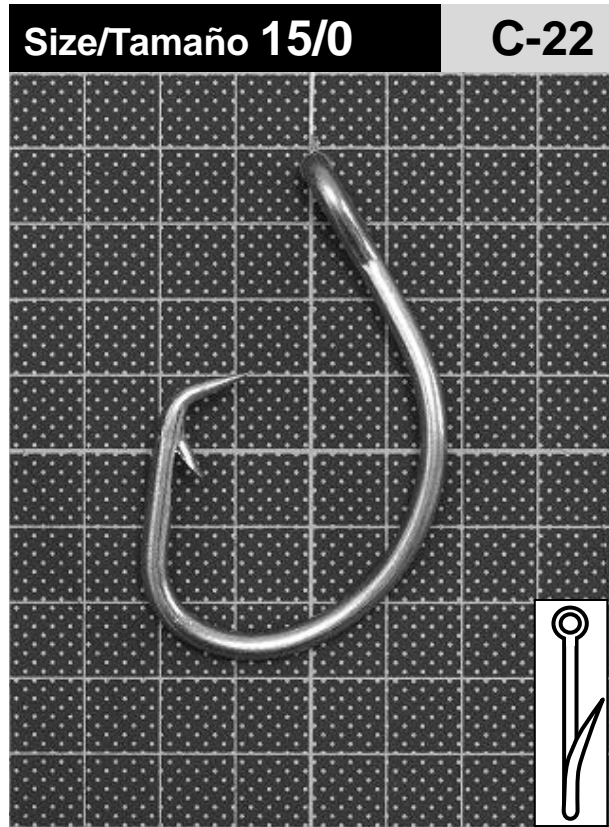
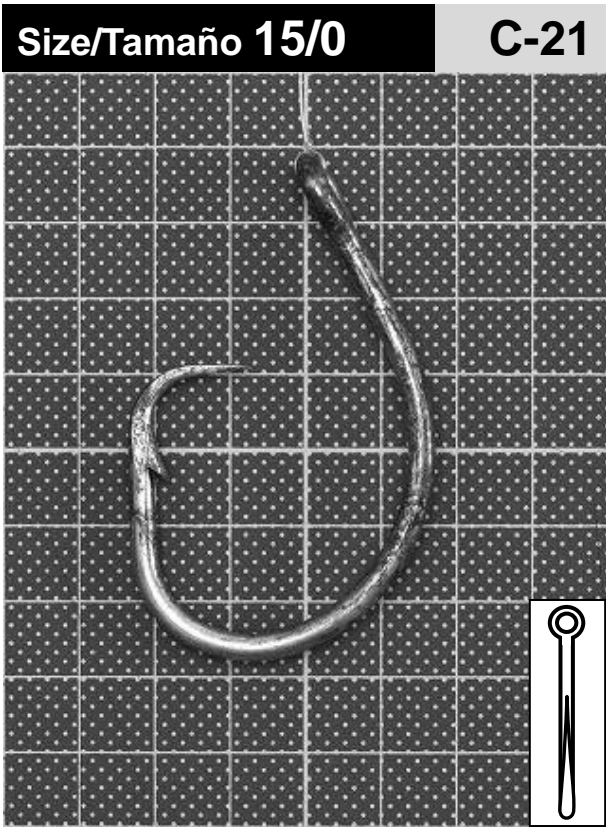
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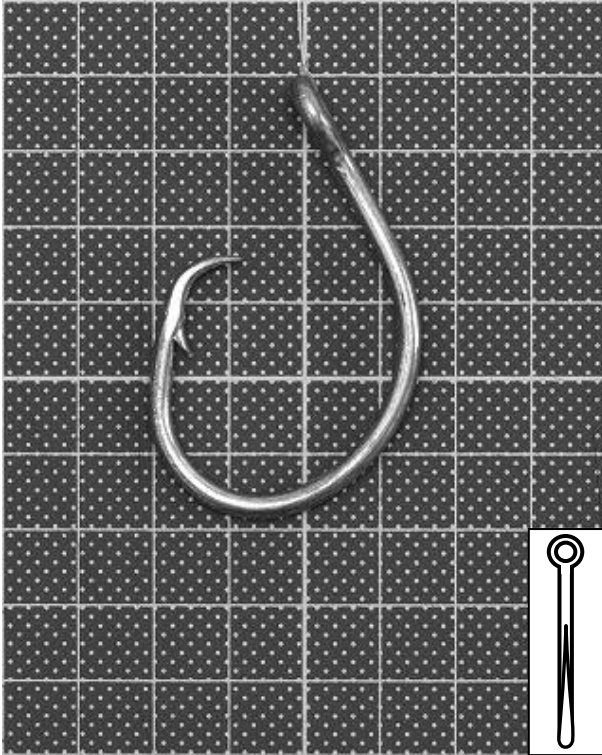
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Circle / Circular



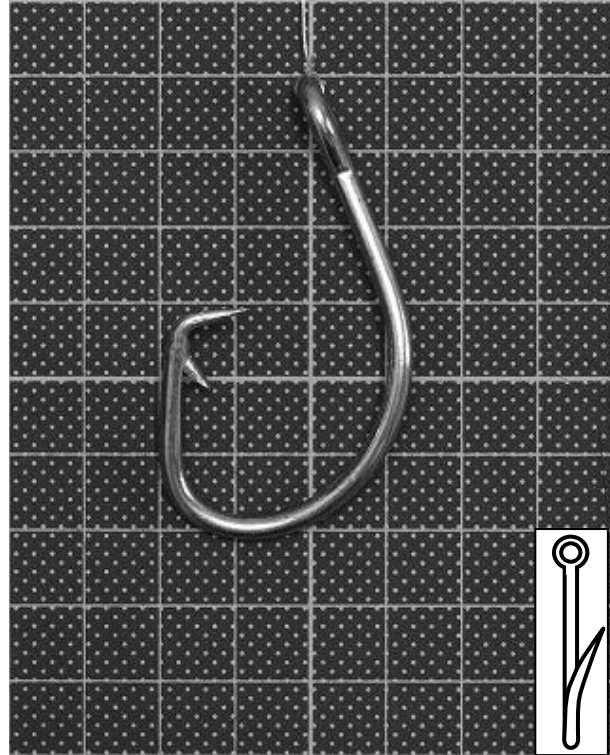
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C-25



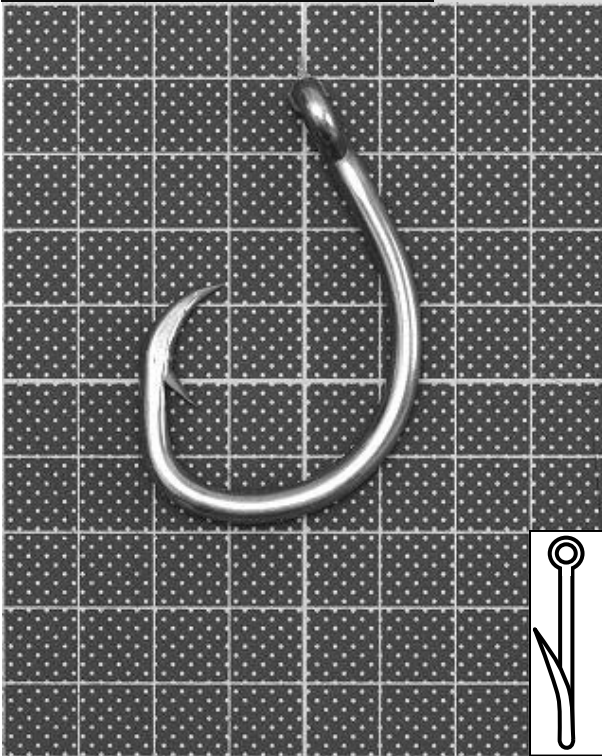
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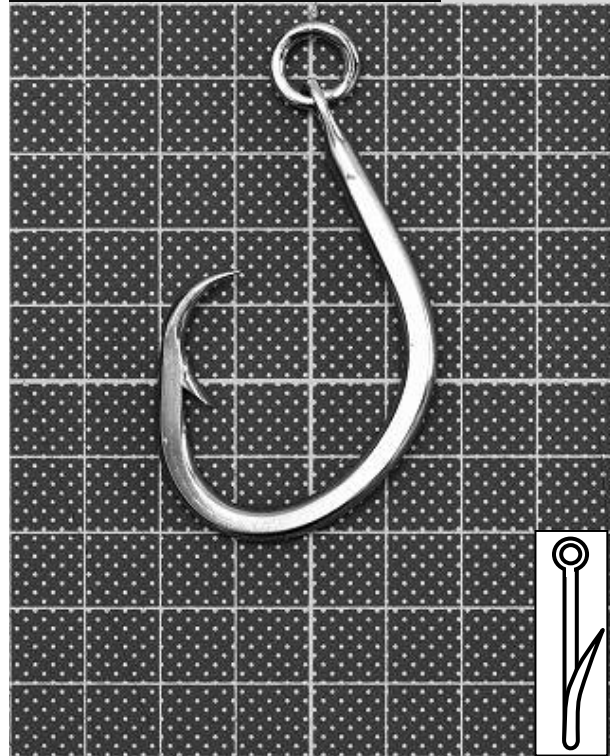
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C-27



Size/Tamaño 13/0

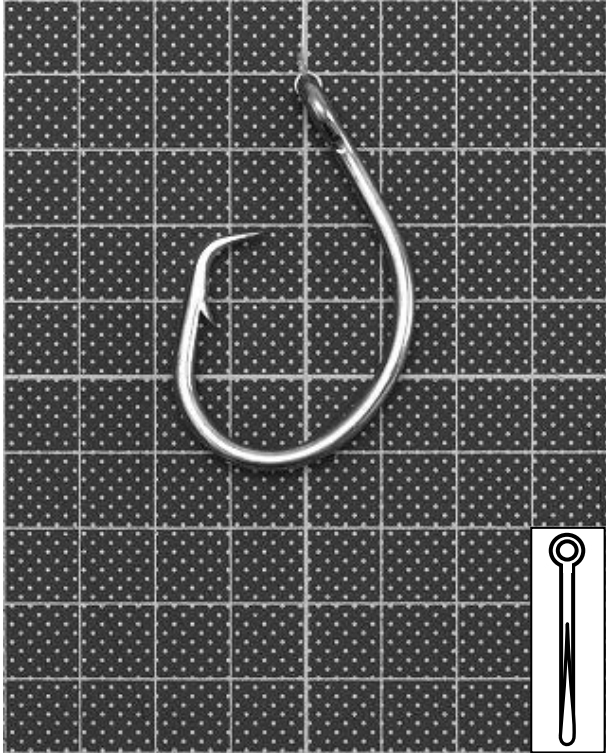
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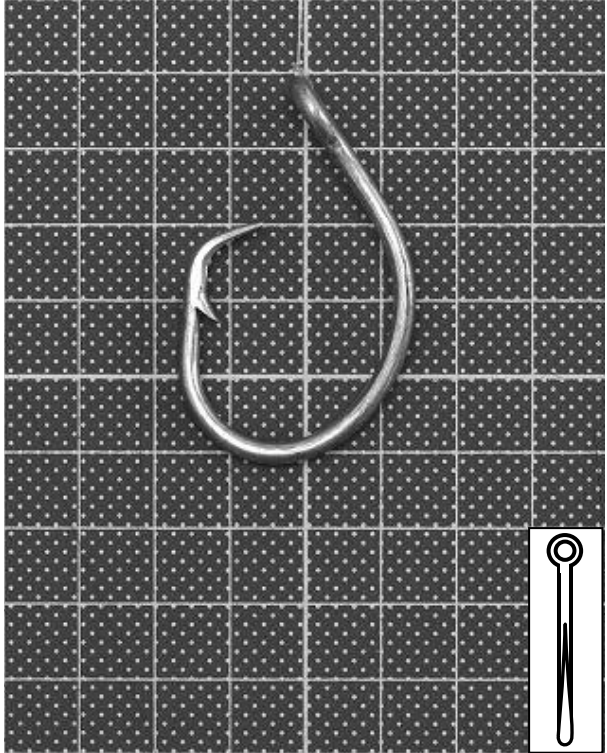
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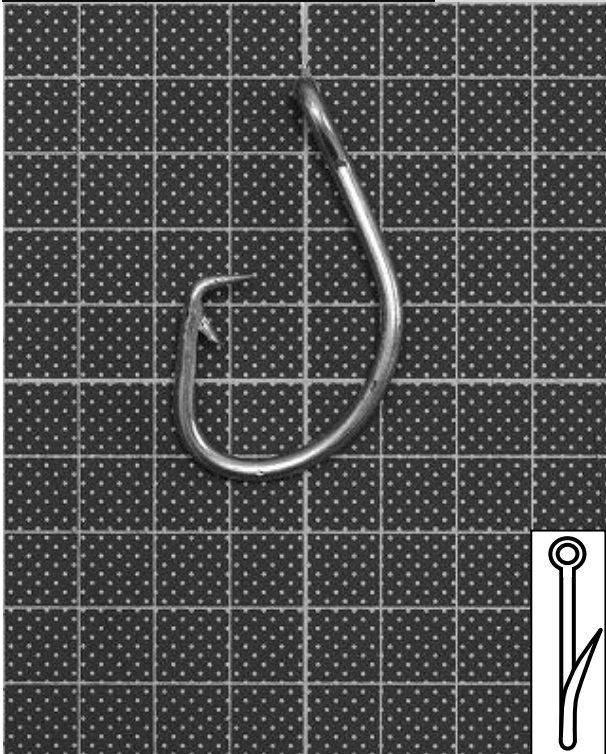
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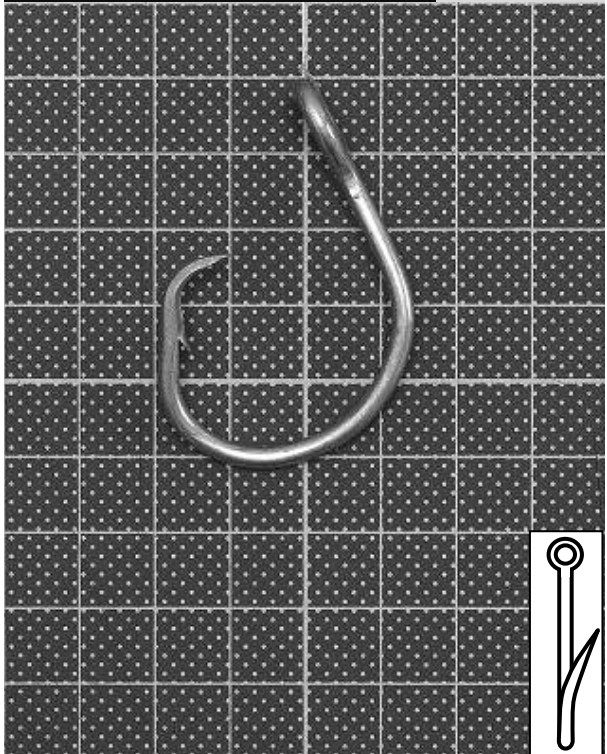
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Size/Tamaño 13/0 C-31

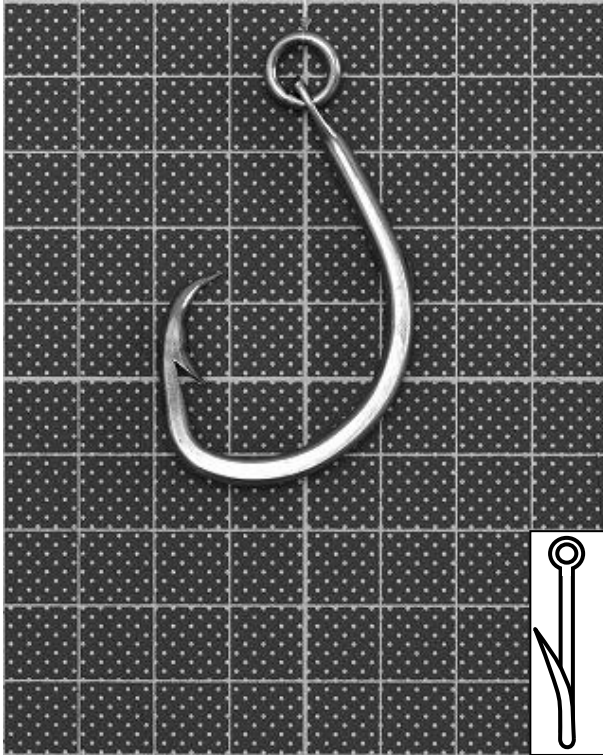


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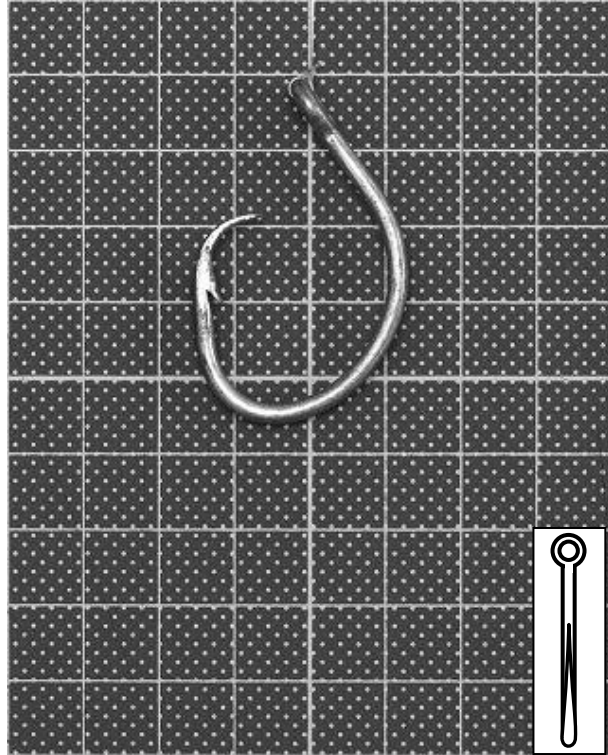
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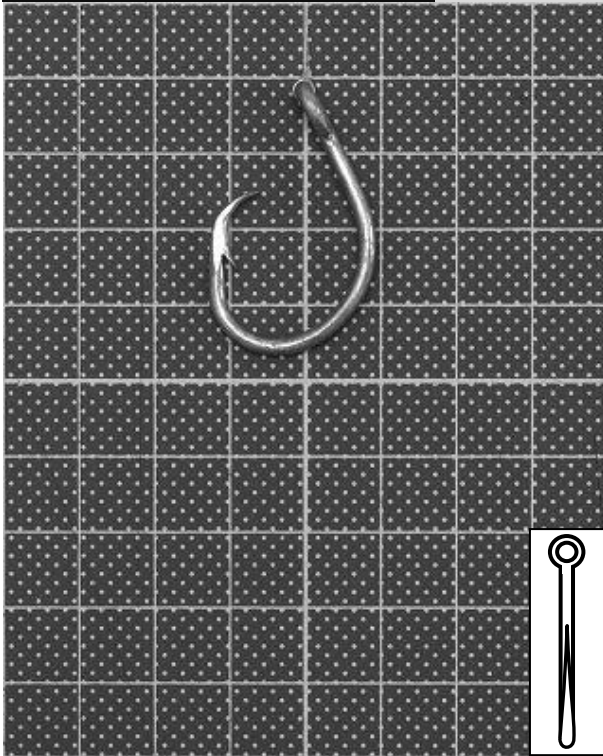
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C-34



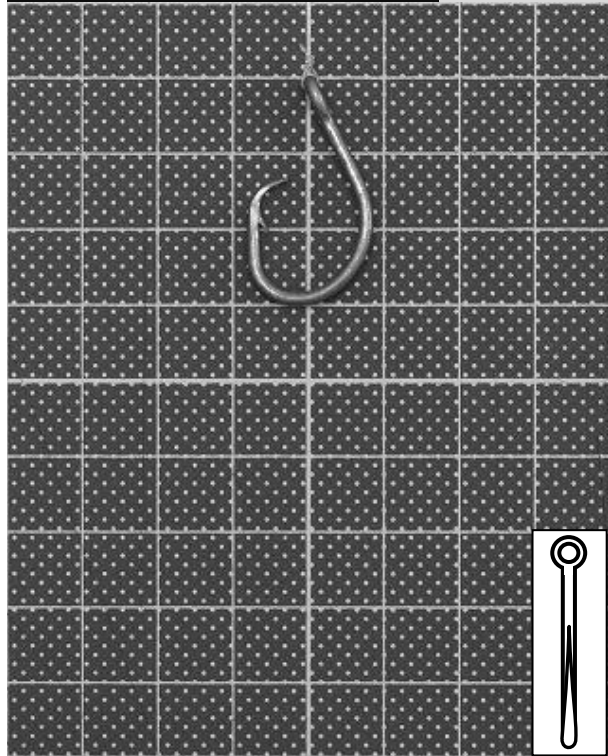
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C-35



Size/Tamaño 9/0

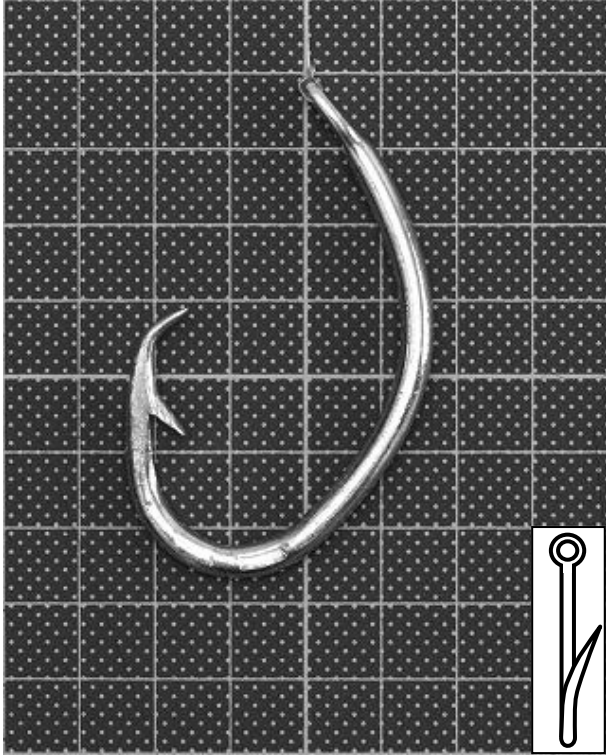
C-36



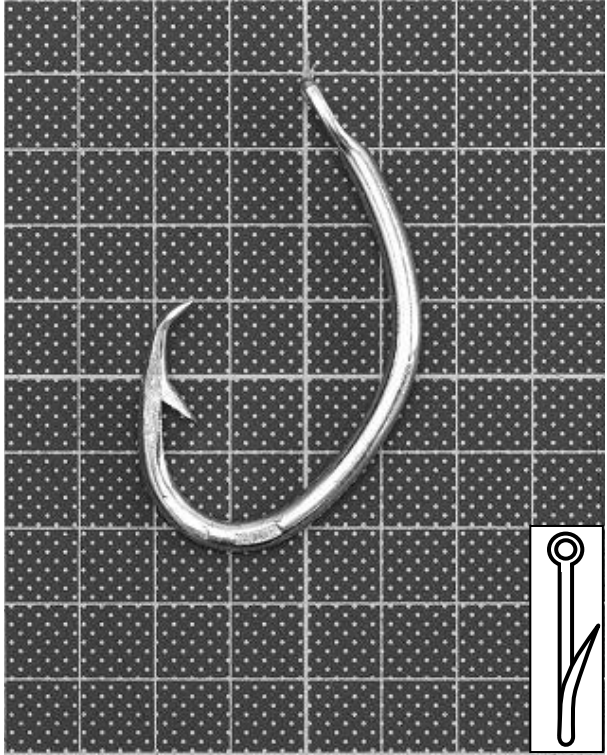
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Circle / Circular

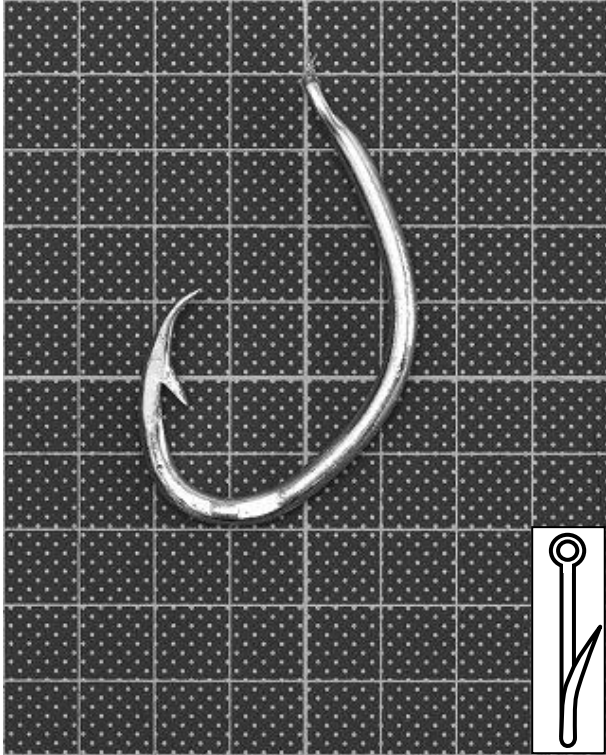
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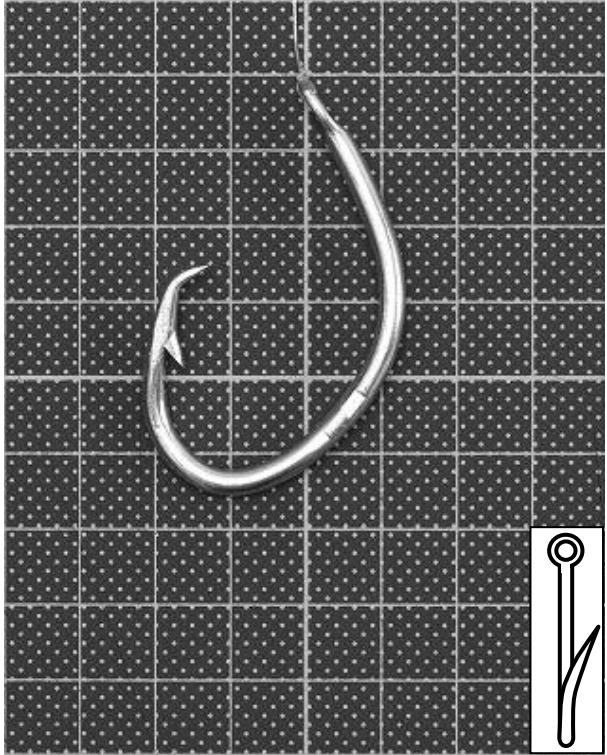
Size/Tamaño 3.8 sun C-38



Size/Tamaño 3.6 sun C-39

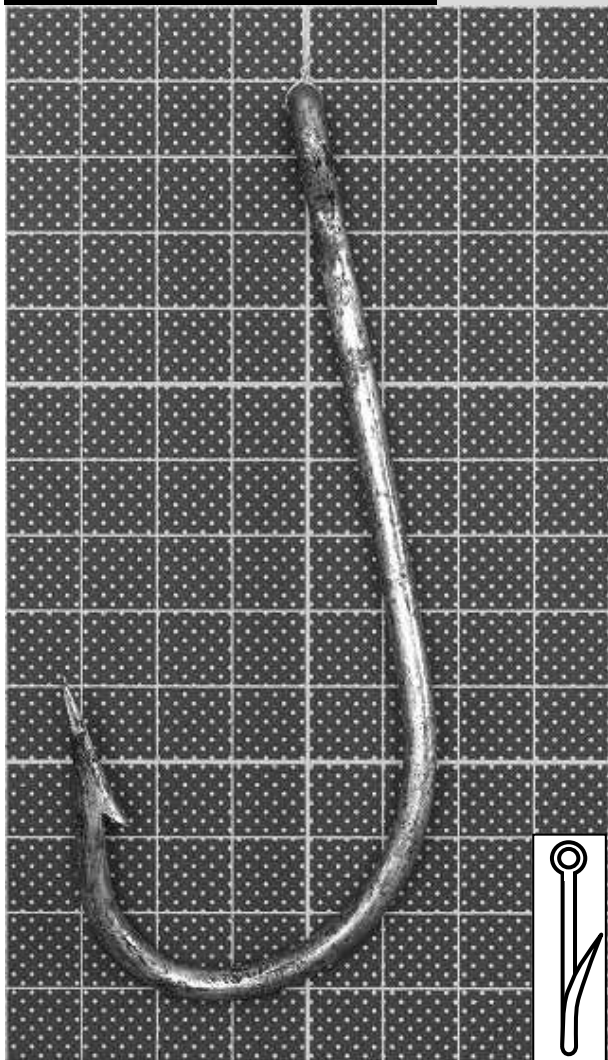


Size/Tamaño 3.4 sun C-40



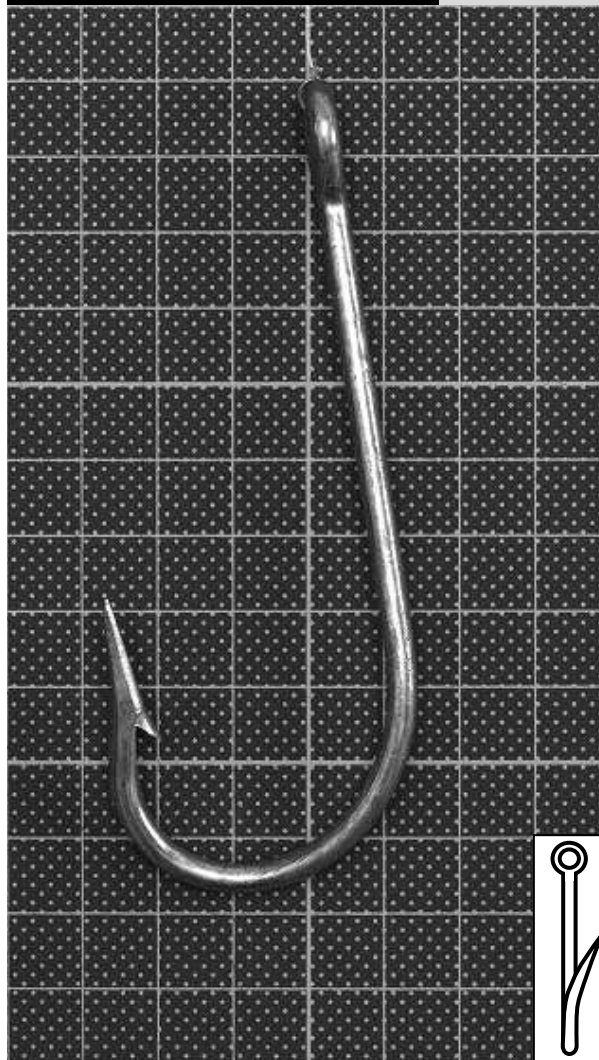
Size/Tamaño 2/0

J-01



Size/Tamaño 1/0

J-02



J

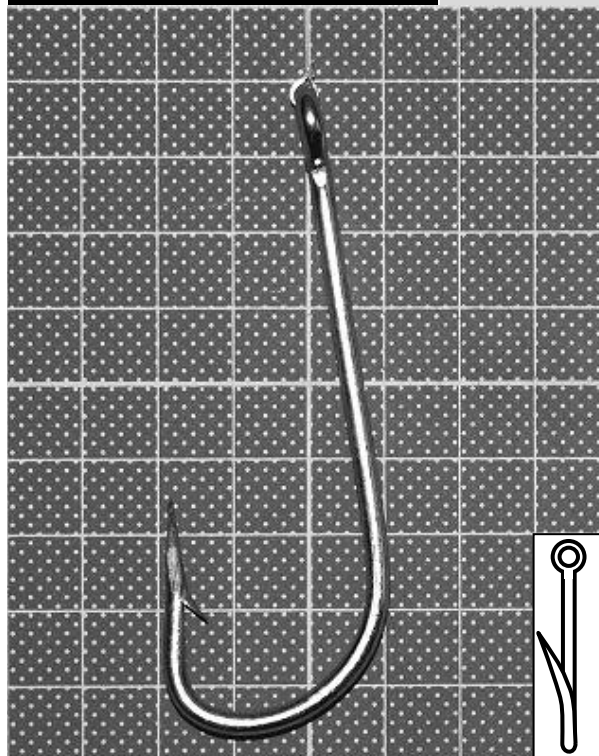
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J-03



Size/Tamaño No. 2

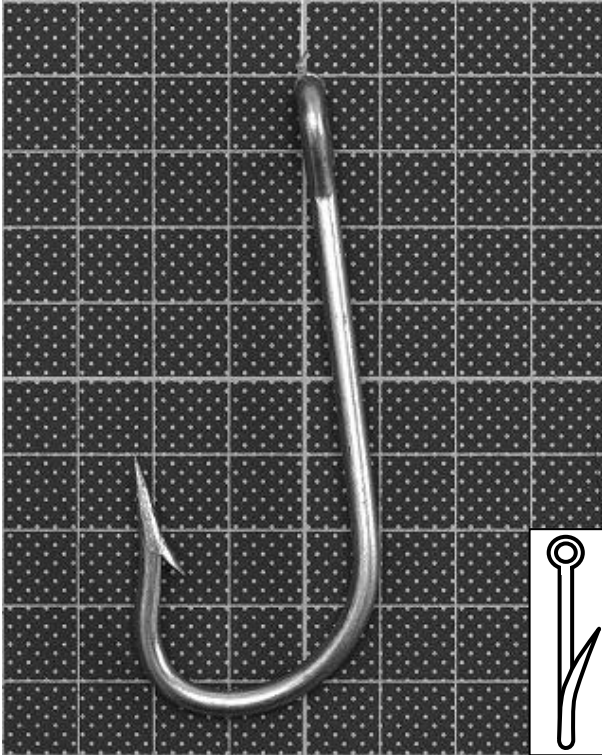
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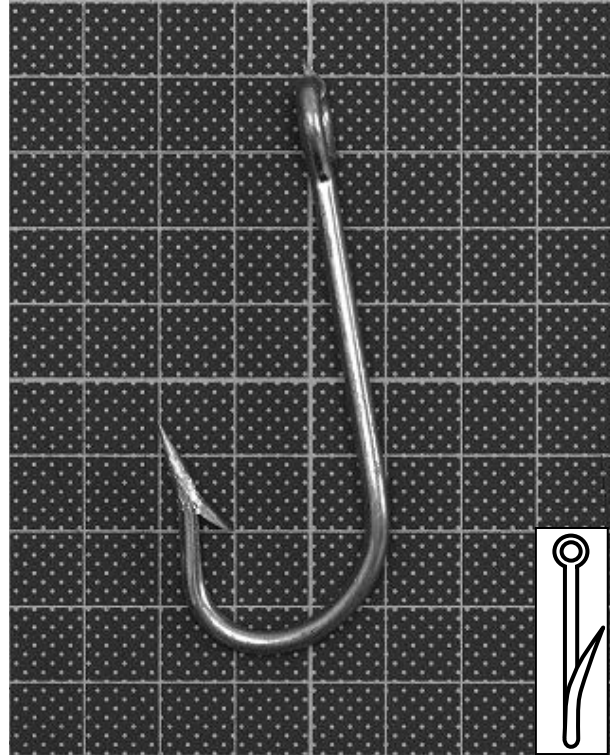
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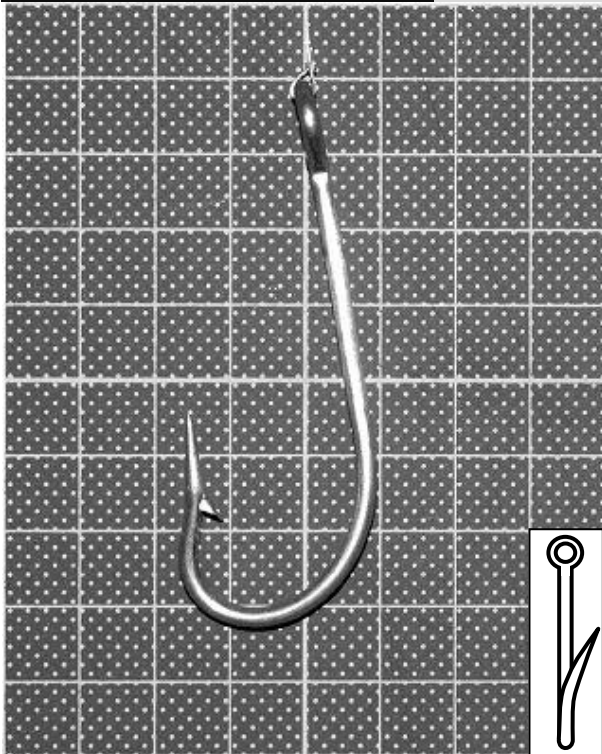
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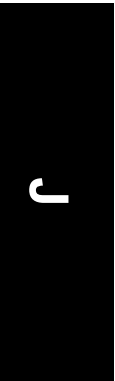
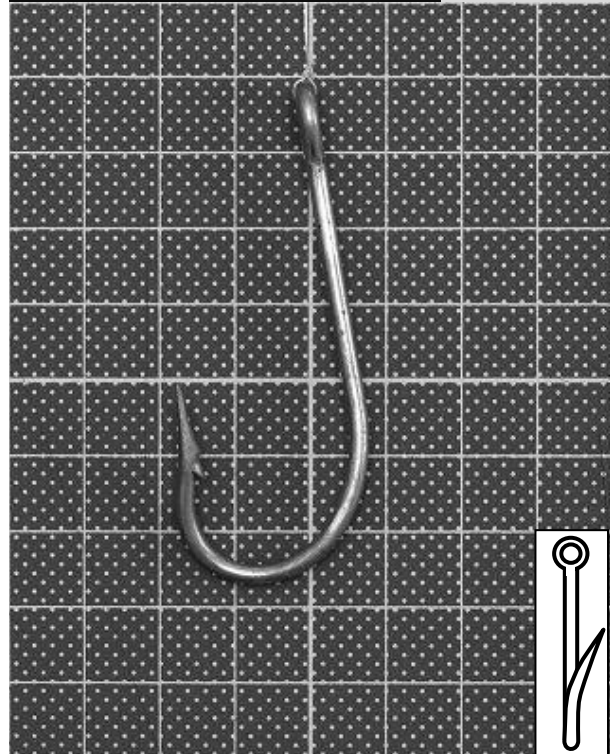
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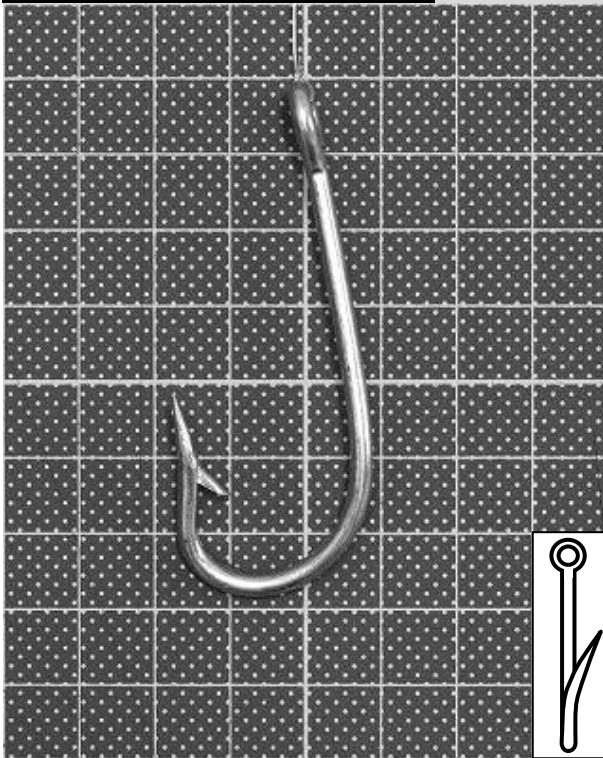
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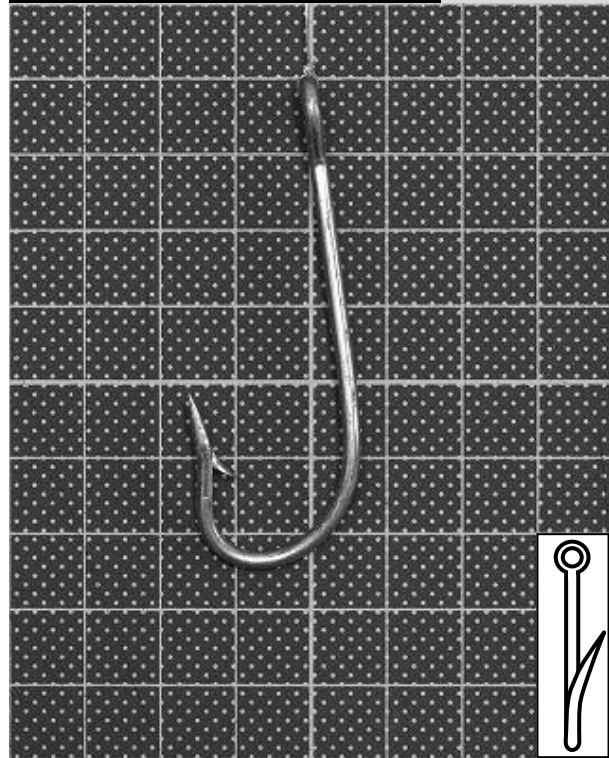
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J-09



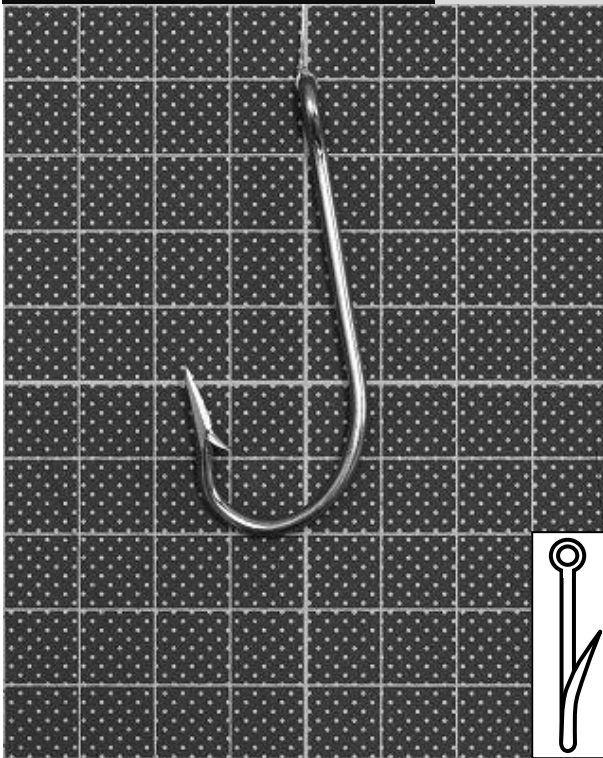
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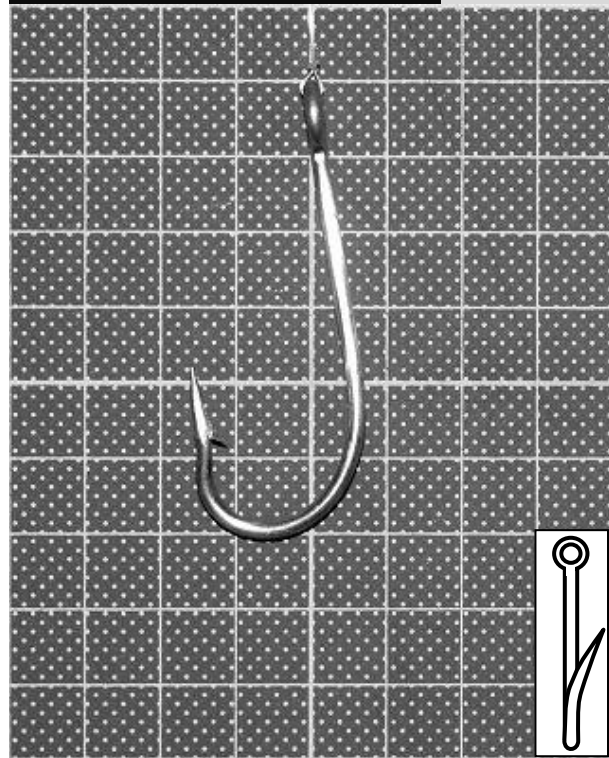
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J-11



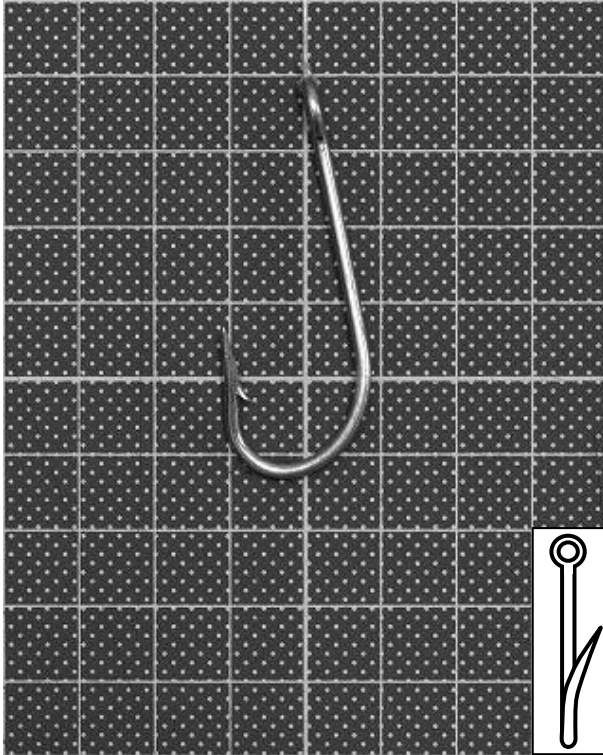
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J-12



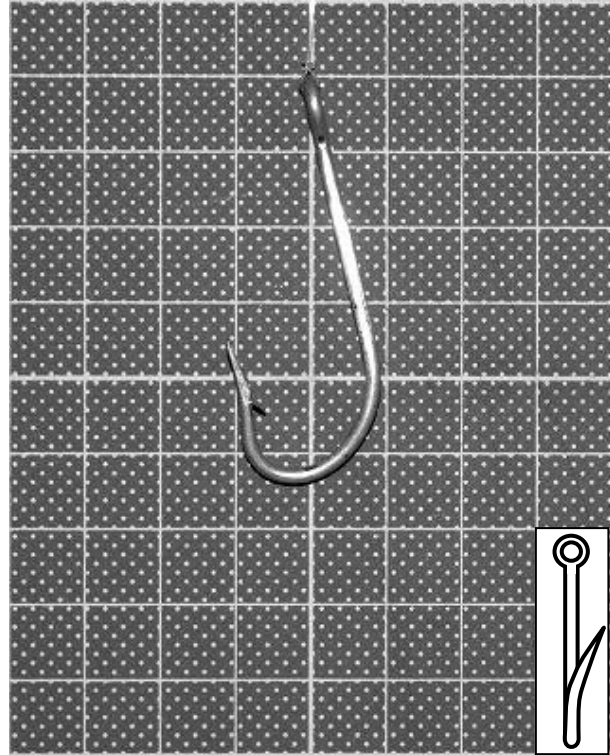
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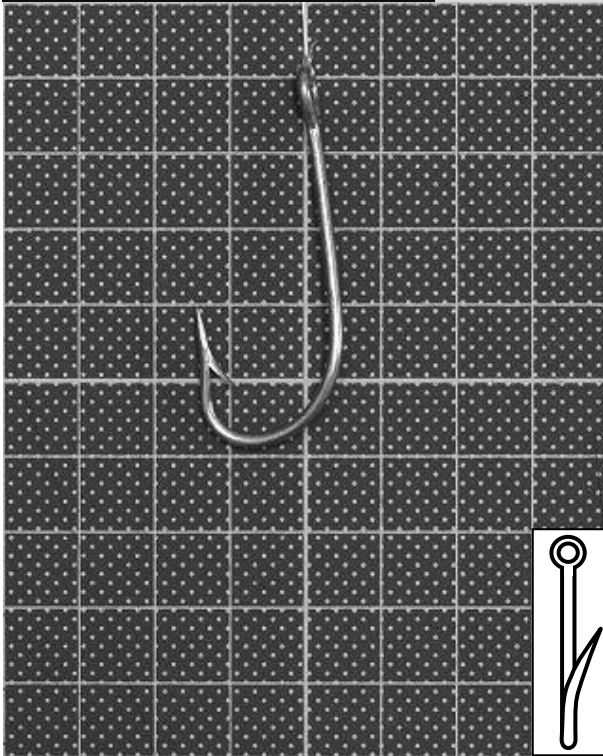
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J-14



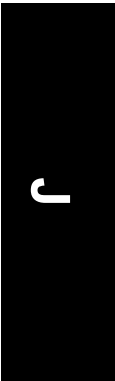
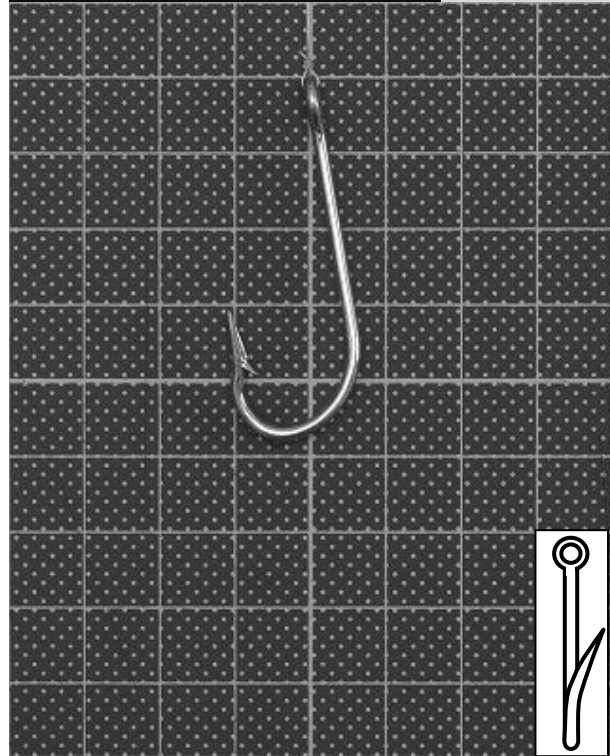
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J-15



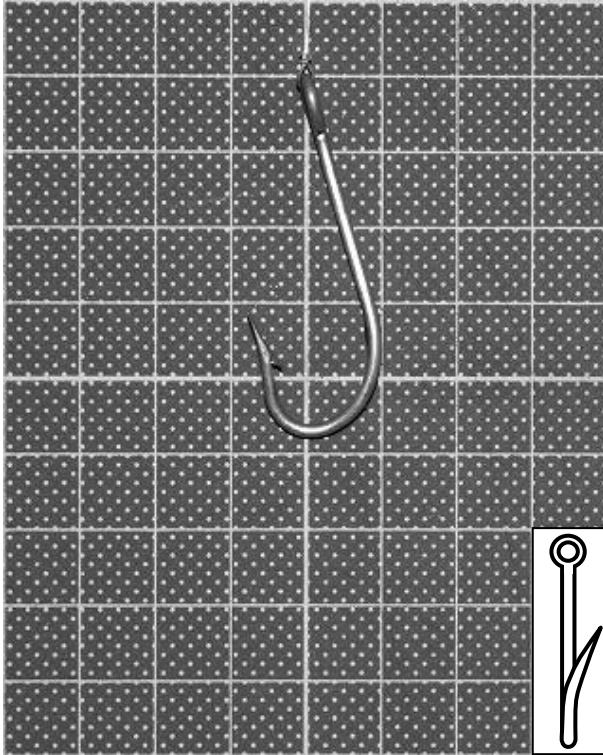
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J-16



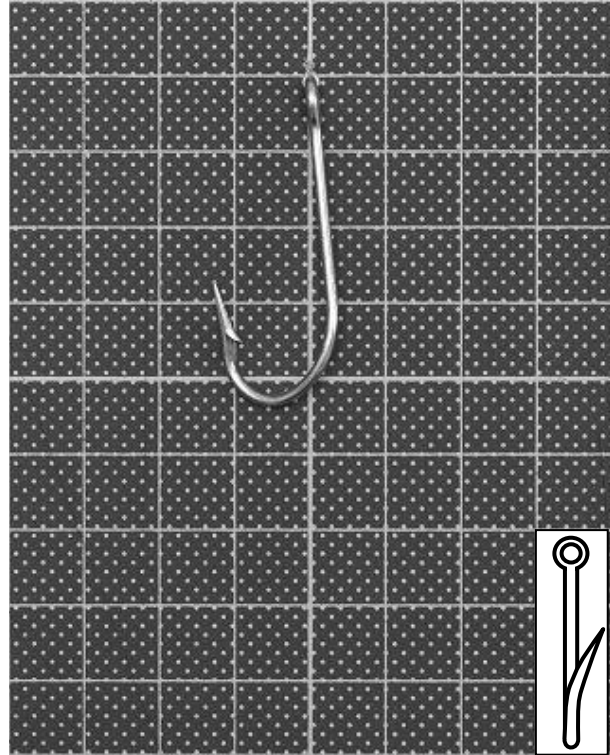
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J-17



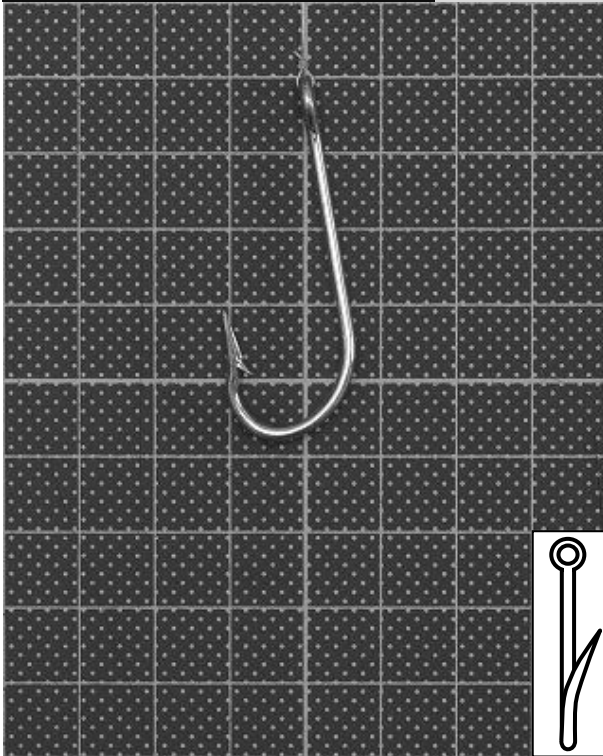
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J-18



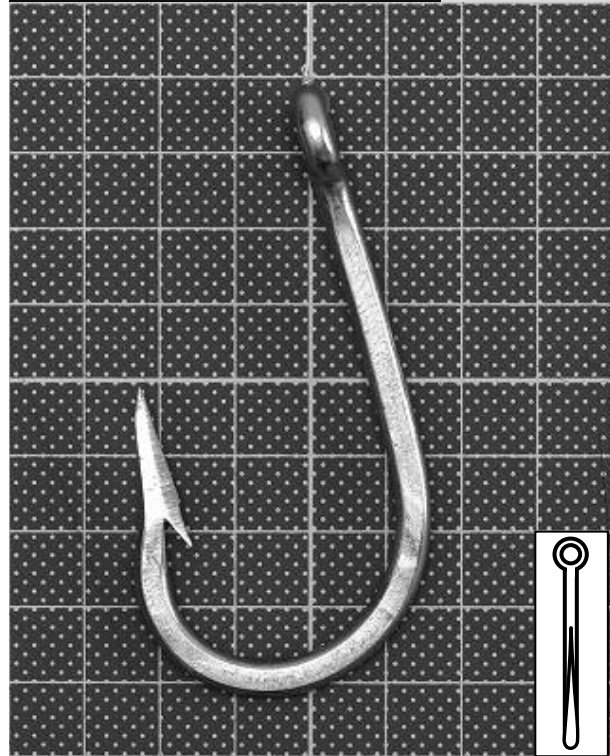
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J-19



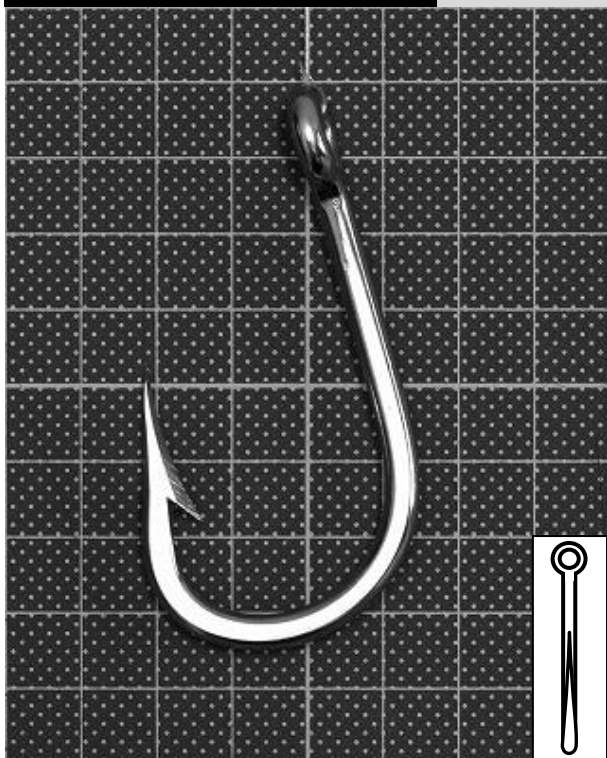
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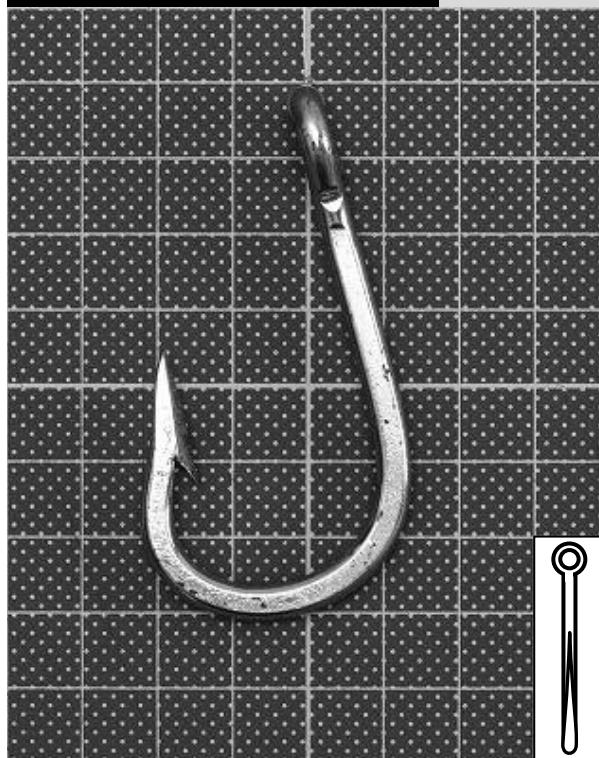
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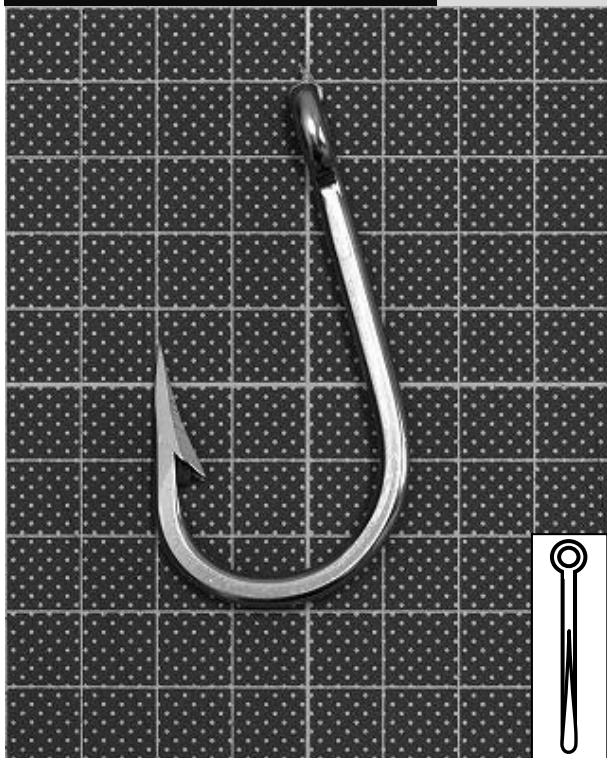
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J-22



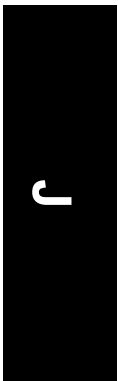
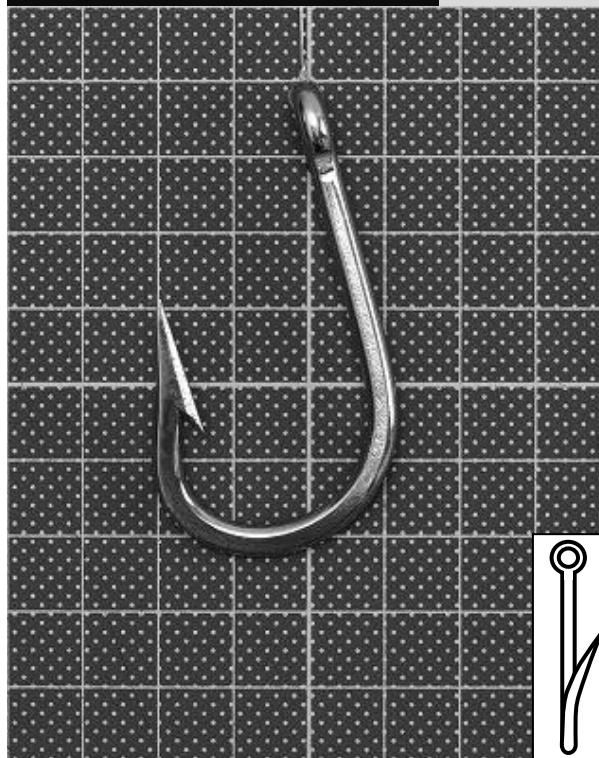
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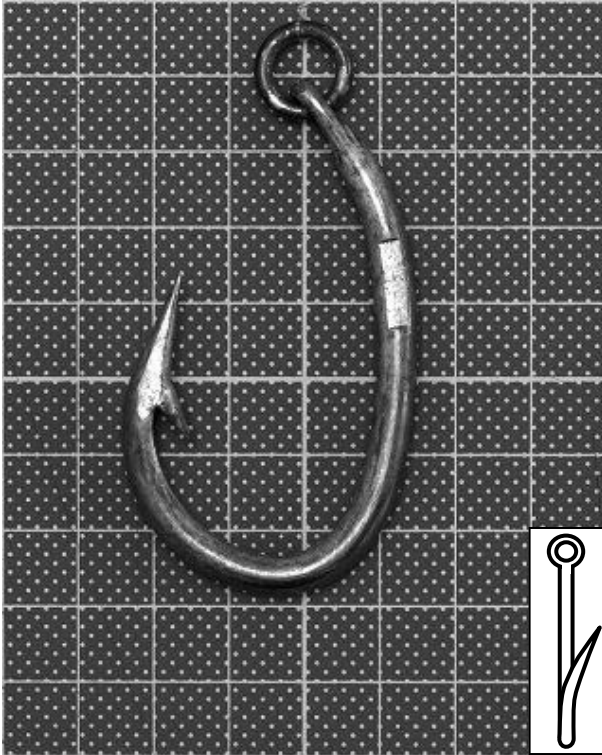
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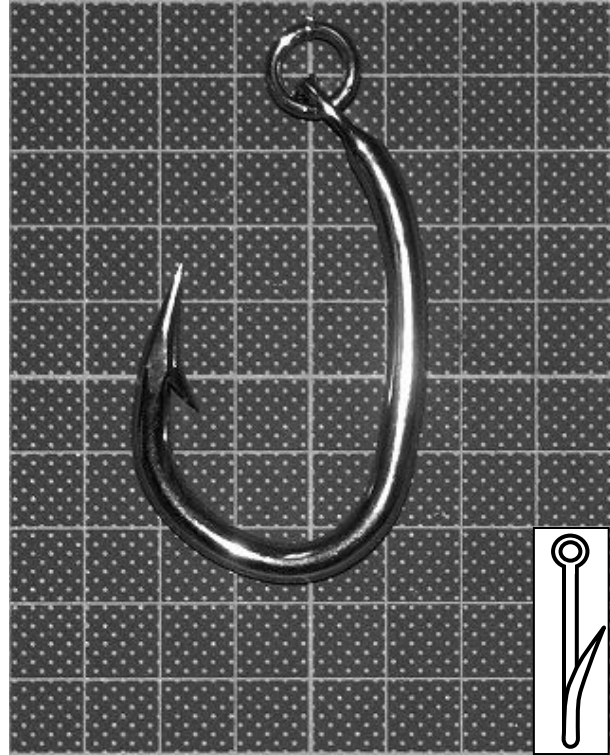
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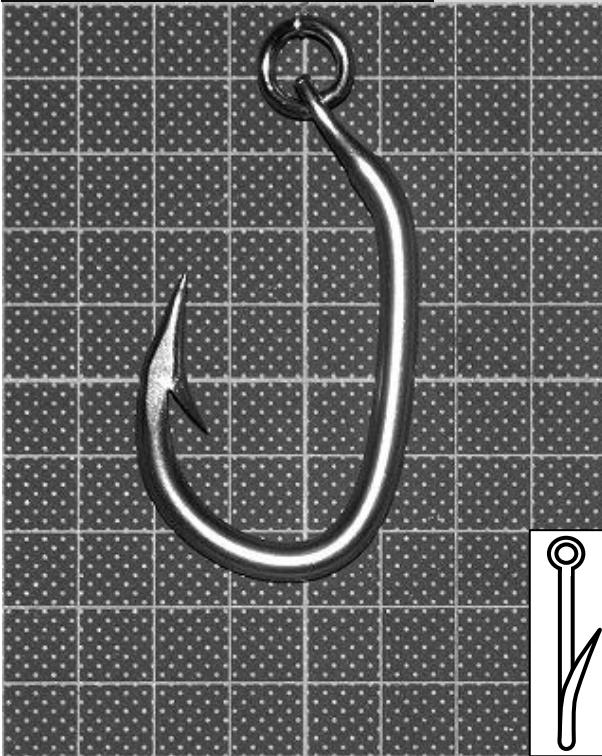
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T-02



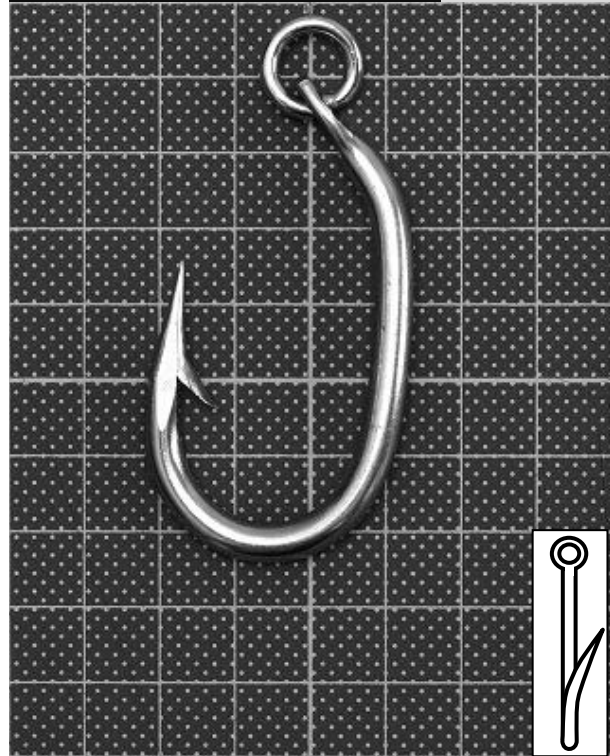
Size/Tamaño 9/0

T-03



Size/Tamaño 38

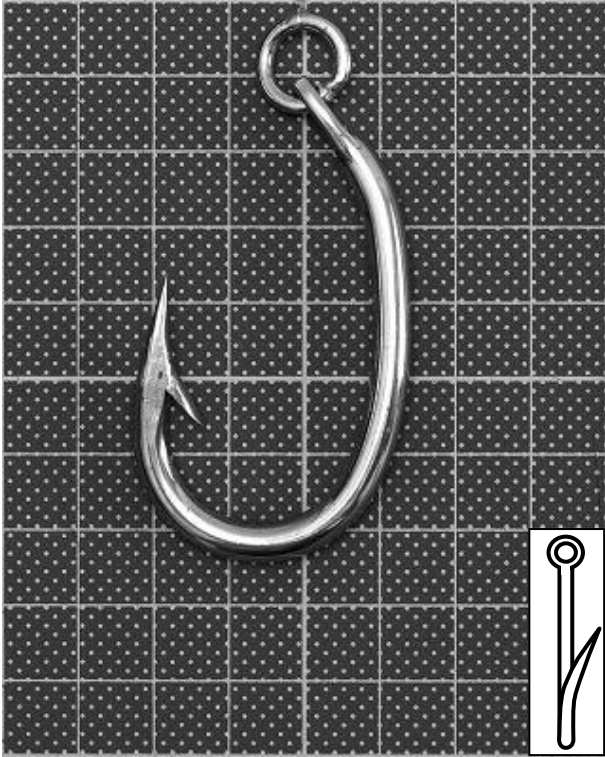
T-04



Tuna / Atún

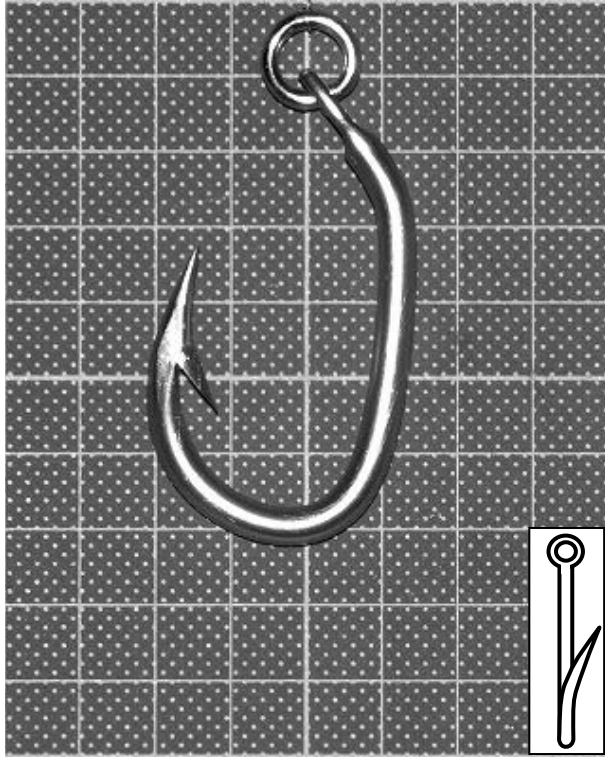
Unkown/Desconocido

T-05



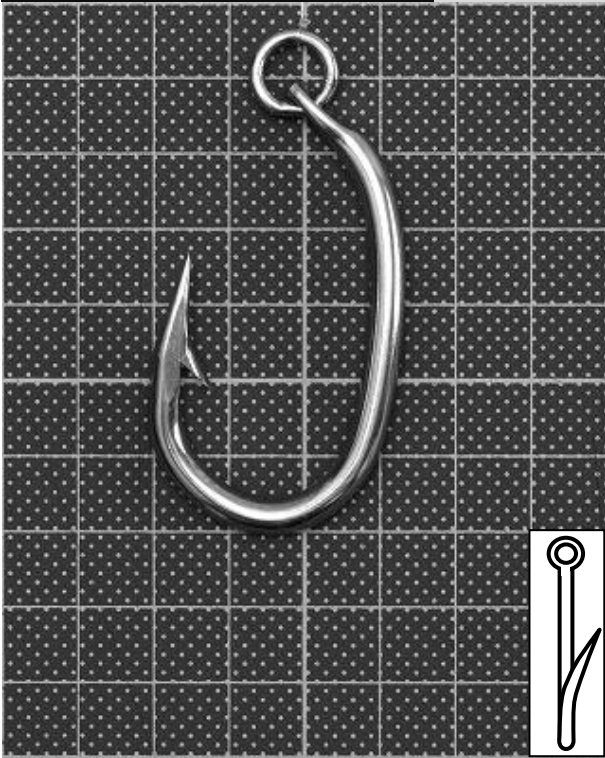
Size/Tamaño 8/0

T-06



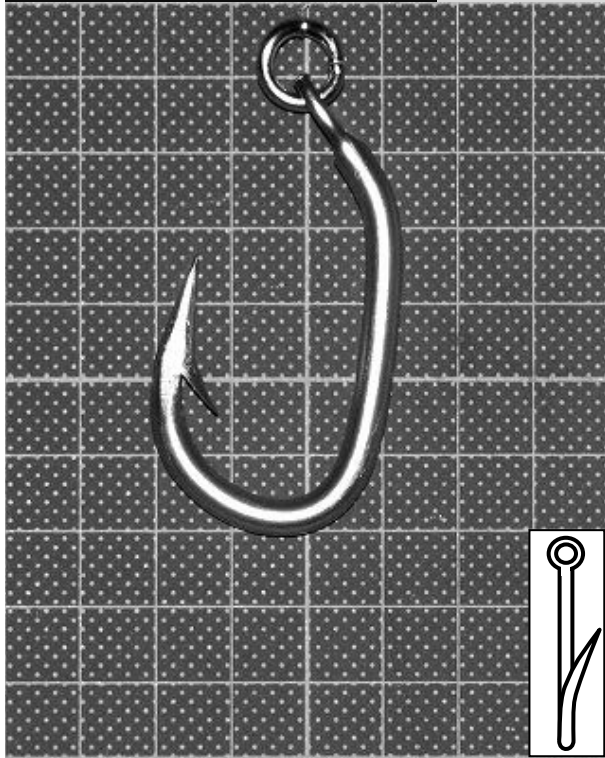
Size/Tamaño 36

T-07



Size/Tamaño 7/0

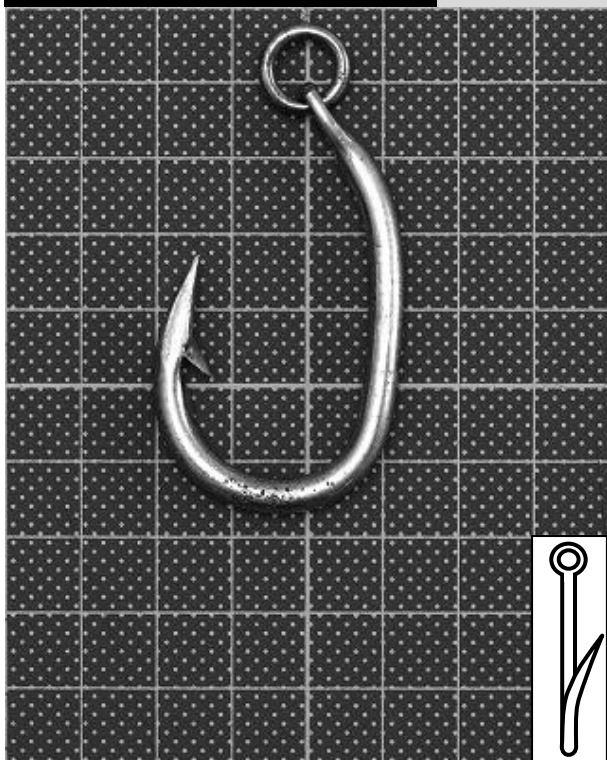
T-08



Tuna / Atún

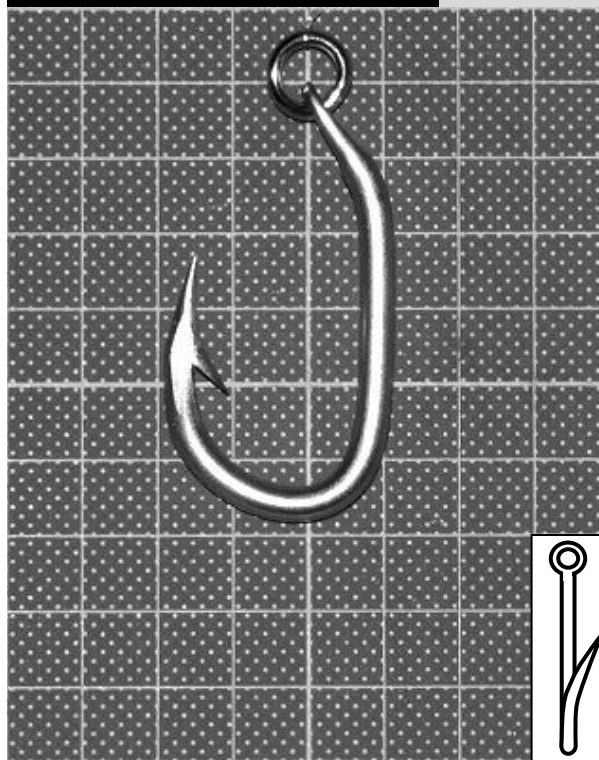
Size/Tamaño 34

T-09



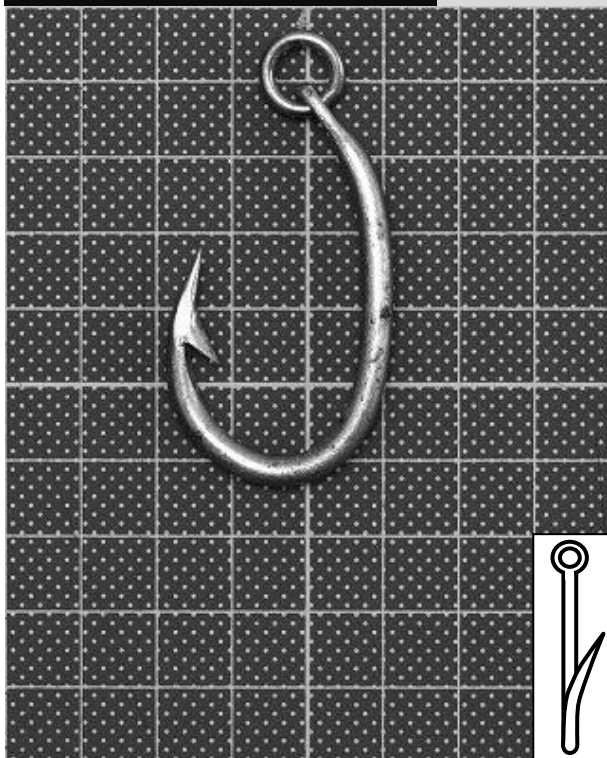
Size/Tamaño 6/0

T-10



Size/Tamaño 32

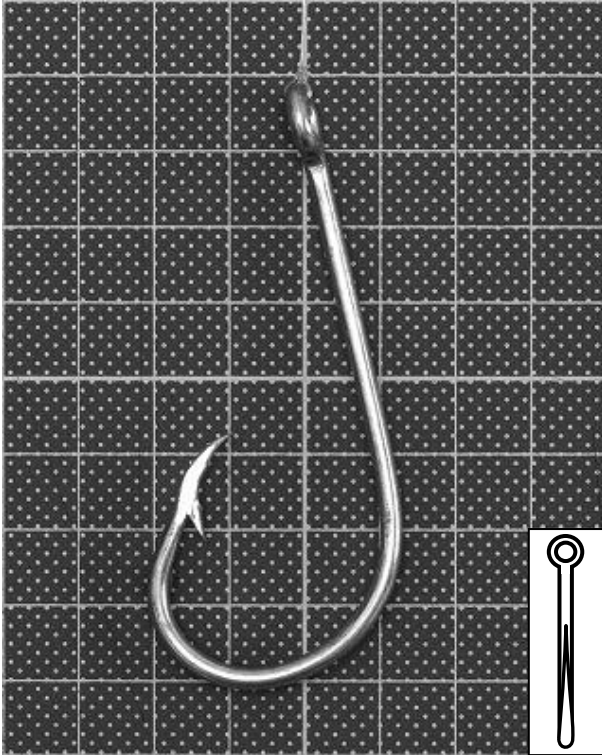
T-11



Tuna / Atún

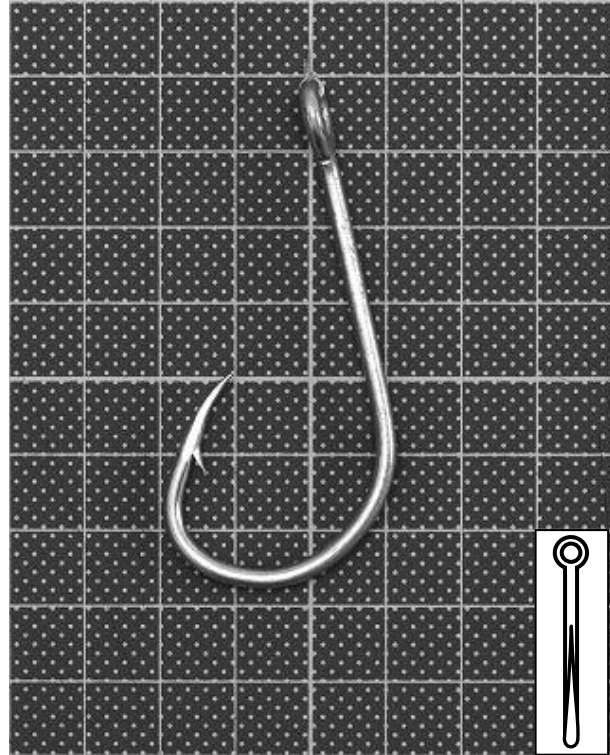
Size/Tamaño 3

EZ-01



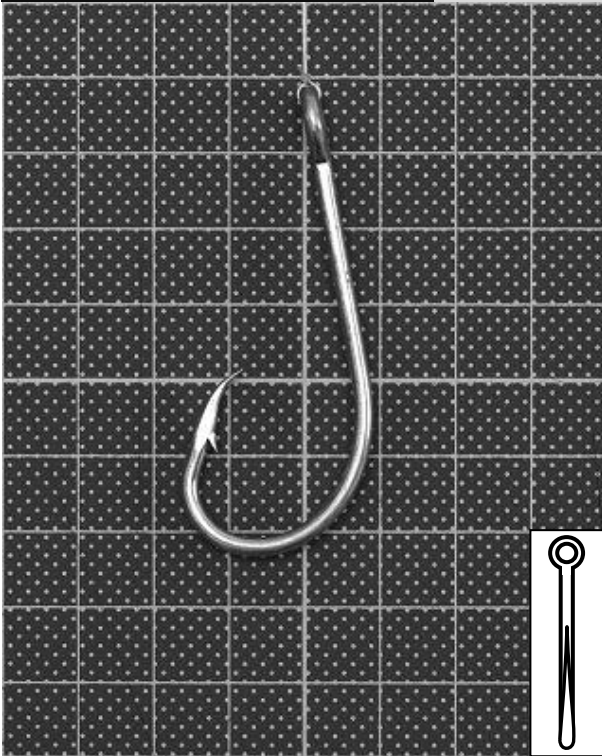
Size/Tamaño 4

EZ-02



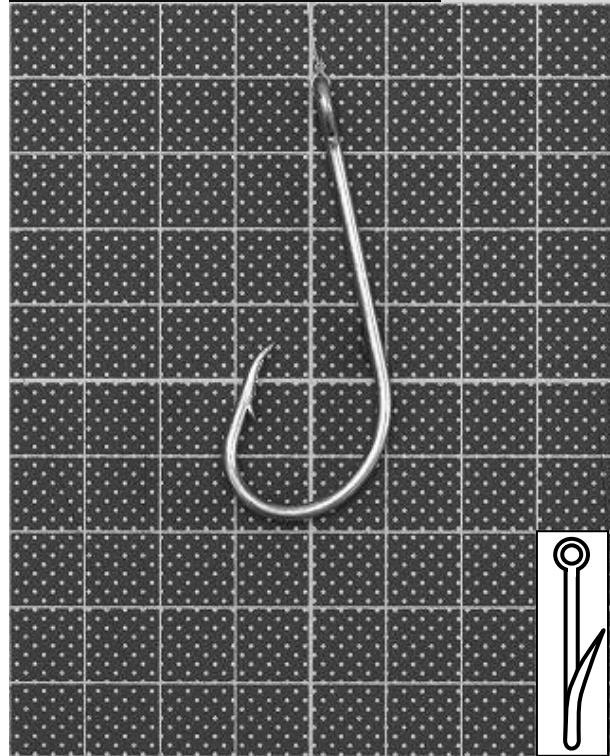
Size/Tamaño 5

EZ-03



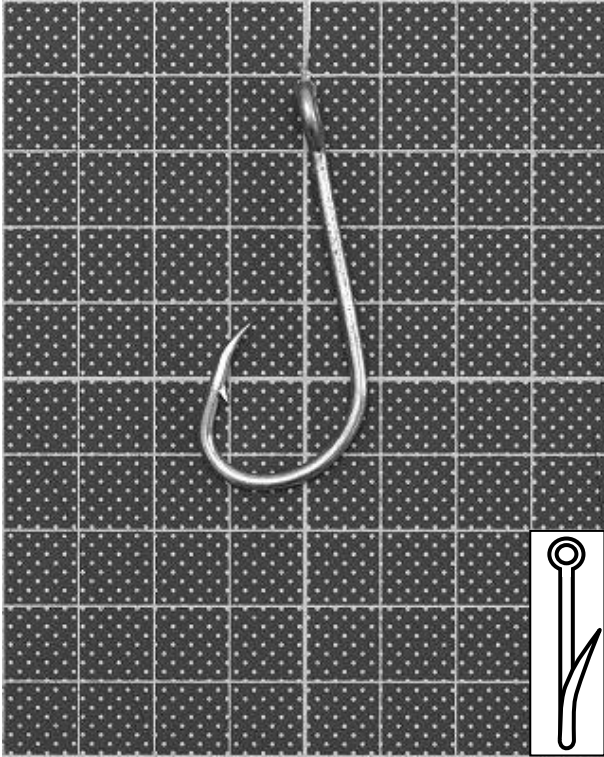
Size/Tamaño 6

EZ-04



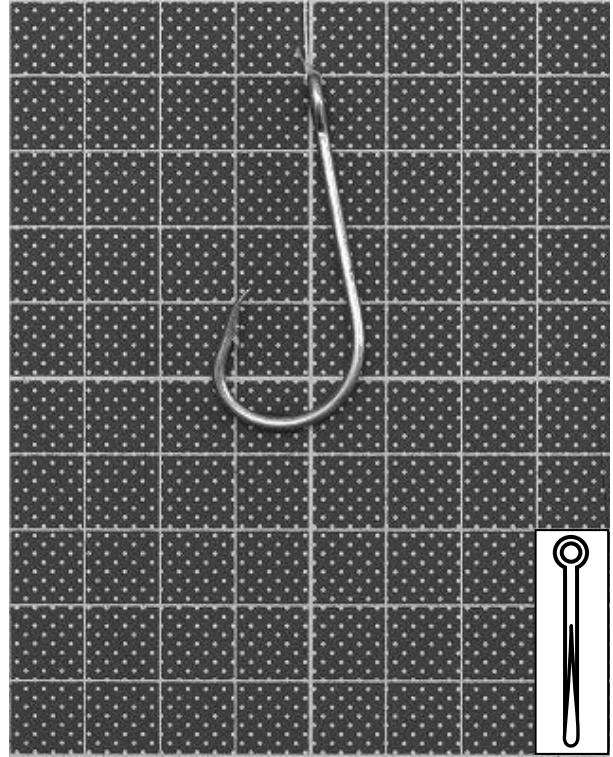
Size/Tamaño 6

EZ-05



Size/Tamaño 7

EZ-06



ID Catalogue ID Catálogo	Type Tipo	Standardized size Tamaño nominal	Point Punta	Manufacture Fabricante	Material Material	Product Reference Number Código	ID Database ID Base de datos
C-01	C	18/0	S	Unkown/Desconocido	SUS	Desconocido/Unknown	ID 020
C-02	C	18/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 021
C-03	C	18/0	S	Mustad	CST	39960D	ID 075
C-04	C	16/0	S	Mustad	CST	39966	ID 001
C-05	C	16/0	K	Mustad	CST	Unkown/Desconocido	ID 002
C-06	C	16/0	S	Mustad	CST	Unkown/Desconocido	ID 003
C-07	C	16/0	S	Pacific Fishing Tackle	SUS	Unkown/Desconocido	ID 004
C-08	C	16/0	R	Pacific Fishing Tackle	SUS	Unkown/Desconocido	ID 005
C-09	C	16/0	R	Unknown	CST	Unkown/Desconocido	ID 006
C-10	C	16/0	K	Beko	SUS	Unkown/Desconocido	ID 007
C-11	C	16/0	R	Forman Tech	SUS	Unkown/Desconocido	ID 008
C-12	C	16/0	R	King Fe Enterprise	SUS	Unkown/Desconocido	ID 009
C-13	C	16/0	K	Unknown	CST	Unkown/Desconocido	ID 010
C-14	C	16/0	R	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 024
C-15	C	15/0	S	Youvella	CST	71525	ID 015
C-16	C	15/0	R	Forman Tech	SUS	Unkown/Desconocido	ID081
C-17	C	15/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 016
C-18	C	15/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 017
C-19	C	15/0	S		SUS	Unkown/Desconocido	ID 022
C-20	C	15/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 023
C-21	C	15/0	S	Mustad	CST	39960D	ID 043
C-22	C	15/0	K	A Poutada	CST	410203	ID 053
C-23	C	14/0	S	Youvella	CST	71525	ID 014
C-24	C	14/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 018
C-25	C	14/0	S	Mustad	CST	39960D	ID 042
C-26	C	14/0	K	A Poutada	CST	410202	ID 052
C-27	C	13/0	R	Unknown	SUS	Unknown	ID 011
C-28	C	13/0	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 012
C-29	C	13/0	S	Youvella	CST	71525	ID 013
C-30	C	13/0	S	Mustad	CST	39960D	ID 041
C-31	C	13/0	K	A Poutada	CST	410201	ID 051
C-32	C	13/0	K	VMC	CST	Unkown/Desconocido	ID 068
C-33	C	12/0	R	Unkown/Desconocido	SUS	Unknown	ID 019
C-34	C	12/0	S	Mustad	CST	39960D	ID 040
C-35	C	10/0	S	Mustad	CST	39960	ID 067
C-36	C	9/0	S	Mustad	CST	39960	ID 066
C-37	C	4.0 sun	K	Keisaku Komatsu Shokai	CST	12-0019	ID 047
C-38	C	3.8 sun	K	Keisaku Komatsu Shokai	CST	12-0018	ID 046
C-39	C	3.6 sun	K	Keisaku Komatsu Shokai	CST	12-0017	ID 045
C-40	C	3.4 sun	K	Keisaku Komatsu Shokai	CST	12-0016	ID 044
J-01	J	2/0	K	Mustad	CST	2330DT	ID 050
J-02	J	1/0	K	Mustad	CST	2330DT	ID 049
J-03	J	1/0	K	A Poutada	CST	Unkown/Desconocido	ID 054
J-04	J	2	R	Unkown/Desconocido	CST	Unkown/Desconocido	ID 069
J-05	J	2	K	A Poutada	CST	Unkown/Desconocido	ID 055
J-06	J	3	K	A Poutada	CST	Unkown/Desconocido	ID 056
J-07	J	3	K	Mustad	CST	2330DT	ID 070
J-08	J	4	K	Mustad	CST	2330DT	ID 048

Type / Tipo C: Circle / Circular, J: J-style / Tipo "J", T: Japanese tuna / Atún japonés, EZ: E-Z baiter / Media garra de águila

Point / Punta S: Straight / Derecho, K: Kirbed / Torcido, R: Reversed / Invertido

Material / Material CST: Carbon steel / Acero al carbono, SUS: Stainless steel / Acero inoxidable

ID Catalogue ID Catálogo	Type Tipo	Standardized size Tamaño nominal	Point Punta	Manufacture Fabricante	Material Material	Product Reference Number Código	ID Database ID Base de datos
J-09	J	4	K	A Poutada	CST	-	ID 057
J-10	J	5	K	A Poutada	CST	-	ID 058
J-11	J	5	K	Youvella	CST	43634	ID 062
J-12	J	5	K	Mustad	CST	2330DT	ID 071
J-13	J	6	K	Youvella	CST	43634	ID 063
J-14	J	6	K	Mustad	CST	2330DT	ID 072
J-15	J	7	K	A Poutada	CST	-	ID 059
J-16	J	7	K	Youvella	CST	43634	ID 064
J-17	J	7	K	Mustad	CST	2330DT	ID 073
J-18	J	8	K	Youvella	CST	43634	ID 065
J-19	J	8	K	Mustad	CST	2330DT	ID 074
J-20	J	9	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 033
J-21	J	8	S	Unkown/Desconocido	SUS	-	ID 060
J-22	J	7	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 032
J-23	J	7	S	Unkown/Desconocido	SUS	-	ID 061
J-24	J	6	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 031
T-01	T	40	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 029
T-02	T	10/0	K	Mustad	CST	9196	ID 076
T-03	T	9/0	K	Kyung Wang Corp.	CST	-	ID 077
T-04	T	38	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 025
T-05	T	Unkown/Desconocido	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 028
T-06	T	8/0	K	Kyung Wang Corp.	CST	-	ID 078
T-07	T	36	K	Unkown/Desconocido	SUS	Unkown/Desconocido	ID 026
T-08	T	7/0	K	Kyung Wang Corp.	CST	-	ID 079
T-09	T	34	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 027
T-10	T	6/0	K	Kyung Wang Corp.	CST	-	ID 080
T-11	T	32	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 030
EZ-01	EZ	3	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 037
EZ-02	EZ	4	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 036
EZ-03	EZ	5	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 035
EZ-04	EZ	6	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 034
EZ-05	EZ	6	K	Unkown/Desconocido	CST	Unkown/Desconocido	ID 038
EZ-06	EZ	7	S	Unkown/Desconocido	CST	Unkown/Desconocido	ID 039

Type / Tipo C: Circle / Circular, J: J-style / Tipo "J", T: Japanese tuna / Atún japonés, EZ: E-Z baiter / Media garra de águila

Point / Punta S: Straight / Derecho, K: Kirbed / Torcido, R: Reversed / Invertido

Material / Material CST: Carbon steel / Acero al carbono, SUS: Stainless steel / Acero inoxidable

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