CT-115

CT-116

# CT-114, CT-115 and CT-116 Fiber Cleavers

Fujikura's lineup of high-quality, large diameter optical fiber cleavers is built to achieve low cleave angles with pristine end-faces for a vast array of fiber types. These cleavers are heavily utilized in fiber preparation for fusion splicing of standard data communication fibers, octagonal or round large diameter fibers (LDF), polarization maintaining fibers, photonic crystal fibers and even component manufacturing with capillary tubes, ball lenses, end caps and more.

Automation was a key theme during design of these products. The aim was to enable smarter, faster and more reliable decisions than previously capable via operator trial and error. Leveraging the success of their predecessors, the CT-115 and CT-116 fiber clamps will automatically adjust the clamping force to provide the most optimal cleave angle for any fiber in the machine. The fiber backstop position is newly automated to find the optimum location for best cleave angle performance. Microns adjustments can make the difference in achieving required cleave angles for many fibers. As a manual process, this is very difficult to optimize, but this new automation removes this painstaking process. With the unheard-of long blade life of all three cleavers, blade position changes are infrequent, but when needed, the blade will index to the next position automatically, driven by a motorized blade assembly.

As an industry first, this generation LDF cleaver has an RFID sensor which matches the RFID tag on every FH-110 series fiber holder. These cleavers have a new fiber holder management menu where users can pair a fiber holder to a cleave mode. In this menu, each fiber holder has a unique RFID and a user defined name for simple setup of fiber holder and cleave mode combinations. The cleaver utilizes the pairings in this menu to automatically change the cleave mode based on the fiber holder recognized by the cleaver's RFID sensor. This can be used as either a process control measure, or to aid in cleave optimization.

This line of LDF cleavers brings exciting benefits to the specialty fiber optic industry, which promise to yield tangible benefits to its users. Fujikura continues to lead with innovation and value in the quality solutions they develop. Put our LDF cleavers to the test by contacting us at 1-800-235-3423.

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# CT-114, CT-115 and CT-116 Fiber Cleavers

### CT-114 Features

- 80-660 µm cladding diameter
- Automatic blade position change
- RFID fiber holder identification
- Manual fiber clamping and backstop adjustment
- 200,000 cleaves per blade for 250 µm fiber
- PC software and manual downloadable via USB

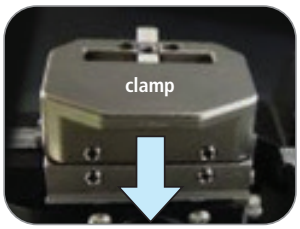
### CT-115 Features

- 80-1,250 µm cladding diameter
- Automatic fiber clamping, backstop adjustment and blade position change
- RFID fiber holder identification
- 200,000 cleaves per blade for 250 µm fiber
- PC software and manual downloadable via USB

### CT-116 Features

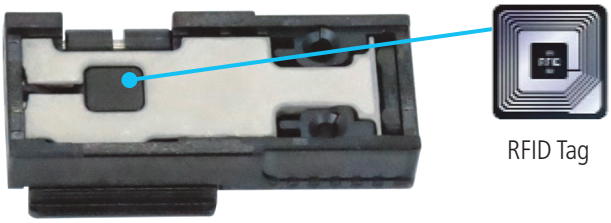
- 80-1,250 µm cladding diameter
- Automatic fiber clamping, backstop adjustment and blade position change
- RFID fiber holder identification
- 200,000 cleaves per blade for 250 µm fiber
- Angled cleaving function (up to 15°)
- PC software and manual downloadable via USB

**Angled Cleaving**
Angled cleaving up to 15° (only CT-116)

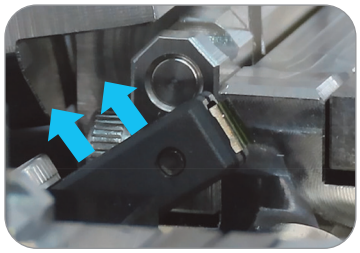



**Automatic Clamp Function**
CT-115 and CT-116 self-optimizes and applies the clamp force automatically for best cleave results without trial and error.


**Backstop**
CT-115 and CT-116 automated backstop prevents time and fiber waste with self-optimized positioning for best cleave results.




**RFID Fiber Holder System**
RFID identification with FH-110 series fiber holders improves quality control in manufacturing and when changing applications in an R&D environment.



**Automatic Blade Position Change**
Cleaver blade position indexing driven by a motor to remove user error from this critical process.

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# CT-114, CT-115 and CT-116 Fiber Cleavers

## Specifications

| PARAMETER | | CT-114 | CT-115 | CT-116 |
|---|---|---|---|---|
| Fiber type | | Silica optical fibers and capillary tubes | | |
| Fiber count | | Single | | |
| Cladding diameter | | 80-660 µm | 80-1,250 µm | |
| Coating diameter | | 81-3,182 µm | | |
| Fiber clamping | | Manual [1] | Automatic via motor | |
| Backstop adjustment | | Manual | Automatic via motor | |
| Tension range [2] | | 0 to 3,000 gf (29.4 N) | 0 to 10,000 gf (98.1 N) | |
| Cleaving length [3] | | 30-75 mm | | |
| Cleaving angle | | Average 0.2° (Cladding diameter 125 µm) | | |
| | | Average 0.3° (Cladding diameter 400 µm) | | |
| | | Average 0.4° (Cladding diameter 660 µm) [5] | Average 1.0° (Cladding diameter 1,000 µm) [5] | |
| Angled cleaving | | – | – | 0-15° (0 to 180° on cleaver rotator) [6] |
| Blade life [7] | | 200,000 fibers (10,000 fibers x 20 positions for 250 µm cladding fiber) | | |
| Dimensions (WxDxH) | | 240 x 133 x 142 mm without projections | | 240 x 133 x 151 mm without projections |
| Weight | | 3.6 kg without inserts and with fiber holder adapter | 3.9 kg without inserts and with fiber holder adapter | 4.2 kg without inserts and with fiber holder adapter |
| Humidity | | 0 to 95% RH, non-condensing (operation and storage) | | |
| Temperature | | 0°C to 40°C (operation)<br>-40°C to 80°C (storage) | | |
| Number of cleaving modes | | Maximum 100 | | |
| Cleave results | | 10,000 cleave data | | |
| AC Adapter | | Input: AC 100 V to 240 V (50 or 60 Hz) (max. 1.5 A)<br>Output: DC 19 V, Max. 2.1 A | | |
| Display | | TFT 4.95" touch screen LCD monitor | | |
| Interface | PC | USB 2.0 (Mini-B type) for PC communication | | |
| | Ground point | Applicable by M3 size truss screw | | |
| Wireless communication | RFID | Compliant with ISO 15693 | | |
| Other Features | Automatic Functions | Automatic cleave mode selection via RFID tag | | |
| | | Motorized blade position change | | |
| | | Automatic tension adjustment | | |
| PC Software | | Firmware update via internet | | |
| | | Cleave mode and parameter upload and download | | |

**Notes:**

1. For cladding diameter less than 400 µm, use magnets. For cladding diameter 400-660 µm, use both magnets and clamp lid screw. Clamp lid screw may be necessary depending on the fiber type when it is also under 400 µm.
2. There are some cases where the set tension is different from the actual tension.
3. Cleave length is defined as the distance between the left-side fiber clamp and the end-face of the cleaved fiber.
4. Measured with an interferometer at room temperature. A new blade was used to cleave each fiber. The average cleave angle changes depending on operational conditions such as blade condition, operation method and cleanliness.
5. Measured with an FSM-100P+ splicer at room temperature. A new blade was used to cleave each fiber. The average cleave angle changes depending on operational conditions such as blade condition, operating method and cleanliness.
6. Maximum angled cleave changes depending on the fiber type cleaved and clamp position.
7. The blade life changes depending on the operational conditions such as blade condition, operating method, cleanliness and fiber type cleaved.

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# CT-114, CT-115 and CT-116 Fiber Cleavers

## Ordering Information

| DESCRIPTION | AFL NO. |
|---|---|
| **CT-114 LDF Cleaver** includes: ADC-21 AC adapter; ACC-09 AC power cord; FHA-CT115 fiber holder adapter; CM-CT115 fiber height mirror; x3 each SPA-CT105-30, 50 and 100 shims; x15 set screws for inserts; HEX-01 hex wrench; USB-01 USB Cable; TR-CT115-E Technical reference manual; and One year factory warranty | S018182 |
| **CT-115 LDF Cleaver** includes: ADC-21 AC adapter; ACC-09 AC power cord; FHA-CT115 fiber holder adapter; CM-CT115 fiber height mirror; x3 each SPA-CT105-30, 50 and 100 shims; x15 set screws for inserts; HEX-01 hex wrench; USB-01 USB Cable; TR-CT115-E Technical reference manual; and One year factory warranty | S018183 |
| **CT-116 Angled LDF Cleaver** includes: ADC-21 AC adapter; ACC-09 AC power cord;, FHA-CT115 fiber holder adapter; CM-CT115 fiber height mirror; x3 each SPA-CT105-30, 50 and 100 shims; x15 set screws for inserts; HEX-01 hex wrench; USB-01 USB Cable; TR-CT115-E Technical reference manual; and One year factory warranty | S018184 |

## Accessories

| DESCRIPTION | AFL NO. |
|---|---|
| **Fiber Holder Inserts** | |
| Master fiber holder insert kit (includes upper and lower inserts from 80-1750) | S016098 |
| INSERT-L-80 | S016085 |
| INSERT-L-125 | S016086 |
| INSERT-L-160 | S016087 |
| INSERT-L-250 | S016088 |
| INSERT-L-400 | S016089 |
| INSERT-L-500-750 | S016090 |

| DESCRIPTION | AFL NO. |
|---|---|
| **Fiber Holder Inserts** (continued) | |
| INSERT-L-1000-1250 | S016091 |
| INSERT-L-1500-1750 | S016092 |
| INSERT-L-2000-2250 | S016093 |
| INSERT-L-2500-3000 | S016094 |
| INSERT-U-80-400 | S016079 |
| INSERT-U-500-750 | S016080 |
| INSERT-U-1000-1250 | S016081 |
| INSERT-U-1500-1750 | S016082 |
| INSERT-U-2000-2250 | S016083 |
| INSERT-U-2500-3000 | S016084 |

| DESCRIPTION | AFL NO. |
|---|---|
| **Height adjusting shim (10-piece pack)** | |
| SPA-CT105-30 (30 µm) | S016095 |
| SPA-CT105-50 (50 µm) | S016096 |
| SPA-CT105-100 (100 µm) | S016097 |
| **Miscellaneous Items** | |
| FHA-CT115 Fiber holder adapter | S018211 |
| CM-CT115 Fiber height mirror | S018212 |
| TD-01 Torque Driver | S016738 |
| CB-06A Replacement Blade | S016078 |
| AC adapter ADC-21 | S018168 |
| AC power cord ACC-09 | S014390 |

## Fiber Holders

| DESCRIPTION | AFL NO. |
|---|---|
| FH-110-60 Fiber Holder | S018215 |
| FH-110-100 Fiber Holder | S018216 |
| FH-110-125 Fiber Holder | S018217 |
| FH-110-150 Fiber Holder | S018218 |
| FH-110-180 Fiber Holder | S018219 |
| FH-110-210 Fiber Holder | S018220 |
| FH-110-250 Fiber Holder | S018221 |
| FH-110-300 Fiber Holder | S018222 |
| FH-110-350 Fiber Holder | S018223 |
| FH-110-400 Fiber Holder | S018224 |
| FH-110-500 Fiber Holder | S018225 |
| FH-110-600 Fiber Holder | S018226 |
| FH-110-700 Fiber Holder | S018227 |

| DESCRIPTION | AFL NO. |
|---|---|
| FH-110-800 Fiber Holder | S018228 |
| FH-110-900 Fiber Holder | S018229 |
| FH-110-1000 Fiber Holder | S018230 |
| FH-110-1100 Fiber Holder | S018231 |
| FH-110-1200 Fiber Holder | S018232 |
| FH-110-1300 Fiber Holder | S018233 |
| FH-110-1400 Fiber Holder | S018234 |
| FH-110-1500 Fiber Holder | S018235 |
| FH-110-1600 Fiber Holder | S018236 |
| FH-110-1700 Fiber Holder | S018237 |
| FH-110-1800 Fiber Holder | S018238 |
| FH-110-1900 Fiber Holder | S018239 |
| FH-110-2000 Fiber Holder | S018240 |

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# CT-114, CT-115 and CT-116 Fiber Cleavers

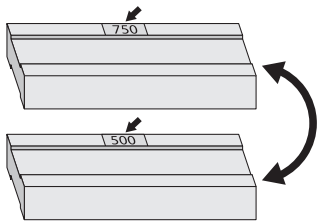
### Insert Selection Guide

| LOWER INSERT | | UPPER INSERT: INSERT-U-80-400 | INSERT-U-500-750[1] 500 | INSERT-U-500-750[1] 750 | INSERT-U-1000-1250[1] 1000 | INSERT-U-1000-1250[1] 1250 | INSERT-U-1500-1750[1] 1500 | INSERT-U-1500-1750[1] 1750 | INSERT-U-2000-2250[1] 2000 | INSERT-U-2000-2250[1] 2250 | INSERT-U-2500-3000[1] 2500 | INSERT-U-2500-3000[1] 3000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INSERT-L-80 | | 54-107 | | | | | | | | | | |
| INSERT-L-125 | | 84-167 | | | | | | | | | | |
| INSERT-L-160 | | 115-213 | | | | | | | | | | |
| INSERT-L-250 | | 167-333 | | | | | | | | | | |
| INSERT-L-400 | | 267-533 | 400-533 | | | | | | | | | |
| INSERT-L-500-750[1] | 500 | 334-667 | 467-667 | 550-667 | | | | | | | | |
| | 750 | | 634-868 | 717-1000 | 787-1000 | | | | | | | |
| INSERT-L-1000-1250[1] | 1000 | | | 884-1118 | 954-1188 | 1037-1272 | | | | | | |
| | 1250 | | | | 1120-1355 | 1204-1438 | 1287-1522 | | | | | |
| INSERT-L-1500-1750[1] | 1500 | | | | | 1370-1605 | 1454-1688 | 1537-1772 | | | | |
| | 1750 | | | | | | 1620-1855 | 1704-1938 | 1780-2015 | | | |
| INSERT-L-2000-2250[1] | 2000 | | | | | | | 1870-2115 | 1947-2288 | 2030-2265 | | |
| | 2250 | | | | | | | | 2114-2348 | 2197-2432 | 2280-2515 | |
| INSERT-L-2500-3000[1] | 2500 | | | | | | | | | 2364-2598 | 2447-2682 | 2614-2848 |
| | 3000 | | | | | | | | | | 2780-3015 | 2947-3182 |

**Note:**
1. Each side of this insert is equipped with a groove that is marked with the size of the fiber diameter on the table.

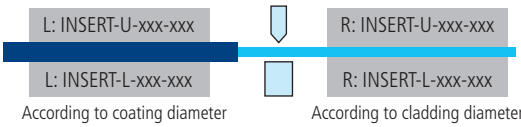
## Upper and lower inserts can be changed up or down depending on required fiber fit into the V-groove.

Inserts 500 µm and above are double-sided. Therefore, the visible label when inserted indicates the size of the insert you are using.



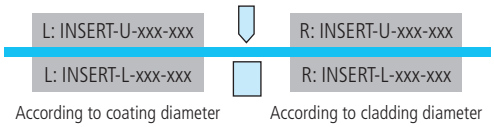

## Upper and lower inserts are necessary for both left and right side clamps.

Case 1: Cleaving coating-stripped fiber




**Inserts according to both coating diameter and cladding diameter are necessary.**

Case 2: Cleaving glass rod




**Two insert pairs of the same size according to rod diameter are necessary.**