

## Cleaning devices for flexible hoses, assemblies and pipes

It becomes more and more important to protect hydraulic systems against contamination. This increase in care is due to the fact that the systems are more advanced and operate at higher speed and lower allowance. The contamination of hydraulic oil reduces effectiveness of the machine, destabilizes its control, causes frequently occurring defects and break-downs that put the machine out of operation.

**DID YOU KNOW THAT  
80% OF HYDRAULIC SYSTEM FAULTS  
ARE CAUSED BY  
CONTAMINATION ?**

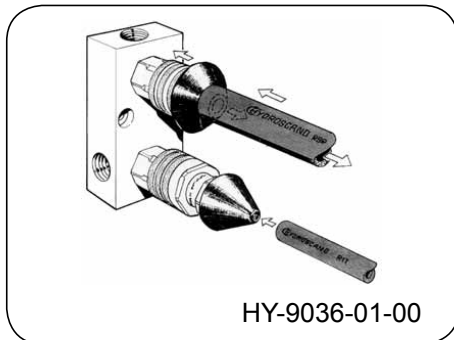
The requirements concerning the purity of hydraulic oil are specified by ISO 4406 and American NAS 1638 standard. The standards define cleanliness classes of oil according to the amount of contamination of certain volume - the lower the number defining the class, the cleaner the hydraulic oil.

<b>NAS 1638</b>	00	0	1	2	3	4	5	6	7	8	9	10	11	12
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<b>ISO 4406</b>	8/4	9/6	10/7	11/8	12/9	13/10	14/11	15/12	16/13	17/14	18/15	19/16	20/17	21/18
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### Hydraulic hoses, assemblies and pipes cleaning methods:

- blowing through with compressed air (does not meet any standards, however very useful),
- shooting cleaning projectiles using compressed air,
- slushing.



### MICRO JET 5-50

A simple device designed to clean hoses and pipes with compressed air. There are two plastic nozzles, one is for hoses from 3/16" to 1" and the other for hoses from 1" to 2". When the hose is pressed against the nozzle the valve opens and makes cleaning possible.

- air pressure: min. 6 bar,
- connection to pneumatic installation: 1/2" BSP.



### SPEEDY CLEAN

A machine for cleaning with special purpose detergent solution under pressure. Designed to clean hoses and hose assemblies.

Ensures obtaining cleanliness class: ISO 4406: 16/13, NAS 1638: 8.

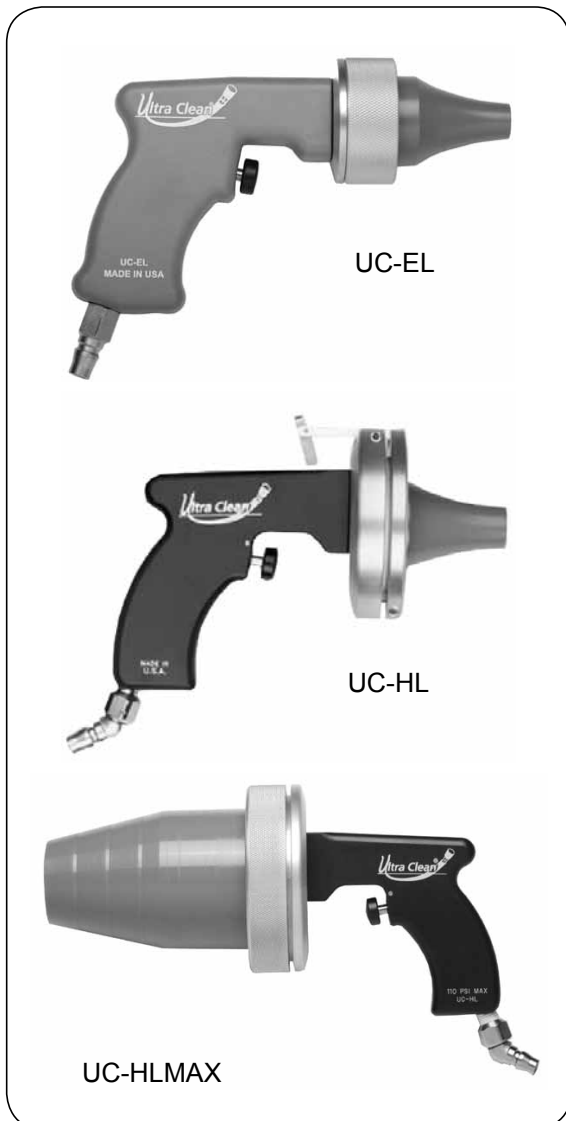
- hose diameter range from 1/4" up to 2",
- air-operated 6 bar - 7 l/min,
- container capacity 35 l,
- operation pressure 60 bar,
- weight 120 kg,
- universal adapter for hoses from 1/4" to 2"
- detergent 30 l (OP-SCQFLUID).

## ULTRACLEAN devices for hose, assembly and pipe cleaning

ULTRACLEAN devices are designed to clean hoses, flexible hose assemblies and pipes for high pressure hydraulics and for other industrial applications. Cleaning is carried out by shooting cleaning projectiles through the hose using compressed air.



**ULTRACLEAN devices and cleaning methods allow to obtain ISO 13/10 hydraulic fluid cleanliness class.**



### EL, HL, HLMAX

A manual device for shooting cleaning projectiles. Diameter range (of hoses):

- EL - 1/8" ÷ 1.1/4",
- HL - 1/8" ÷ 2",
- HLMAX - 1/8" ÷ 3.1/2",

Air-operated about 6 bar (1/2" hose).

Recommended filter 5 µm.

HL, HLMAX are supplied with quick release couplings with rotary plugs. EL is supplied with a quick release coupling.

### BM-1

A tabletop device for shooting cleaning projectiles.

Diameter range (of hoses):

- BM-1- 1/8" ÷ 1.1/4",

Air-operated about 6 bar (1/2" hose).

Efficiency up to 500 assemblies / hour.

A set with 5 µm filter, foot control and 7 nozzles selected according to customer specification.

The PVS module signalling that the cleaning projectile has left the assembly is also available.



## ULTRACLEAN devices for hose, assembly and pipe cleaning

### Set with UC-EL device (economical version)



#### EL7

A device allows cleaning hoses, pipes and assemblies in a diameter range from 1/8" to 1.1/4".

A cleaning set consists of:

- UC-EL cleaning gun with a plug,
- DN12 UC-QRC-C quick release coupling socket with a hose tail,
- 7 standard nozzles:  
NH06, NH10, NH13, NH16, NH19, NH25, NH32,
- UC-CC-LP case.



#### EL7DP

A device allows cleaning hoses, pipes and assemblies in a diameter range from 1/8" to 1.1/4".

A cleaning set consists of:

- UC-EL cleaning gun with a plug,
- DN12 UC-QRC-C quick release coupling socket with a hose tail,
- 7 standard nozzles:  
NH06, NH10, NH13, NH16, NH19, NH25, NH32,
- UC-CC-LP case,
- PC container for catching projectiles,
- set of standard cleaning projectiles:  
P007, P010, P012, P014, P016, P018 - 100 pcs. each,  
P020, P022, P026 - 50 pcs. each,  
P033 - 40 pcs.  
P040 - 30 pcs.

### Set with UC-HL device



#### HL9-2

A device allows cleaning hoses, pipes and assemblies in a diameter range from 1/8" to 2".

A set consists of:

- UC-HL cleaning gun with a swivel plug,
- UC-QRC-C quick release coupling socket,
- 9 standard nozzles:  
NH06, NH10, NH13, NH16, NH19, NH25, NH32, NH38, NH50,
- UC-AR1 nozzle adapter from 1/8" ÷ 1.1/4",
- UC-CC case.

# MACHINES AND ACCESSORIES - hose assembly production

## ULTRACLEAN devices for hose, assembly and pipe cleaning

### Set with UC-HLMAX device



### HLMAX-1-35

A device allows cleaning hoses, pipes and assemblies in a diameter range from 1/8" to 3.1/2".

A set consists of:

- UC-HLMAX gun with a plug,
- DN12 UC-QRC-RP quick release coupling with a swivel plug,
- UC-NU55/90 general purpose nozzle from 2.1/8" ÷ 3.1/2",
- standard nozzle adapters:  
1/8" ÷ 1.1/4" UC-AR2, 1.1/2" ÷ 2" UC-AR3,
- UC-CC case,

General purpose UC-NU55/90 nozzle does not require an adapter.

### Nozzle adapters



All standard nozzles (sizes up to 2") can be attached to UC-HL and UC-HLMAX devices, however appropriate adapters must be used.

adapter code	nozzle size range	device
UC-AR1	1/8" ÷ 1.1/4"	UC-HL
UC-AR2		UC-HLMAX
UC-AR3	1.1/2" ÷ 2"	

### Table for selection of nozzles and projectiles according to a hose diameter:

diameter	nozzle	projectile
3/16"	UC-NH06	UC-P007
1/4"	UC-NH06	UC-P010 lub UC-P012
5/16"	UC-NH08	UC-P012 lub UC-P014
3/8"	UC-NH10	UC-P014 lub UC-P016
1/2"	UC-NH13	UC-P018 lub UC-P020
5/8"	UC-NH16	UC-P022
3/4"	UC-NH19	UC-P026
1"	UC-NH25	UC-P033 lub UC-P036
1.1/4"	UC-NH32	UC-P040 lub UC-P045
1.1/2"	UC-NH38	UC-P050 lub UC-P055
2"	UC-NH50	UC-P060 lub UC-P065
2.1/2"	UC-NU55/90	UC-P075
3"	UC-NU55/90	UC-P085
3.1/2"	UC-NU55/90	UC-P100

The table above is of informative character.

**If a hose was cut with an abrasive disc, use a projectile of a diameter bigger than recommended.**

## ULTRACLEAN devices for hose, assembly and pipe cleaning

ULTRACLEAN devices are used to clean:

- hydraulic hoses and hose assemblies during production,
- used hydraulic hoses and hose assemblies,
- pipes while making pressure assemblies,
- pipes in metal constructions (also as protection against corrosion),
- heat exchanger components,
- steam boilers,
- air conditioning systems,
- gun barrels,
- chemical and food industry installations.

### Nozzle types

A wide range of nozzles available allows to use ULTRA CLEAN system to clean hoses, pipes, various types and dimensions of hose assemblies but also couplings of different shapes.



For hoses (UC-NH...) - nozzles for hoses are placed inside the hoses. They can be used for pipes, heavy wall pipes and couplings. It is the most popular type of nozzles.

JIC (UC-NJ...) - nozzles with connection ends adjusted to hose assemblies and pipe systems with JIC female thread connection.

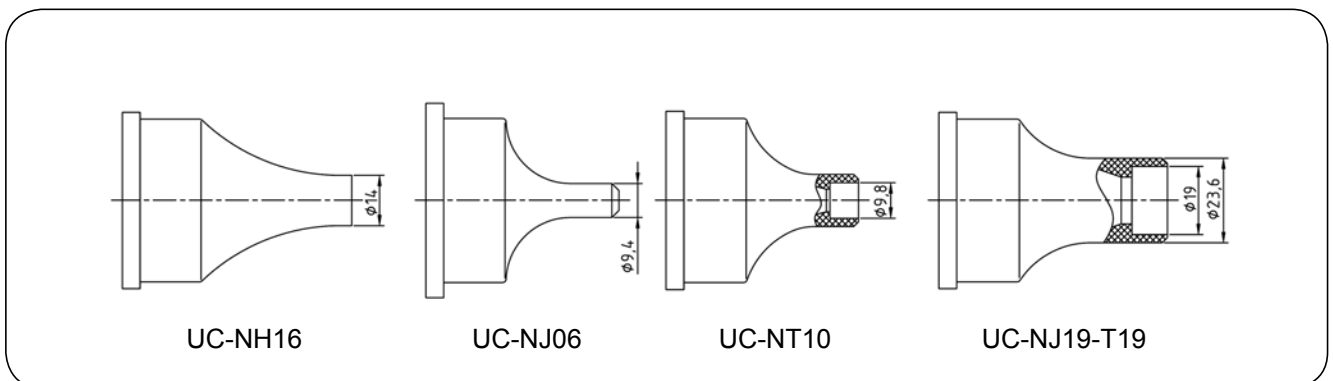
For pipes (UC-NT...) - push-on nozzles. The seal is obtained between a pipe end face and a stop inside the nozzle.

For metric pipes (UC-NP...) - push-on nozzles. The seal is obtained between a pipe end face and a stop inside the nozzle. Adjusted to the external diameter and thickness of metric pipes.

FFORX - nozzles designed for couplings with flat seal and sealing ring.

Big general purpose nozzle - nozzles similar to nozzles for hoses. Designed for diameters ranging from 55 mm (2.1/8") to 90 mm (3.1/2"). A diameter size rises by each 10 mm.

### Nozzle examples



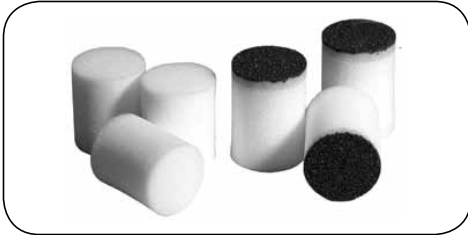
**Use Ultra Clean system to reduce installation shutdowns, extend service life of filters and reduce the risk of premature damage or deterioration of a system and equipment due to impurities !!!**

# MACHINES AND ACCESSORIES - hose assembly production

## ULTRACLEAN devices to clean hoses, pipes and hose assemblies

### Types of cleaning projectiles

Standard cleaning projectiles for the ULTRACLEAN devices are available in diameter range from 2 to 150 mm. The projectiles are shot into hoses, pipes or assemblies under pressure and clean their internal surface. The pressure is necessary as the diameter of projectiles is bigger by 20 ÷ 30% than the diameter of hoses, pipes or assemblies. Note: It is recommended to use the cleaning projectile to remove impurity reminders after the application of abrasive or grinding projectiles. In order to match nozzles with adequate projectiles the tables in a user manual have to be followed or experimentally determined.



- Cleaning** - for hoses and pipes; removes small particles of loose impurities.
- Abrasive** - for hoses, pipes and assemblies wherever a layer of scale, rust or other impurities sediment on the inside.
- Grinding** - pipes and assemblies with thicker layer of impurities, scale and rust.

O.D. [mm]	code			pack [pcs]
	cleaning	abrasive	grinding	
2	UC-P002	-	-	100
3	UC-P003	-	-	100
4	UC-P004	-	-	100
5	UC-P005	-	-	100
6	UC-P006	UC-A006	UC-GR006	100
7	UC-P007	UC-A007	UC-GR007	100
8	UC-P008	-	-	100
10	UC-P010	UC-A010	UC-GR010	100
12	UC-P012	UC-A012	UC-GR012	100
14	UC-P014	UC-A014	UC-GR014	100
16	UC-P016	UC-A016	UC-GR016	100
18	UC-P018	UC-A018	UC-GR018	100
20	UC-P020	UC-A020	UC-GR020	50
22	UC-P022	UC-A022	UC-GR022	50
24	UC-P024	UC-A024	UC-GR024	50
26	UC-P026	UC-A026	UC-GR026	50
28	UC-P028	UC-A028	UC-GR028	40
30	UC-P030	UC-A030	UC-GR030	40
33	UC-P033	UC-A033	UC-GR033	40
36	UC-P036	UC-A036	UC-GR036	30
40	UC-P040	UC-A040	UC-GR040	30
45	UC-P045	UC-A045	UC-GR045	20
50	UC-P050	UC-A050	UC-GR050	20
55	UC-P055	UC-A055	UC-GR055	15
60	UC-P060	UC-A060	UC-GR060	15
65	UC-P065	UC-A065	UC-GR065	10
70	UC-P070	UC-A070	UC-GR070	10
75	UC-P075	UC-A075	UC-GR075	10
80	UC-P080	UC-A080	UC-GR080	10
85	UC-P085	UC-A085	UC-GR085	10
90	UC-P090	UC-A090	UC-GR090	10
95	UC-P095	UC-A095	UC-GR095	10
100	UC-P100	UC-A100	UC-GR100	10
110	UC-P110	UC-A110	UC-GR110	10
120	UC-P120	-	-	10
130	UC-P130	-	-	10
140	UC-P140	-	-	10
150	UC-P150	-	-	10

## CLEAN SEAL system that prevents hose assemblies from dirt

ULTRA CLEAN is the leader in contamination control solutions of flexible hose assemblies and rigid pipes. To fully protect hose assemblies after being cleaned, the producer introduced a new solution - clean seal capsules. This process utilizes heat shrink technology to encapsulate the end of a hose or tube assembly. Such solution eliminates recontamination that occurs when ill-fitting caps and plugs are forced onto assemblies, causing plastic particles to shear off into the hose or tube.



Clean seal capsules leave absolutely no particles or sticky surface. They perfectly protect the hose assemblies or pipes from contamination until they are removed. Removal includes gripping the black pull tab, then ripping the pull tab upwards and finally slipping the clean seal capsule off the hose assembly or pipe. Clean seal capsules are single use and cannot be used again.



### UC-CSS-230V

Clean seal system bench-top capsule applicator suitable to apply clean seal capsules to a hose or tube assembly. Equipped with a timer that ensures that air heater will turn itself off automatically (time frame to be set with accuracy to 1 minute)

Diameter range: from 20 mm to 80 mm of clean seal capsule outside diameter that allows to protect fittings from 1/4" to 2". Oversized shrink tunnel allows to apply multiple hose and pipe assemblies at once.

Electric drive: 230 V / 50/60 Hz.

### UC-HL1910E

Industrial device (heat gun) with adjustable temperature control knob. Can be used with heat diffuser. Electric drive: 230 V / 50 Hz.

### UC-1.5HD, UC-2.0HD

Heat diffuser (fitting) to be assembled on heat gun. Available in two sizes that depend on heat gun nozzle: UC-1.5HD 1.1/2" (38 mm), UC-2.0HD 2" (50 mm). Made of: AISI 304 stainless steel.

### UC-HG-STAND

Flexible stand for heat gun UC-HL1910E equipped with a so called „sucker" that enables installation on any smooth surface. Flexible, user-friendly construction improves comfort of the operator during assembly of clean seal capsules on hose or pipe assemblies.



## Heat shrink capsules

code	dimensions	fitting hex. sizes	code	dimensions	fitting hex. sizes
UC-CSC-2030P	20x30 mm	12 ÷ 18 mm	UC-CSC-3840P	38x40 mm	30 ÷ 36 mm
UC-CSC-2224P	22x24 mm	16 ÷ 21 mm	UC-CSC-4650P	46x50 mm	34 ÷ 44 mm
UC-CSC-2540P	25x40 mm	18 ÷ 23 mm	UC-CSC-5260P	52x60 mm	41 ÷ 50 mm
UC-CSC-2840P	28x40 mm	22 ÷ 26 mm	UC-CSC-5860P	58x60 mm	49 ÷ 56 mm
UC-CSC-3140P	31x40 mm	24 ÷ 29 mm	UC-CSC-6760P	67x60 mm	55 ÷ 65 mm
UC-CSC-3440P	34x40 mm	27 ÷ 32 mm	UC-CSC-8060P	80x60 mm	64 ÷ 78 mm

## CLEAN SEAL protects hose assemblies against dirt

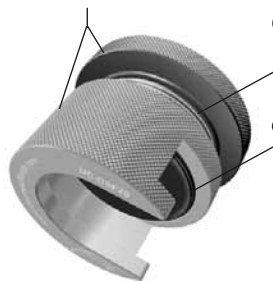
### Clean seal flanges for SAE flange protection

Fast and easy to handle, durable, manually operated device intended to protect hose assemblies with SAE flanges. Protects against contamination during dismantling or machine maintenance, but also directly after assembly cleaning. Another aim of the clean seal flanges is to prevent oil leakage from a hydraulic system when the hose assembly is disconnected. No extra tools are required to attach the device. It must only be pushed on SAE flange fitting. The solution guarantees reliable and tight protection of the hose assembly after dismantling. The clean seal flanges are available in different colours. Each colour corresponds to a particular size for fast and easy size identification.

#### Advantages:

- holds oil in a hydraulic system,
- no tools required for installation,
- prevents oil leakage out to the environment,
- protects a hydraulic system against dirt from the outside,
- faster and easier way of SAE flanges protection compared to standard methods,
- useful, reusable protection.

knurled surface allows a firm grip and reliable mounting



O-ring prevents aluminium surfaces against jamming

O-ring prevents accidental disconnection of both elements

space for spare O-rings

colour-coded aluminium for easy size identification



spanner holes for firmer tightening if required

The devices can be ordered separately or as a set.

table for clean seal flange size identification

code	size	application	colour
UC-CSF-8	1/2"	SAE 3000 SAE 6000 SUPER CAT	silver / black
UC-CSF-10	5/8"		red / black
UC-CSF-12	3/4"		blue / black
UC-CSF-16	1"		green / black
UC-CSF-20	1.1/4"		yellow / black
UC-CSF-24	1.1/2"		orange / black
UC-CSF-32	2"		black / black



### Set UC-CSF-AC

A set of clean seal flanges in the size range from 1/2" ÷ 2". The set consists of:

- 1/2" UC-CSF-8 flange (2 pcs),
- 5/8" UC-CSF-10 flange (2 pcs),
- 3/4" UC-CSF-12 flange (4 pcs),
- 1" UC-CSF-16 flange (4 pcs),
- 1.1/4" UC-CSF-20 flange (4 pcs),
- 1.1/2" UC-CSF-24 flange (2 pcs),
- 2" UC-CSF-32 flange (2 pcs),
- reinforced aluminium case.