

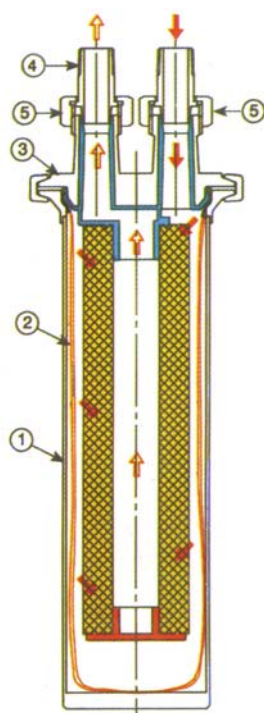


The background of the central section is a collage. On the left, there are several CUNO CTG System components, including stainless steel housings and orange-colored filter cartridges, some with the CUNO logo. In the center, a person's hands are shown pouring a pink liquid from a container into a CUNO housing. On the right, a woman with dark hair is smiling from the driver's side window of a silver car. The text 'CUNO™ CTG System' is overlaid in large white letters across the center of the collage.

# CUNO<sup>TM</sup> CTG System

Clean and Economical

Figure 1: The liquid flow principle



| N° | PARTS                           | MATERIAL             | NB |
|----|---------------------------------|----------------------|----|
| 1  | Sump                            | 304L Stainless Steel | 1  |
| 2  | CTG System Pack                 | Polyethylene         | 1  |
| 3  | Lid                             | 304L Stainless Steel | 1  |
| 4  | Connection Fitting - in contact | 316L Stainless Steel | 2  |
| 5  | Connection Fitting - Ring Nut   | 304L Stainless Steel | 2  |

## The CUNO CUNO CTG System Advantage

The CUNO CTG System is a way to reduce the labour costs and environmental/worker hazards of a filter change-out. The environmentally sealed cartridge system eliminates the cleaning time associated with standard filter and housing combinations and the hazards of handling both used filters and cleaning solvents. The system is available in a variety of configurations for the most efficient filtration. Since the CUNO CTG System is self contained, all gaskets and seals can be eliminated, further reducing overall costs.

## Construction

- The CUNO CTG System consists of a pack composed of five features :
  - ⇒ A double layer liner in polyethylene (*in red on the scheme*).
  - ⇒ A retaining ring in polyamide (*in green on the scheme*).
  - ⇒ A system head in polypropylene (*in blue on the scheme*).
  - ⇒ An end cap in polypropylene (*in orange on the scheme*).
  - ⇒ 3M Purification cartridges (*in yellow on the scheme*).
- This pack is installed into a special housing. These WT housings are constructed from 304 stainless steel and have a maximum pressure rating design of 10 bar g and can be used in temperatures up to 90 °C.

## The Cost Effective Solution

The fluid to be filtered is never in contact with the housing, the CUNO CTG System reduces the time and labour required for cleaning.

## The Environmental Friendly Solution

This CUNO CTG System is engineered to minimise operator exposure to the fluid.

## Pressure Equipment Directive 97/23/CE

WT housings are built to PED 97/23/CE Category 3.3 “Sound Engineering Practice” as standard.

## ATEX Directive 94/9/CE

The WT housings are approved for use in ATEX condition 11/2/G/T5 as standard.

The user of these housings must ensure that they are used in accordance with the requirements of these PED and ATEX directives at all times. Please consult your local 3M Purification representative for any other classification or further information.

## Features & Benefits

### Totally enclosed system

- Eliminates handling of used cartridges and cleaning of housings

### New clamp closure system

- No tool needed

### No parts subject to wear compatibility issues, e.g. gaskets

- Easy to use
- Reduces costs

### Cartridge filter pack is replaced easily and quickly

- Reduction of down time.
- Reduces air pollution
- Preserves the health of operators (free from solvent inhalation)

### System can be equipped with most of the standard 3M Purification cartridges

- Flexibility for a wide variety of applications

### Cartridges are preassembled in the pack

- Security and quality assurance

### Inlet and outlet connections have different threads

- Avoids mistakes during change-outs

## The CUNO CTG System Applications

CUNO CUNO CTG System's unique construction provides benefits to customers in a wide range of end-use filtration applications. High quality filtration along with total filtration cost reductions are very attractive benefits to customers in diverse industries.

### Automotive Plant Manufacturing

The CUNO CTG System provides a totally enclosed, factory sealed system addressing the needs of automotive paint producers. The design eliminates the need to clean housings and internal housing parts reducing labour, solvent use and waste. The combination of a totally enclosed filter pack and easy to clean housing design reduces the opportunity for contaminants to enter the process and ensures complete cleaning from batch-to-batch colour changes.

### Automotive Assembly Plants

The environmentally friendly CUNO CTG System design provides the cost effective solution to the growing industry concern to reduce solvent use and exposure of employees to hazardous chemicals. The 3M Purification assembled pack ensures a positive seal eliminating filter by-pass and providing quality product. The combination of the CUNO CTG System design and state-of-the-art Betapure™ filter cartridges provide significant cost savings through reduced rework.

### Coil Coating

Factory sealed and reusable packs eliminate by-pass and provide the highest quality coating possible. The self contained system simplifies the filler change-out process to reduce down time between colour changes. The amount of solvents typically used to flush conventional housings can be reduced by as much as 80%. Installation of the CUNO CTG System in place of conventional housings and cartridges drastically reduces filtration costs, enhances productivity, and increases overall product quality.

### Magnetic Media

The CUNO CTG System coupled with 3M Purification's high quality Betapure™ or Betapure™ NT filter packs, reduces drop-outs, increases both filter life and filtration efficiency, and lowers overall production/process costs. The CUNO CTG System simplifies change-out by eliminating clean up and reducing system downtime, therefore increasing total productivity.

### Ink Manufacturing and Printing

CUNO CTG System is ideal for use in the ink manufacturing industry and for printing press final quality. For both large and small volume runs, the CUNO CTG System can provide superior quality product while increasing both filter life and filtration efficiency. In addition, up to 95 % of the hold-up volume can be recovered from the system, the used filter pack can be capped and stored for repeated use, lowering overall production/process costs.

### Photoresist

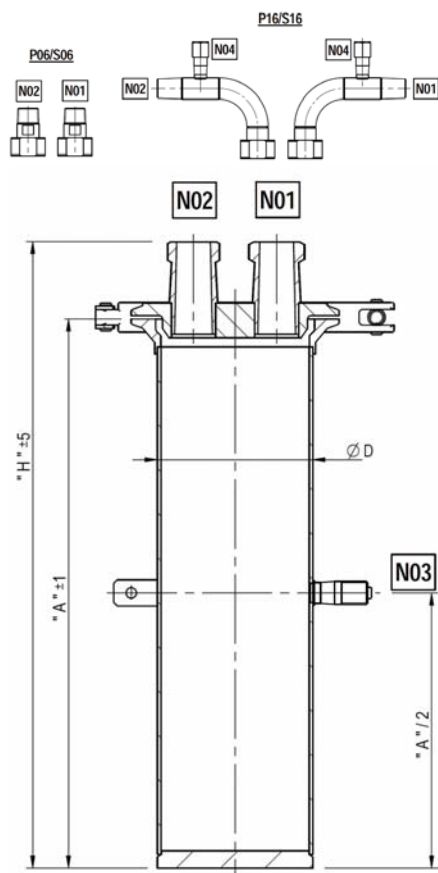
The totally enclosed CUNO CTG System pack prevents contact of photoresist and photoresist chemicals with metal housings, reducing the possibility of metal ion contamination. The factory sealed system eliminates potential by-pass associated with conventional filter housings ensuring the greatest possible product quality. Filter packs are available with low extractable components.

## Other Applications

|   |
|---|
| Resins, varnishes, glues                      |
| Photographic solutions                        |
| Acids and strong alkalis                      |
| Fine Chemicals                                |
| Other toxic products                          |
| Power generation and dielectric oil treatment |
| Lubricating and cutting oils                  |
| High quality chemicals                        |
| Contaminated water                            |
| Ceramic Slurries                              |
| Hazardous Chemicals                           |
| Deep well injection                           |
| Plating processes                             |
| CMP slurries                                  |



Figure 3: 01 WTC with Clamp Closing



## The CUNO CTG System Configurations

### Standard Configurations

The CUNO CTG System is available in 3 basic cartridge configurations: 1, 3 and 7 round housings. This flexibility allows an easy sizing for most applications.

- The 1 round WT housing features a sanitary clamp closing. This design simplifies filter pack change out while maintaining system integrity. It includes a single cartridge pack from 5", 10" & 20" length.
- The 3 round WT housing can accept 10", 20" and 30" cartridges. Only the bolt closing is available.
- The 7 WT round housing is the biggest configuration allowing the packs to include 7 cartridges of 10", 20" or 30". Only the bolt closing is available.



Examples:

- A. WT Housing with 7 CUNO CTG System cartridges
- B. WT Housing with 3 CUNO CTG System cartridges
- C. WT Housing with 1 CUNO CTG System cartridge

NOTE: Pictures for information only - actual product may vary from those shown above.

Examples:

- A. 7 cartridges CUNO CTG System pack
- B. 3 cartridges CUNO CTG System pack
- C. 1 cartridge CUNO CTG System pack

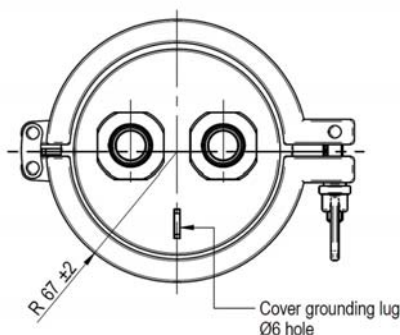
### Satisfying Special Requirements

To continue to satisfy customer needs, 3M Purification can modify the standard system design to suit specific application requirements.

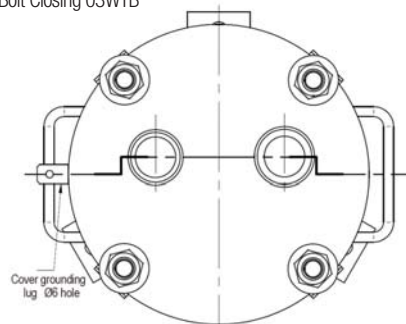
3M Purification takes great pride in providing innovative solutions to customer requirements. If you have an application with special or unusual demands, we're more than ready to provide the solution!

Figure 2: Closure schemes

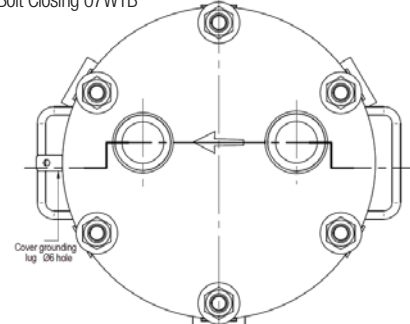
Clamp Closing 01WTC



Bolt Closing 03WTB



Bolt Closing 07WTB





## The CUNO CTG System Dimensions

**Table 1: 01 WTC with Clamp Closing Housing Specifications**

| CUNO CTG System Specifications      | REF.  | 01WTC05                |         | 01WTC1  |         | 01WTC2  |         |
|-------------------------------------|-------|------------------------|---------|---------|---------|---------|---------|
|                                     |       | P06/S06                | P16/S16 | P06/S06 | P16/S16 | P06/S06 | P16/S16 |
| Overall height (mm)                 | H     | 275                    | 295     | 400     | 425     | 655     | 675     |
| Vessel height (mm)                  | A     | 190                    | 190     | 315     | 315     | 570     | 570     |
| Vessel diameter (mm)                | D     | 88.9                   | 88.9    | 88.9    | 88.9    | 88.9    | 88.9    |
| Connection threads Inlet/Outlet     | N1/N2 | ½ BSP                  | ½ BSP   | ½ BSP   | ½ BSP   | ½ BSP   | ½ BSP   |
| Air Push Connection (+ plug)        | N3    | ¼ BSP                  | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   |
| Vent Connection (+ plug)            | N4    |                        | ¼ BSP   |         | ¼ BSP   |         | ¼ BSP   |
| Weight (kg)                         |       | 3.8                    | 4.1     | 4.2     | 4.5     | 5.3     | 5.6     |
| Max. operating pressure (bar g)     |       | 10                     | 10      | 10      | 10      | 10      | 10      |
| Max. operating temperature (°C)*    |       | 70                     | 70      | 70      | 70      | 70      | 70      |
| Volume (l)                          |       | 1.1                    | 1.1     | 1.7     | 1.7     | 3.5     | 3.5     |
| Closure Type                        |       | Clamp                  |         |         |         |         |         |
| Surface Quality (Internal/External) |       | Pickled and passivated |         |         |         |         |         |

\* Can be limited by the application or the used material of the pack

**Table 2: 03 WTB with Bolt Closing Housing Specifications**

| CUNO CTG System Specifications      | REF.  | 03WTB1                 |         | 03WTB2  |         | 03WTB3  |         |
|-------------------------------------|-------|------------------------|---------|---------|---------|---------|---------|
|                                     |       | P06/S06                | P16/S16 | P06/S06 | P16/S16 | P06/S06 | P16/S16 |
| Overall height (mm)                 | H     | 440                    | 450     | 690     | 705     | 950     | 960     |
| Vessel height (mm)                  | A     | 323                    | 323     | 579     | 579     | 833     | 833     |
| Vessel diameter (mm)                | D     | 168                    | 168     | 168     | 168     | 168     | 168     |
| Overall diameter (mm)               | E     | 279                    | 279     | 279     | 279     | 279     | 279     |
| Connection threads Inlet/Outlet     | N1/N2 | 1" BSP                 | 1" BSP  | 1" BSP  | 1" BSP  | 1" BSP  | 1" BSP  |
| Air Push Connection (+ plug)        | N3    | ¼ BSP                  | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   |
| Vent Connection (+ plug)            | N4    |                        | ¼ BSP   |         | ¼ BSP   |         | ¼ BSP   |
| Weight (kg)                         |       | 18                     | 19      | 24      | 25      | 26      | 27      |
| Max. operating pressure (bar g)     |       | 10                     | 10      | 10      | 10      | 10      | 10      |
| Max. operating temperature (°C)*    |       | 70                     | 70      | 70      | 70      | 70      | 70      |
| Volume (l)                          |       | 6.5                    | 6.5     | 12      | 12      | 17      | 17      |
| Closure Type                        |       | 4 M16 eye bolts        |         |         |         |         |         |
| Surface Quality (Internal/External) |       | Pickled and passivated |         |         |         |         |         |

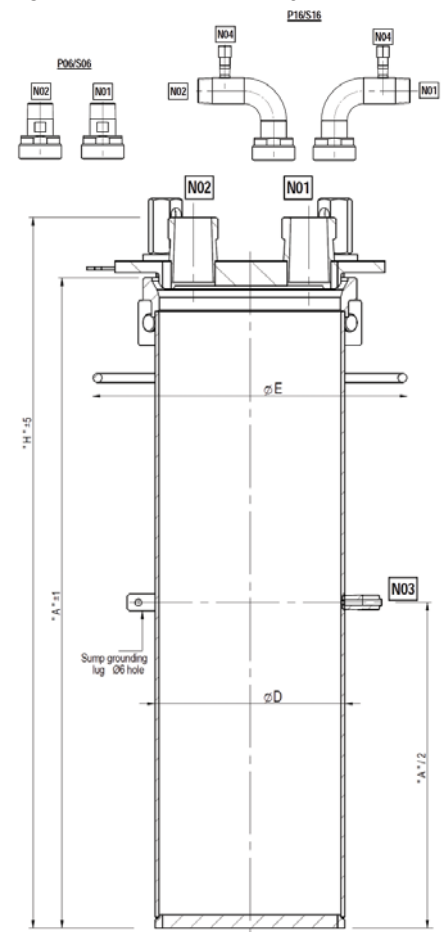
\* Can be limited by the application or the used material of the pack

**Table 3: 07 WTB with Bolt Closing Housing Specifications**

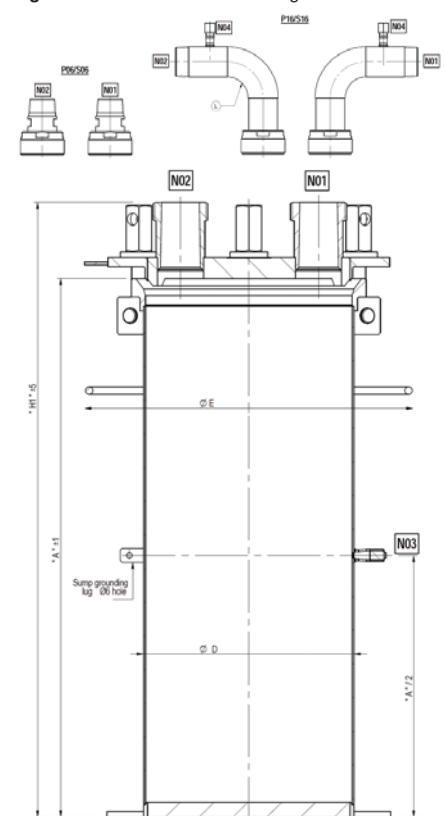
| CUNO CTG System Specifications      | REF.  | 07WTB1                 |         | 07WTB2  |         | 07WTB3  |         |
|-------------------------------------|-------|------------------------|---------|---------|---------|---------|---------|
|                                     |       | P06/S06                | P16/S16 | P06/S06 | P16/S16 | P06/S06 | P16/S16 |
| Overall height (mm)                 | H     | 466                    | 530     | 720     | 780     | 974     | 1035    |
| Vessel height (mm)                  | A     | 325                    | 325     | 575     | 575     | 830     | 830     |
| Vessel diameter (mm)                | D     | 224                    | 224     | 224     | 224     | 224     | 224     |
| Overall diameter (mm)               | E     | 348                    | 348     | 348     | 348     | 348     | 348     |
| Connection threads Inlet/Outlet     | N1/N2 | 1"¼ BSP                | 1"½ BSP | 1"¼ BSP | 1"½ BSP | 1"¼ BSP | 1"½ BSP |
| Air Push Connection (+ plug)        | N3    | ¼ BSP                  | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   | ¼ BSP   |
| Vent Connection (+ plug)            | N4    |                        | ¼ BSP   |         | ¼ BSP   |         | ¼ BSP   |
| Weight (kg)                         |       | 25                     | 29      | 28      | 32      | 31      | 35      |
| Max. operating pressure (bar g)     |       | 10                     | 10      | 10      | 10      | 10      | 10      |
| Max. operating temperature (°C)*    |       | 70                     | 70      | 70      | 70      | 70      | 70      |
| Volume (l)                          |       | 12                     | 12      | 21      | 21      | 31      | 31      |
| Closure Type                        |       | 6 M16 eye bolts        |         |         |         |         |         |
| Surface Quality (Internal/External) |       | Pickled and passivated |         |         |         |         |         |

\* Can be limited by the application or the used material of the pack

**Figure 4: 03 WTB with Bolt Closing**



**Figure 5: 07 WTB with Bolt Closing**



Picture 1: Flushing Elbow



Picture 2: Flexible Pipe System



Picture 3: Locating holes with locating pin



Picture 4: Tilting Device and Volume Reducer



## The CUNO CTG System Accessories

CUNO CTG System hardware and options simplify system installation and provide flexibility. All components are manufactured from high quality stainless steel for extended service life, exceptional durability, and ease of cleaning.

### Rinsing Process

The CUNO CTG System is designed with the inlet and outlet ports on housing head. 3M Purification offers a **flexible pipe system** for 1, 3 and 7 round configurations. An optional **flushing elbow** equipped with FPM gasket can be used to flush the installation while the CUNO CTG System housing is off line.

### Product Recovery

The **air push device** allows to minimize the liquid part inside the pack. It allows recovery of valuable filtered product, to reduce waste treatment and to decrease used pack weight. This air injection valve kit is available for all CUNO CTG System configurations.

### Quality Assurance

The **grade safety device** assures that the required micron rating is in place into the pack. It is designed to avoid any mistakes in the process, as only the selected pack can be mounted in the dedicated housing. A special CUNO CTG System WT housing cover including a locating hole will receive a special pack including a locating pin. This option is particularly interesting in processes requiring several filtration steps where quality assurance matters. The grade safety device on request (special P/N). Option to be specified when ordering.

### Ease of Use

The tilting device eliminates lifting the potentially heavy used filter pack for safe and easy removal. The durable stainless steel construction makes the tilting device ideal for stand-alone or skid mounted service. It is particularly recommended for 7 around packs in viscous product applications.

### Process Versatility

In processes where the batch size can vary or where process changes reduce the contaminant load, fewer filter cartridges could be used if a smaller housing were available. Using the CUNO CTG System **Volume Reducer** drives down the cost of filtration and allows you to easily transform a triple length WT housing into a single or double length. This option is available for 7 and 3 around configurations.

### Chemical Compatibility

The environmental sealed cartridge pack system isolates the housing from the filtered product. The CUNO CTG System features a double layer liner made of polyethylene. Depending on the fluid to be filtered, a greater chemical compatibility could be necessary. 3M Purification offers optional liners made of polyamide for allowing usage in different processes.

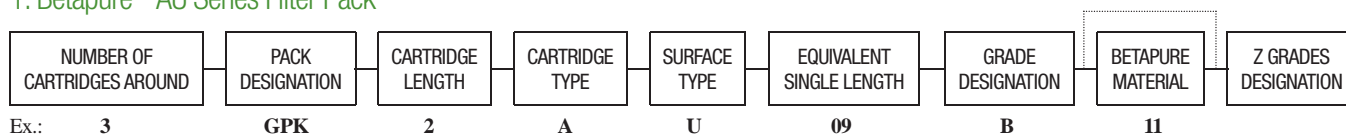
For any information on the ordering part numbers for all these Accessories, please contact your local 3M Purification office or distributor.

## The CUNO CTG System Pack Ordering Guide

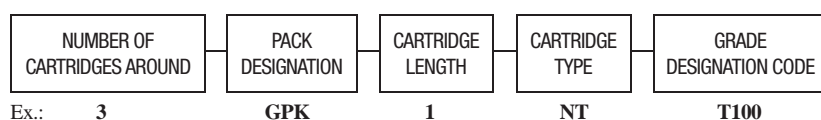
The CUNO CTG System filter pack can accommodate a wide variety of 3M Purification filter media, including bi-component depth filters, resin bonded depth filters, polypropylene depth and surface filters, and absolute rated membrane filters. This extensive offering ensures compatibility with most fluids in most applications. Each media type has a range of removal ratings allowing optimum filtration for all applications.

### Polypropylene Cartridges

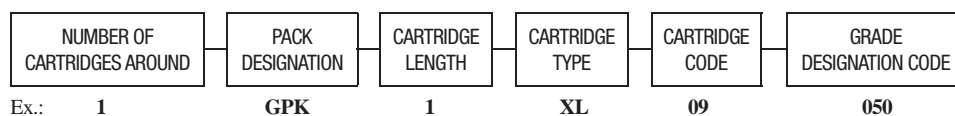
#### 1. Betapure™ AU Series Filter Pack



#### 2. Betapure™ NT Series Filter Pack

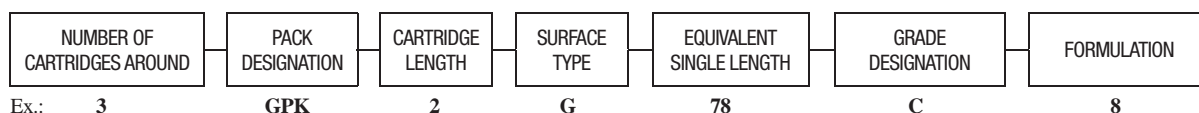


#### 3. Betafine™ XL Series Filter Pack

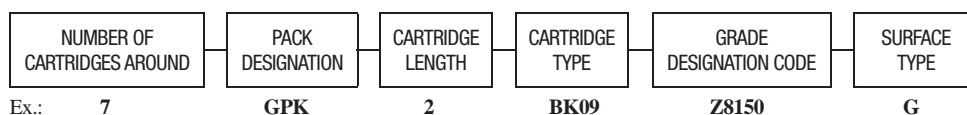


### Resin Bonded Cartridges

#### 1. Micro-Klean™ G Series Filter Pack

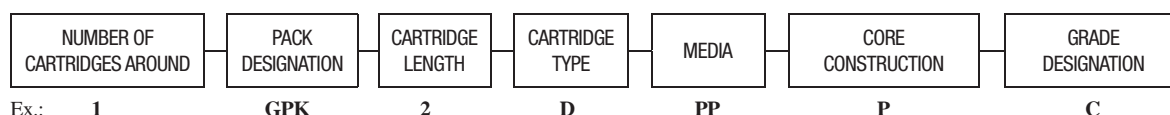


#### 2. Betapure™ BK Series Filter Pack



### Other Cartridges

#### 1. Micro-Klean™ D Series Filter Pack



Other configurations including other cartridge types are also possible on request.

## The CUNO CTG System WT Housing Ordering Guide

CUNO CTG System part numbers are designed for precisely describing the housing body, the inlet connection and the outlet connection. You can design your system for meeting your special requirements. Attention: some configurations may not exist or are not available as standard.

### 1. WT Housing Body Description

| NUMBER OF CARTRIDGES | HOUSING TYPE        | CARTRIDGE HEIGHT                | SURFACE FINISH            | HOUSING & CLOSING MATERIAL |
|----------------------|---------------------|---------------------------------|---------------------------|----------------------------|
| 01 = 1 cartridge     | WTC = Clamp closing | 05 = 5"<br>01 = 10"<br>02 = 20" | F0 = Pickled & Passivated | 44 = 304 Stainless Steel   |
| 03 = 3 cartridges    | WTB = Bolt closing  | 1 = 10"<br>2 = 20"              |                           |                            |
| 07 = 7 cartridges    | WTB = Bolt closing  | 3 = 30"                         |                           |                            |

### 2. Inlet/Outlet Connections Description

| INLET     | CONNECTION SHAPE & MATERIAL **              | CONNECTION      | CONNECTION DIAMETER *                      | OUTLET     | CONNECTION SHAPE & MATERIAL **              | CONNECTION      | CONNECTION DIAMETER *                      |
|-----------|---|-----------------|--|------------|---|-----------------|--|
| P = Inlet | 06 = Straight in 316L<br>16 = Elbow in 316L | GM = BSP (ext.) | 15 = ½"<br>25 = 1"<br>32 = 1¼"<br>40 = 1½" | S = Outlet | 06 = Straight in 316L<br>16 = Elbow in 316L | GM = BSP (ext.) | 15 = ½"<br>25 = 1"<br>32 = 1¼"<br>40 = 1½" |

\* 15 only for 1WTC housings, 25 only for 3WTB housings, 32 only for 07WTB F0 44 P06 S06 housings and 40 07WTB F0 44 P16 S16.

\*\* The inlet connection shape and material is always the same as the outlet connection shape and material.

Example of complete order references: 03 WTB2 F0 44 P06GM25 S06 GM25

### Operating instructions

CUNO CTG Systems are available with all the components necessary for installation, including flexible loses, valves and gauges. Set up and subsequent filter pack replacement takes only minutes. For safe and effective operation, we have designed an operating instructions manual available as an animated presentation. It allows operators to be trained for a proper usage of the CUNO CTG System.

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#### Limited Warranty

3M Purification warrants it this product to be free from defects in material and workmanship during normal use for a period of one (1) year from the date of shipment from the factory. If the Product(s) is (are) defective within this warranty period, your exclusive remedy and 3M Purification's sold obligations shall be, at 3M Purification's option, to replace or repair the Product(s) or refund the original purchase price of the Product(s) This warranty does not apply to failures that result from abuse, misuse, alteration or damage not caused by 3M Purification or failure to properly follow installation and use instructions.

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