



CTG-Klean®

Clean & Economical
Filter System

The CTG-Klean System Advantage

- ☑ No housing or components to clean
- ☑ Change-out labour and down-time are reduced
- ☑ Operator exposure to hazardous materials is reduced
- ☑ Filter Packs can be used, stored and reused
- ☑ Media available to fit a wide range of applications
- ☑ No internal housing parts to stock, damage or replace

CTG-Klean system is a new 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 CTG-Klean system is self contained, all gaskets and seals can be eliminated, further reducing overall costs.

CONSTRUCTION

- The CTG-Klean 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*).
 - ⇒ CUNO cartridges (*in yellow on the scheme*).
- This pack is installed into a special housing constructed of durable 304L stainless steel.

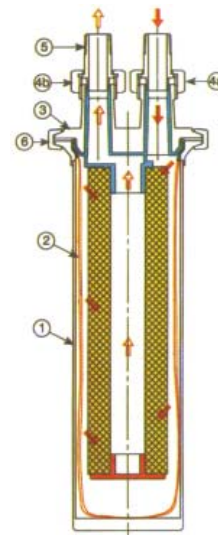
The Cost Effective Solution

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

The Environmental Friendly Solution

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

LIQUID FLOW PRINCIPLE



N°	PARTS	MATERIAL	NB
1	SUMP	304L S.S.	1
2	CTG-Klean Pack	Polyethylene	1
3	Cover	304L S.S.	1
4a	Inlet cone ring nut	Brass**	1
4b	Outlet cone ring nut	Brass**	1
5	Cone thread	304L S.S.*	2
6	Clamp closing	304 S.S.	1

* PVDF optional

** S.S. optional

FEATURES AND BENEFITS

Features

- Totally enclosed system.
- New clamp closure system.
- No parts subject to wear compatibility issues, e.g. gaskets.
- Cartridge filter pack is replaced easily and quickly.
- System can be equipped with most of the standard CUNO cartridges.
- Cartridges are preassembled in the pack.
- Inlet and outlet connections have different threads.

Benefits

- Eliminates handling of used cartridges and cleaning of housings.
- No tool needed.
- Easy to use. Reduces costs.
- Reduction of down time. Reduces air pollution Preserves the health of operators (free from solvent inhalation).
- Flexibility for a wide variety of applications.
- Security and quality assurance.
- Avoids mistakes during change outs.

The CTG-Klean System Applications

CTG-Klean'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 CTG-Klean 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 CTG-Klean system design provides the cost effective solution to the growing industry concern to reduce solvent use and exposure of employees to hazardous chemicals. The CUNO assembled pack ensures a positive seal eliminating filter by-pass and providing quality product. The combination of the CTG-Klean 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 CTG-Klean in place of conventional housings and cartridges drastically reduces filtration costs, enhances productivity, and increases overall product quality.

Magnetic Media

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

Ink Manufacturing and Printing

CTG-Klean system is ideal for use in the ink manufacturing industry and for printing press final quality. For both large and small volume runs, CTG-Klean 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 CTG-Klean 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

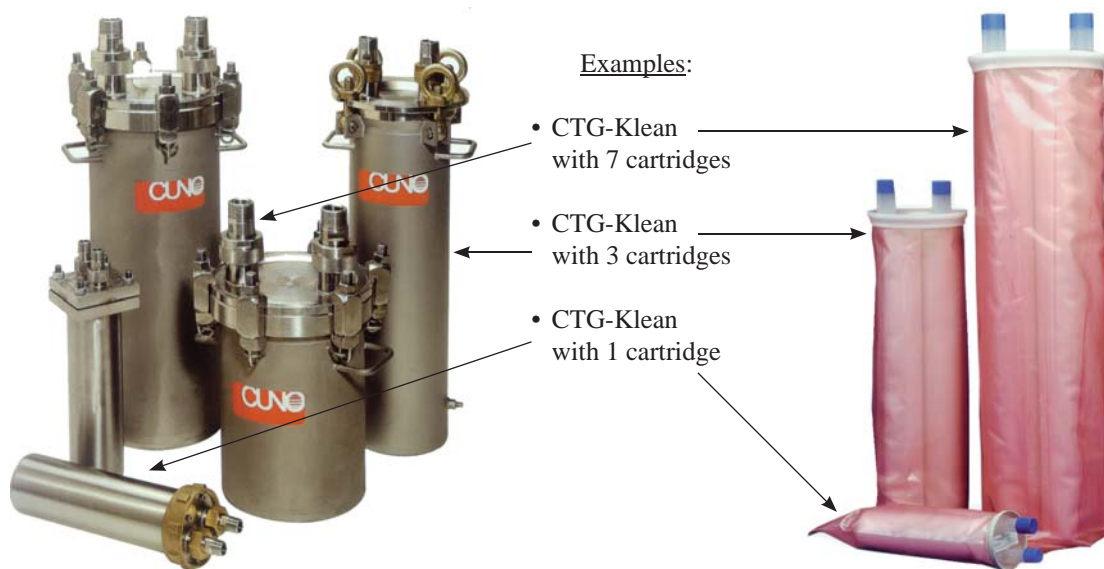


The CTG-Klean System Configurations

Standard Configurations

The CTG-Klean 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 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 housing can accept 10", 20" and 30" cartridges. The bolt closing is the standard version, but a clamp closing is also available on request.
- The 7 round housing is the biggest configuration allowing the packs to include 7 cartridges of 10", 20" or 30". Only the bolt closing is available.



Satisfying Special Requirements

To continue to satisfy customer needs, CUNO can modify the standard system design to suit specific application requirements. Examples are shown in the pictures on the right side.

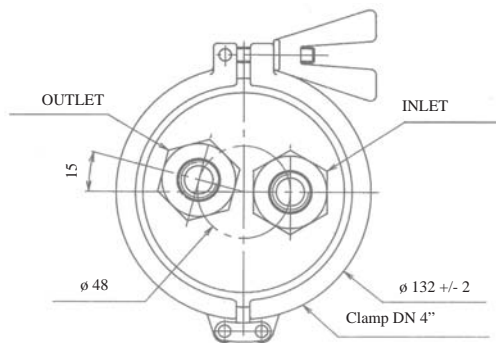
CUNO takes great pride in providing innovative solutions to customer requirements. If you have an application with special or unusual demands, we're more than ready to provide the solution!



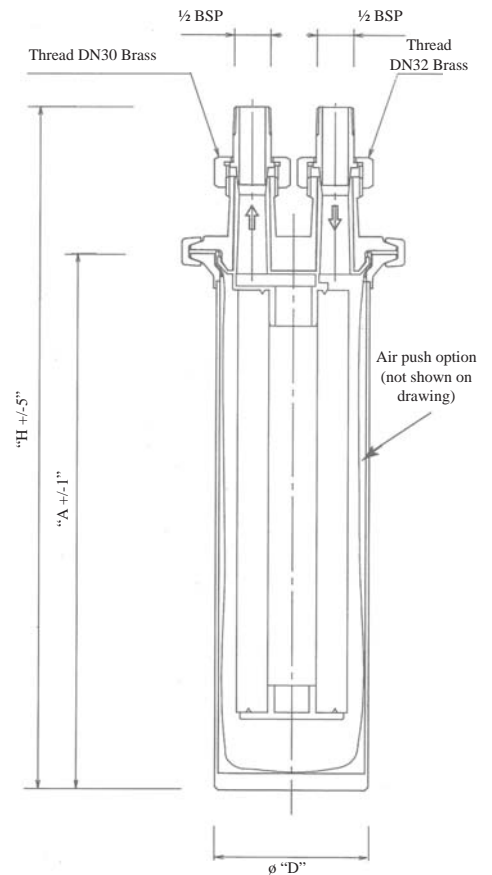
The CTG-Klean Dimensions

01 WTC with Clamp Closing

CLAMP CLOSURE SCHEME

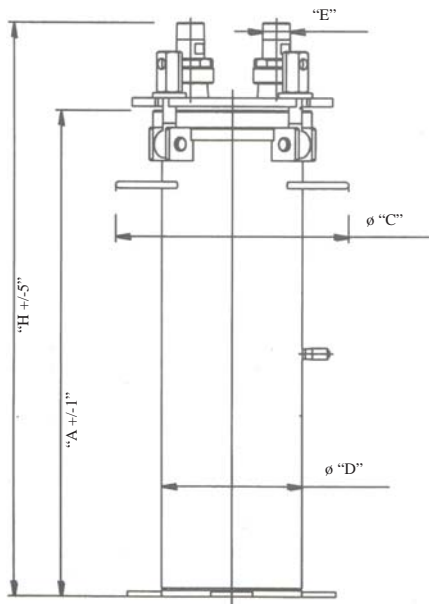


HOUSING SCHEME



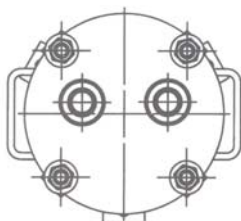
CTG-Klean Specifications	REF.	01WTC05	01WTC1	01WTC2
Overall height (mm)	H	275	400	655
Vessel height (mm)	A	190	315	570
Vessel diameter (mm)	D	88.9	88.9	88.9
Connection threads Inlet/Outlet		½ BSP	½ BSP	½ BSP
Net weight (kg)		2.3	2.6	2.9
Max. operating pressure (bar)		10	10	10
Max. operating temperature (°C)***		70	70	70
Max. flow rate (m³/h)		1.9	1.9	1.9
Max. residual volume for each pack (l)		0.7	0.7	0.7

03 WTB and 07 WTB with Bolt Closing



CTG-Klean Specifications	REF.	03 WTB1	03 WTB2	03 WTB3	07 WTB1	07 WTB2	07 WTB3
Overall height (mm)	H	434	690	944	475	730	980
Vessel height (mm)	A	323	579	833	325	579	830
Vessel diameter (mm)	D	168	168	168	224	224	224
Overall diameter (mm)	C	256	256	256	312	312	312
Connection thread	E	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
Net weight (kg)		14	16	18	29	33	37
Max. torque (N/m) for clamp-screws		40	40	40	40	40	40
Operating pressure* (bar)		10	10	10	10	10	10
Working temperature (°C)***		70	70	70	70	70	70
Max. flow rate** (l/min)		88	88	88	145	145	145
Max. residual volume of each pack (l)		4.4	7.7	11	7.1	12.3	17.4

Top View of 03WTB Housing



03WTB Housing :

- Fixing
- 3 holes (diam. 14 mm)
- located on diam. 230 mm

07WTB Housing:

- Fixing
- 3 holes (diam. 18 mm)
- located on diam. 290 mm

* Special construction up to 30 bar

** Calculated with a speed of 3 m/s in the pipes

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

The CTG-Klean System Accessories

CTG-Klean 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 CTG-Klean system is designed with the inlet and outlet ports on housing head. CUNO 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 CTG-Klean system housing is off line.



Flushing elbow part number	
Model	Code Number
01 WT	39 131 100
03 WT	39 131 101
07 WT	39 131 102

Flexible Pipe part number	
Model	Code Number
01 WT	39 131 904
03 WT	39 131 905
07 WT	39 131 906



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 CTG-Klean configurations. Air injection valve kit: code number 39 131 940

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 CTG-Klean 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.

The tilting device part number for a 3WTB is 39 131 001 and for a 7WTB is 39 131 000.

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 CTG-Klean **Volume Reducer** drives down the cost of filtration and allows you to easily transform a triple length housing into a single or double length. This option is available for 7 and 3 around configurations.



Volume Reducer part number		
Model	Height	Code Number
03 WT	10"	39 131 150
03 WT	20"	39 131 152
07 WT	10"	39 131 151
07 WT	20"	39 131 153

Chemical Compatibility

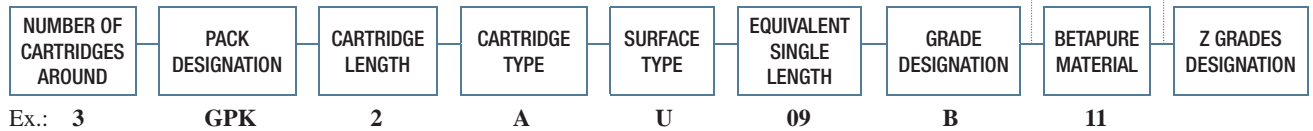
The environmental sealed cartridge pack system isolates the housing from the filtered product. The CTG-Klean system features a double layer liner made of polyethylene. Depending on the fluid to be filtered, a greater chemical compatibility could be necessary. CUNO offers optional liners made of polyamide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

The CTG-Klean Pack Ordering Guide

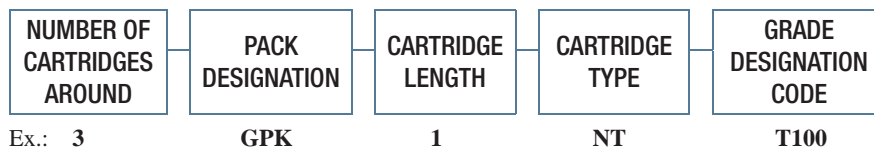
The CTG-Klean filter pack can accommodate a wide variety of CUNO filter media, including biocomponent depth filters, resin bonded depth filters, polypropylene depth and surface filters, and absolute rated membrane filters. This extensive offering ensures compatibility with most fluids in most applications.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

POLYPROPYLENE CARTRIDGES

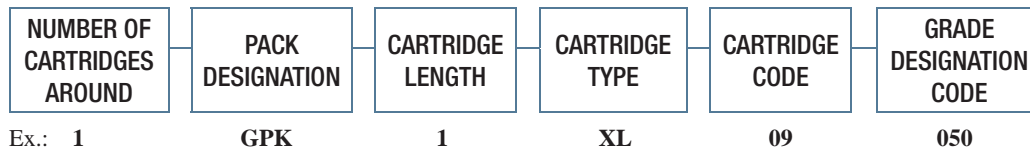
Betapure® Filter Pack



PolyNet Filter Pack

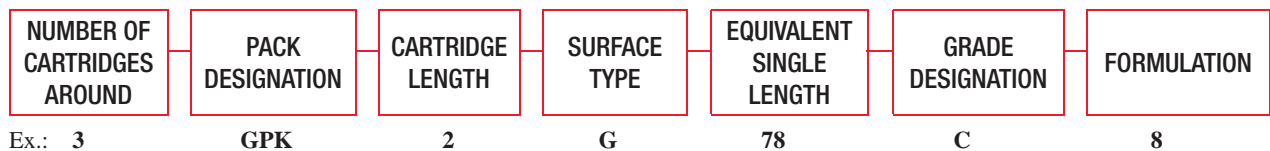


Betafine XL Filter Pack

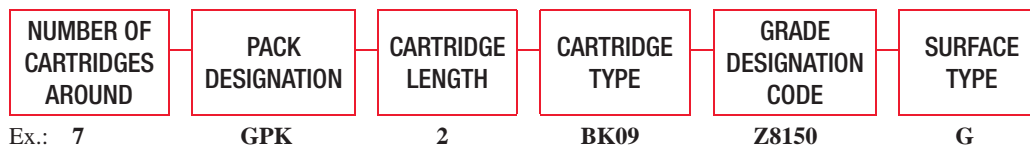


RESIN BONDED CARTRIDGES

Micro-Klean® Filter Pack

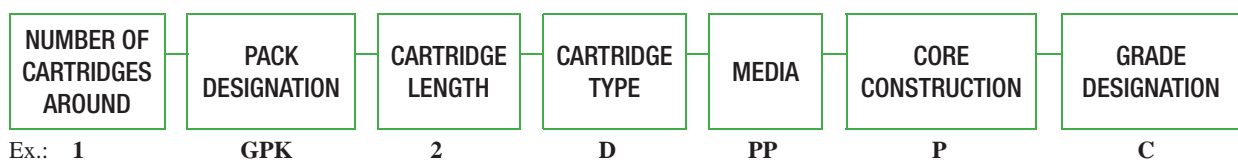


BetaKlean Filter Pack



OTHER CARTRIDGES

Micro-Wynd® II Filter Pack



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



The CTG-Klean Housing Ordering Guide

**Attention: This housing corresponds to the Directive 97/23/EC - Article 3.3
Please consult CUNO for any other classifications.**

CTG-Klean 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.

HOUSING BODY DESCRIPTION

NUMBER OF CARTRIDGES	HOUSING TYPE	CARTRIDGE HEIGHT	SURFACE FINISH	HOUSING MATERIAL	CLOSING MATERIAL
01 = 1 cart.	WTC = Clamp closing WTB = Bolt closing	05 = 5" 01 = 10" 02 = 20"	F0 = Pickled	4 = 304 SS	1 = Carbon Steel bichromated
03 = 3 cart.	WTC = Clamp closing WTB = Bolt closing	1 = 10" 2 = 20"			4 = 304 SS
07 = 7 cart.	WTB = Bolt closing	3 = 30"			

INLET/OUTLET CONNECTIONS DESCRIPTION

TYPE	CONNECTION SHAPE	CONNECTION MATERIAL	CONNECTION	CONNECTION DIAMETER
P = Inlet S = Outlet	0 = Straight 1 = Elbow 2 = Elbow+valve	2 = Brass 4 = 304 SS	GM = BSP (ext.)	15 = ½" 25 = 1" 32 = 1¼" 40 = 1½"

Examples of references:

03 WTB2 F0 41 P02 GM25 S02 GM25

01 WTC1 F0 44 P14 GM15 S14 GM15

Operating instructions

CTG-Klean 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 CTG-Klean system.

APPLICATIONS SUPPORT - SASS

CUNO's Scientific Applications Support Services (SASS) is staffed by scientists and engineers, with state-of-the-art laboratory facilities. The SASS staff, familiar with a wide range of filtration and separation applications, work closely with the customer to recommend the most effective and economical CUNO filtration systems.



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