



: solvent : solvent/aqueous : aqueous : bioremediation : ultrasonic : cleaning fluids : accessories : custom systems :

Graymills.com

1.888.GRAYMILLS

Selecting the right parts washer

Both your Graymills™ distributor and our factory staff are prepared to offer any assistance in selecting your parts cleaner. The more of the following information you furnish, the quicker—and more precisely—the appropriate parts washer can be selected.

- ☐ Soils to be removed.
- ☐ Current cleaning method used.
- ☐ Material(s) from which your parts are manufactured.
- ☐ Size, weight, configuration and quantity of the parts to be cleaned per day.
- ☐ Operations immediately before and after cleaning. (e.g., “machine before/paint after.”)
- ☐ Preferred method of handling: manual or automatic.
- ☐ Single or multi-step cleaning required.
- ☐ Type of cleaning fluid: solvent or water-based.



Units designated with the “FB” symbol are designed to reduce VOC emissions by meeting environmental regulations requiring a Freeboard ratio of 0.75. Consult your local environmental agency for specific requirements in your area.

Choosing your cleaning action

A SOAK	B BRUSH	C DIRECTED STREAM	D HIGH PRESSURE SPRAY
<p>Soaking is the simplest, least aggressive cleaning action. It is more effective with longer immersion time. This cleaning action is applicable where soils are easily removed and where low equipment cost is important.</p>	<p>Manual brushing is used as a supplement to other cleaning actions. This method is helpful in removing stubborn soils in hard to reach places. An assortment of parts cleaning brushes is available in the ACCESSORIES section. See accessories page 28-29.</p>	<p>A flexible hose is used to direct a flushing stream of low pressure cleaning fluid directly at the soiled part. This cleaning action is particularly effective for flushing parts when brushing. For maximum results, the directed stream action can be used in combination with other cleaning actions. Some models feature a second hose with a pistol grip nozzle, which provides an adjustable flushing spray.</p>	<p>Quick and effective cleaning is accomplished by a powerful spray of heated, water-based cleaning solution. The high pressure spray blasts away the toughest deposits without damaging precision parts.</p>
E TURBO FLUID AGITATION	F LIFT PLATFORM AGITATION	G HEATED	H ULTRASONICS
<p>This cleaning action is a result of the constant movement of the solution through and around the soiled parts. It provides faster cleaning than manual applications. A variety of pump and air circulated systems are available for fluid agitation.</p>	<p>A “scrubbing” action is achieved by continually moving the parts vertically through the cleaning fluid. The motion is accomplished by a pneumatically operated platform in the tank. The system is automatic. The cleaning action is intensified when used in combination with Turbo fluid agitation (see page 17). It is ideally suited for a wide range of cleaning tasks.</p>	<p>(Water based solution only.) The effectiveness of water based cleaning solutions increases dramatically as the temperature increases. The optimum recommended temperature is governed by the equipment and the particular detergent used.</p>	<p>Ultrasonic systems work by inducing controlled cavitation in the cleaning fluid. Cavitation bubbles form and collapse suddenly, releasing tremendous energy against the surfaces of objects immersed in the tank. This action “scrubs” hard to remove soils from the parts.</p>

Catalog Contents / Selection Guide

PAGE NO.	AVAILABLE CLEANING ACTION	---	A	B	C	D	E	F	G	H
			SOAK	BRUSH	DIRECTED STREAM	HIGH PRESSURE SPRAY	IN-TANK FLUID AGITATION	LIFT PLATFORM AGITATION	HEATED (AQUEOUS ONLY)	ULTRA- SONICS
5	SOLVENT									
5	EC-A		★	■	★					
5	HK150 / H42RN		★	■	★					
6	DM232/236	FB		■	★					
7	PL36	FB	★	■	★					
7	PL422		★	■	★		★			
8	Clean-O-Matics™	FB	★	■	★		★			
10	SOLVENT / AQUEOUS									
11	Turbo-Series T24/36		★	■			■		■	
11	Turbo-Series T4330-thru T8430		★				★		■	
14	T-Series Liftkleen™ T2420-T3626		★	■			■	★	■	
15	L-Series Liftkleen™ L36 thru L72		★				■	★	■	
16	Oil Separators / Turbo Boost									
17	AQUEOUS									
17	Tempest™ 10/20			■		★			★	
18	DH226			■	★				★	
18	PH822	★	★	★	★				★	
19	DH536R			★	★				★	
19	DH436R			★	★				★	
20	BIOREMEDIATION / AQUEOUS									
20	BIO822	★	★	★	★				★	
21	BIO436R/536R			★	★				★	
22	ULTRASONIC / AQUEOUS									★
23	Benchtop BTU 4-17	★	★	■					★	★
24	SonicMax Console CTU3218-CTU7028	★	★	■					★	★
25	Sonic Liftkleen™ TU24 / T360	★	★	■				★	★	★
26	Liftkleen™ Super Sonic TUS3725SL	★	★	■				★	★	★
28	Accessories									
30	Fluids									

★ STANDARD

■ OPTIONAL

FB FREEBOARD

catalog contents/selection guide

Why Graymills?

Why should you select a Graymills parts washer instead of one of the other brands?

Here are a few things you should consider when making your purchase:

- 1 Graymills is a family-owned and operated company, founded in 1939. Quick response when you need it. No corporate red tape.
- 2 We manufacture in our own 90,000 sq. ft. plant, centrally located in Chicago. Our own engineers design the equipment we make.
- 3 Average length of employee service in our plant is around 12 years. That experience goes into every parts washer we make.
- 4 In order to control quality and on-time delivery, manufacturing is done by state-of-the-art equipment:
 - All metal cutting is done by a laser for accurate, clean-cut parts.
 - Welding is either mig or tig for strong welds.
 - Every welded seam is leak-tested—that's 100%. While the test criteria is 8 hours, we leave our tanks sit for 24 hours. Just to be sure.
 - After passing the leak test, every tank is power-washed with a solution that assures aggressive bonding of the paint to the sheet metal.
 - Our finish is epoxy polyester hybrid powder paint, oven-cured at 410° F for 25 minutes. We think you'll be more than happy with this finish for a long time.
 - Because we've put a lot into our parts washers, we want you to receive it the way it looked when we finished building it. We go to great lengths to make sure our packaging provides safe transit to your door.
 - Do we make mistakes? Sure. When we do, you'll find our Chicago-based, experienced Customer Service department anxious to correct the mistake and quickly get you up and using your equipment.

It may sound "hokey" now that we are in the 21st Century—but I think when you use your Graymills parts washer, you'll understand why we've called them, "The Friend Maker" since 1940.



Craig Shields, *President*

Custom Systems

We will customize a standard model or build you a Special. Just tell us about your cleaning application.

Look through our catalog and notice the wide range of standard models, from the 5 gallon bench top unit to the 600 gallon Liftkleen™. Also notice the number of options available, which include stainless steel tanks and pumps, air powered motors, turbo pump agitation, lift platform agitation, and ultrasonics. Chances are one of these models and its options will meet your cleaning applications.

But maybe your cleaning needs run to the unusual. Does your system require portability, batch cleaning, or multiple-stage processing? Or do you desire a single or multi-tank system? We'll design and build a system for you whether it means simply altering a standard model or creating a one-of-a-kind special. Just contact your Graymills distributor or phone or fax our factory.

For more information 1-773-248-6825 FAX: 1-773-477-8673

Parts Washers Designed and Built by Graymills for:

Automotive/Fleet Industry

Clean engine, transmission and various other mechanical components for service/repair/rebuild.

Aerospace Industry

Multi-stage, multi-process wash system including ultrasonics for sophisticated valve assemblies.

Electronic Tool Repair & Refurbishment

Cleaning power tool components before servicing.

Medical Industry

Ultrasonic wash system for machinery maintenance.

Petrochemical Industry

Oil field equipment service/repair/rebuild.

Printing & Paper Processing Industry

Press parts & anilox roll maintenance.

Environmental Alternatives

Equipment specifically designed for use with soy-based solvents.

General Industrial

Manufacturing or Repair/Service

Econo-Models

Economical solvent cleaner for professional or home shop use in a convenient, portable size.

Standard features : EC-A :

- **Flexible Stay-Put metal flush hose** for directable hands-free flushing action
- **Industrial-grade steel** tank with durable powder-coat finish for **durability** and long-life
- **Fusible safety link** closes lid in event of fire
- **Removable lid/cover** for **easy access** to pump and easy cleaning of tank

EC-A	<i>Econokleen Benchtop Parts Washer</i>		
MODEL NO.	OPERATING FLUID CAP.	MOTOR	
EC-A	3-5 gal	115V, 60 Hz, 1 Ph	

Product features : HK150 : H42RN/2R

- **Abrasive-resistant pump**; motor is not exposed to the cleaning solution - eliminates need for pump seals. (400gph flow rate HK150), (270gph flow rate H42RN)
- **Flexible Stay-Put metal flush hose** for directable hands-free flushing action
- **Filtration system** includes sludge collection basket with dual foam filter to keep solution cleaner longer (HK150 only)
- **Removable internal work shelf** or basket for easy manual cleaning and parts visibility
- **Bottom drain** for easy fluid change-outs
- **Fusible safety link** closes lid in event of fire
- **16 gauge steel** tank with powder-coat finish for durability and long-life
- **Removable legs** for conversion into bench-top unit (HK150 only)
- **Freeboard compliant** (H42RN only)



Full-sized free-standing units offer professional features in an economical package. Ideal for general maintenance and repair in industrial, automotive, marine or farm applications.

- **Optional external drain shelf** to drain cleaned parts (see Accessories page 28-29)

HK150	<i>Free-standing Parts Washer</i>		
MODEL NO.	OPERATING FLUID CAP.	MOTOR	
HK150-A	2 1/2 -5 gal	115V, 60/50 Hz, 1 Ph	

H42RN/2R		<i>Flo-Bac™ Parts Washer/ Soak Tank</i>	
MODEL NO.	TYPE	OPER. FLUID CAP.	MOTOR
H42RN	Free-standing	3-5 gal	115V, 60/50 Hz, 1 Ph
2R	Soak Tank	25 gal.	N/A

Drum Mount



DMD232

Standard features : DM232/236 :

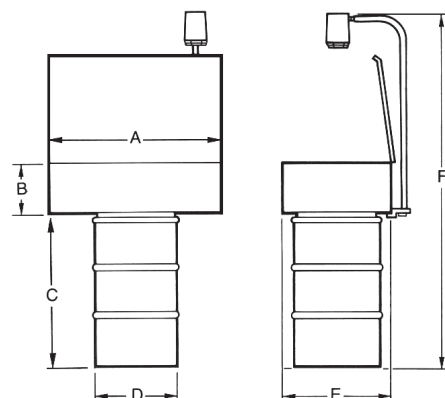
- **Abrasive resistant 170 GPH pump**
- **Reusable nylon filter** system removes large particles of dirt and grime to keep fluid clean longer
- **Flexible Stay-Put metal flush hose** for directable hands-free flushing action
- **Metal drain strainer** keeps small parts from falling into cleaning solution tank
- **16 gauge steel** tank with **powder-coat** finish for durability and long-life
- **Lift-off sink** for easy setup and maintenance; fast cleanup and fluid changes
- Built **two inches taller** than competition to eliminate bending/stooping—strain-free use!
- Available in **16 & 30 gallon** drum sizes
- **Fusible safety link** closes lid in event of fire
- **Freeboard compliant**

DMD deluxe model :

- Deluxe models have a **patented retractable pump** to avoid back strain when removing tank from drum because tank needs to be lifted only a few inches from drum. With pump inside mounting ring, tank sits flat on bench or floor, saving **pump** from abusive shocks or accidental mishandling
- **Worklight** is designed so it cannot be pulled down to obstruct the cover from closing

DMD/DMS
232/236

Spacious recirculating parts washer can be placed at jobsite for on-the-spot cleaning.



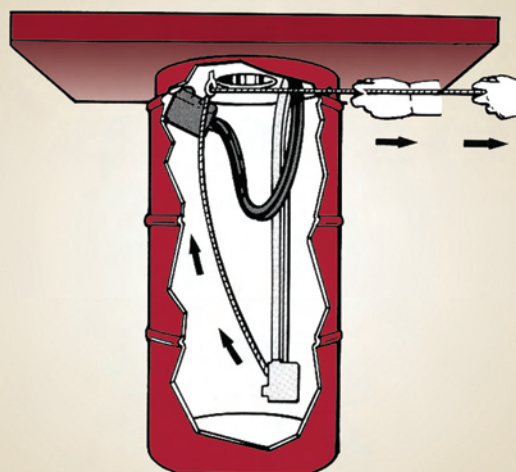
MODEL NO.	A	B	C	D	E	F
DMD/DMS 232	32"	8 ³ / ₄ "	28 ¹ / ₂ "	14 ¹ / ₂ "	18"	65"
DMD/DMS 236	36"	8 ³ / ₄ "	30 ³ / ₄ "	19 ¹ / ₄ "	20"	67 ¹ / ₈ "

DESCRIPTION	DM 232 MODELS	DM 236 MODELS
Operating Fluid Capacity	5-10 gal	10-20 gal
Drum Capacity	16 gal	30 gal
Motor	115V, 60 Hz, 1 Ph	

Graymills
Patented

Retractable Pump

Reduces Lifting Height to Minimize Back Strain



Handi-Kleen™

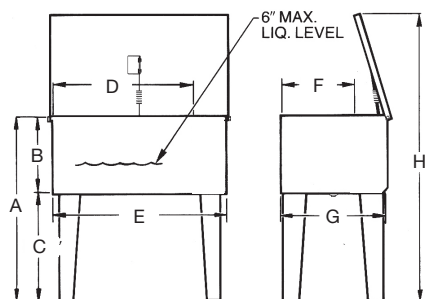
Versatile unit optimizes flush hose (hand-held brush cleaning optional), sloped work shelf for draining, small parts basket and optional external drain shelf. 20 gallon tank has bottom drain for easy maintenance.



solvent

PL36/PL36-FB

Combination of solvent scrub station and soak tank



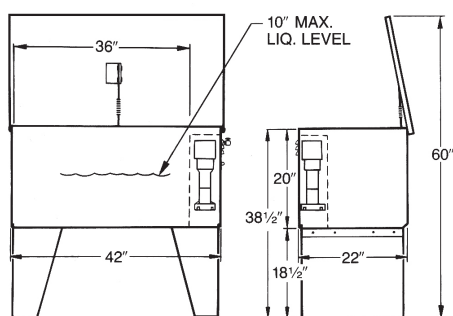
MODEL NO.	A	B	C	D	E	F	G	H
PL36-A	38 1/2"	16"	22 1/2"	29 1/2"	36"	15 1/2"	22"	60"
PL36-FB	36"	27 1/2"	8 1/2"	32"	36"	21"	22"	57"

Additional features : PL36-FB :

- **Freeboard Compliant** design incorporates deeper tank
- **Abrasive resistant 170 GPH pump**

PL422

With solvent recirculating pump and in-tank air agitation manifold



MODEL NO.	OPERATING FLUID CAP.	MOTOR
PL422-A	20-40 Gal	115V, 60/50 Hz, 1 Ph

An in-tank air manifold agitates the solvent to loosen dirt and pre-clean parts. The in-tank metal grate perfectly positions parts above sludge on bottom—exposing all surfaces to agitation for more effective cleaning.

Optional : PL36-422 :

- **External drain shelf** will drain solution back to tank and reduces drying time.

See Accessories page 28-29



Standard features : both models :

- **Filter and sludge collector basket** with dual-element foam filter keeps fluid cleaner longer for fewer change-outs (Not available on PL36-FB.)
- **Flexible Stay-Put metal flush hose** for directable hands-free flushing action
- **16/18 gauge steel** tank with durable powder-coat finish for durability and long-life
- **Bottom drain** convenient for fluid change-outs
- **Small parts basket**
- **Fusible safety link** closes lid in event of fire

Additional features : PL36 :

- **400 GPH** Graymills Superflo™ pump
- **Removable work shelf** for parts cleaning above fluid or soaking in solvent tank

Additional features : PL422 :

- **400 GPH** Graymills Superflo™ pump
- In-tank air manifold **agitates the solvent** to loosen dirt and pre-clean parts
- **Two-piece sliding, solid metal work shelf** extends over the entire tank to provide a 34 1/2" x 20 3/16" work surface as well as to reduce solvent loss due to evaporation. Sliding the right shelf over the left creates an 18" x 21 1/2" soak tank with an equal size work area. Or store both shelves in the side slot for a fully-open soak tank
- The **in-tank metal grate** perfectly positions **parts above sludge** on bottom
- Unique **safety device** cuts off air flow to manifold in unlikely event of fire

CLEAN-O-MATIC™

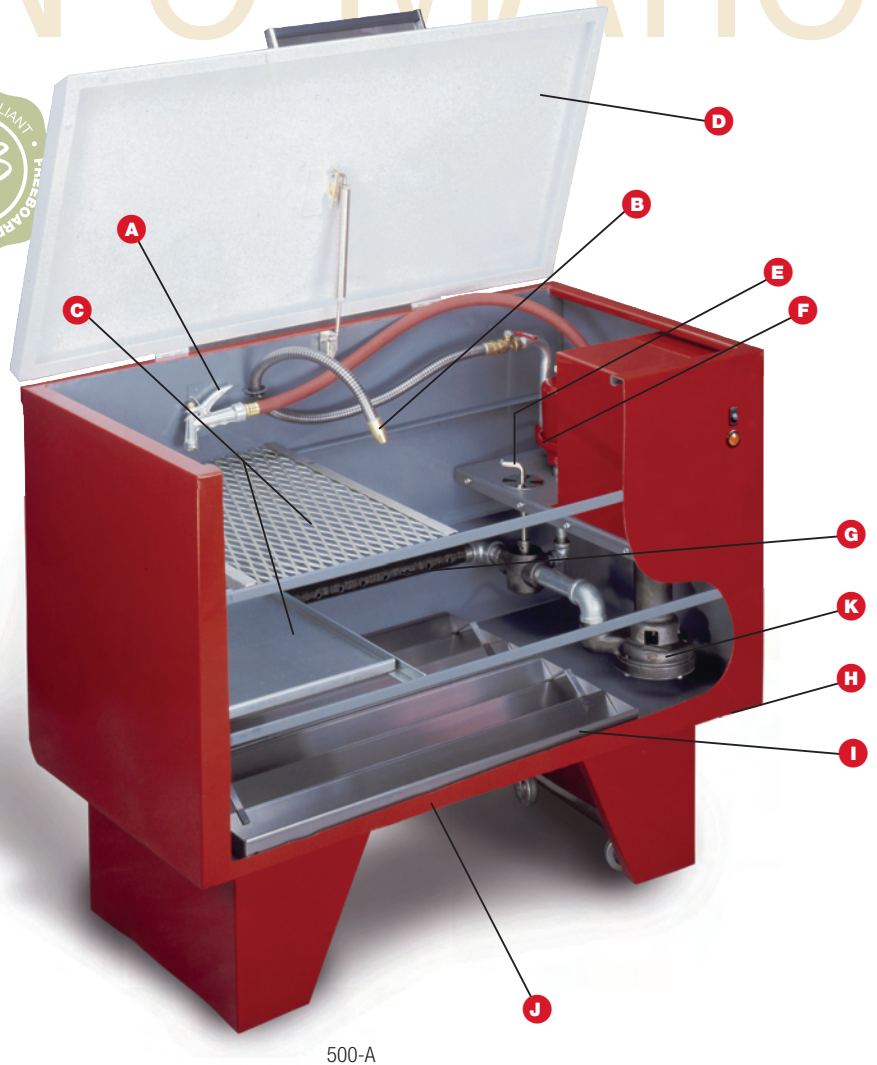
Clean-O-Matic:™ The Industry Standard for more than 50 years



Ruggedly constructed for years of trouble-free solvent cleaning service. These feature-packed models offer a variety of design elements to make your cleaning tasks quicker and more efficient while remaining flexible enough to suit most cleaning challenges.

The 5 Clean-O-Matic™ models progress in size and power from the 300-A, with a 1/8 horsepower pump and 42-gallon capacity, to the 902-A, with two 1/3 horsepower pumps and 117 gallon capacity.

All models feature three way cleaning—pump for in-tank agitation that loosens dirt/grime on soaking parts; pistol grip nozzle for flushing away contaminants; and Flexible Stay-Put flush hose in conjunction with a hand-held brush.



500-A

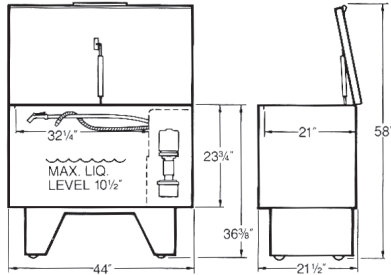
- A** Pistol grip spray nozzle is adjustable for light spray or solid stream—direct where cleaning and rinsing of parts is needed
- B** Extra long Stay-Put flexible metal flush hose for directable hands-free flushing action
- C** Adjustable bi-level work shelves
- D** Safety lid shuts automatically in case of fire—or close to reduce fluid evaporation
- E** Three-way cleaning action selector valve permits using pump, pistol grip spray nozzle or flush hose cleaning actions individually or in combination
- F** Washable 40 mesh screen solvent filter
- G** Hydro-Jet Manifold in-tank agitation loosens dirt and grime as parts soak
- H** Drain plug
- I** Optional removable soak/sludge trays keep soaking parts off bottom—makes sludge removal easier
- J** Rugged 16 gauge powder-coated steel construction
- K** Graymills abrasive-resistant pump has no bearings/seals immersed in fluid—extends pump life

(Optional Accessories, see pages 28-29)

All models include features shown on page 8.

300-A
500-A

The maintenance and repair shop standard



MODEL NO.	OPERATING FLUID CAP.	MOTOR
300-A	16-42 gal	1/8 HP, 115V, 60/50 Hz, 1 Ph
500-A	16-42 gal	1/3 HP, 115V, 60/50 Hz, 1 Ph

both models : 300-A + 500-A :

- 44" L x 21" W x 23³/₄" H work space
- 16-42 gallon capacity
- Casters allow unit to be easily moved

300-A :

- 1/8 HP Graymills Superflo™ pump, 1000 GPH
- Pump provides in-tank fluid agitation

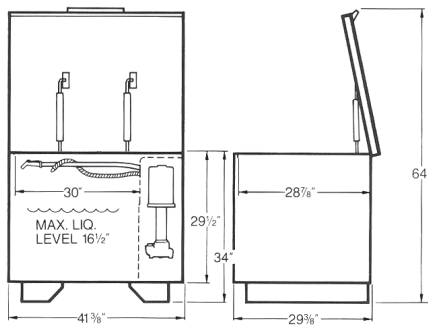
500-A :

- 1/3 HP, Graymills Superflo™ pump 2400 GPH
- Pump with Hydro-Jet Manifold provides active in-tank fluid agitation



800-A

All the operating features of the 500-A in a tank with twice the fluid capacity



MODEL NO.	OPERATING FLUID CAP.	MOTOR
800-A	50-85 Gal	1/3 HP, 115V, 60/50 Hz, 1 Ph

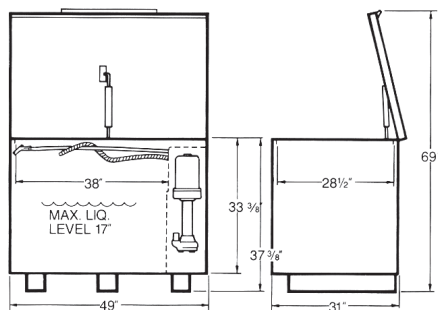
800-A :

- 41³/₈" L x 28⁷/₈" W x 29¹/₂" H work space
- 50-85 gallon capacity
- 1/3 HP, Graymills Superflo™ pump 2400 GPH
- Pump with Hydro-Jet Manifold provides active in-tank fluid agitation



900-A
902-A

These large units handle parts like engine blocks, transmissions and compressors; 902-A has two 1/3 HP pumps



MODEL NO.	OPERATING FLUID CAP.	MOTOR
900-A	50-117 gal	1/3 HP, 115V, 60/50 Hz, 1 Ph
902-A	50-117 gal	1/3 HP, 115V, 60/50 Hz, 1 Ph

both models : 900-A + 902-A :

- 49" L x 28¹/₂" W x 33³/₈" H work space
- 50-117 gallon capacity
- Pump with Hydro-Jet Manifold provides active in-tank fluid agitation

900-A :

- 1/3 HP, Graymills Superflo™ pump 2400 GPH

902-A :

- Two 1/3 HP, Graymills Superflo™ pumps 2400 GPH each, provide aggressive in-tank fluid agitation through dual Hydro-Jet Manifolds—operate independently or together



TURBO ACTION



The Turbo-Action Series from Graymills is the perfect solution for hands-off, immersion cleaning required for challenging parts cleaning applications. Turbo-Action total immersion parts cleaners convert the jet stream from Graymills Superflo™ pumps into powerful, hands-off fluid action that gets parts cleaner, faster without manual handling or scrubbing. Unlike spray cabinet type cleaners that employ spray nozzles, total immersion cleaners bring cleaning action to every external and internal surface—even blind holes. Turbo-Action units scour and flush parts clean and are offered in both solvent and heated aqueous versions, with pumps that provide up to 10,000 GPH. The heated aqueous units come standard with energy-saving insulation and corrosion-resistant, insulated stainless steel-lined lids.

A variety of tank sizes and options, including stainless steel tanks, filtration systems and baskets, ensures the Turbo-Action Series can handle your largest cleaning task, including cylinder heads, transmission housings, heavy castings, and complex parts.

- Total parts immersion provides **hands-off cleaning** without operator involvement
- **Grid platform** (T24/T36 only) or **Sludge Trays** (T4330-T8430) support parts above bottom—allows for **all sides** of parts to be **exposed to cleaning solution**
- Two-inch drain for **easy fluid change-out**
- Multiple tank sizes up to **262 gallon** capacity
- **Solvent or aqueous** models available; some models can be **field-retrofit** and converted to aqueous versions if cleaning method changes.
- Fusible **safety link** closes lid in event of a fire
- Variety of options available to handle almost any application: **filtration systems, stainless steel tanks, baskets** (See Accessories pages 28-29)

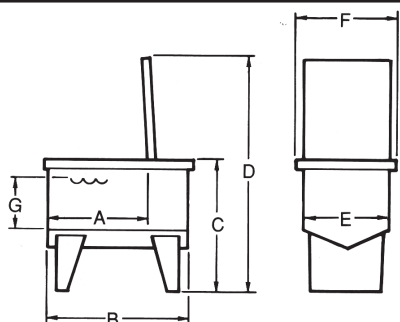
Turbo Units

solvent/aqueous

The efficiency of immersion cleaning allows more time for the cleaning solution to do the work, provides penetration into blind holes, nested or layered parts, maximizes soak time to loosen contamination, and the Turbo Action of the pump adds to the speed and efficiency of the cleaning process.

TURBO 24/36

The T24 and T36 are Graymills most economical total immersion cleaners and are offered in both solvent and aqueous (heated) versions.

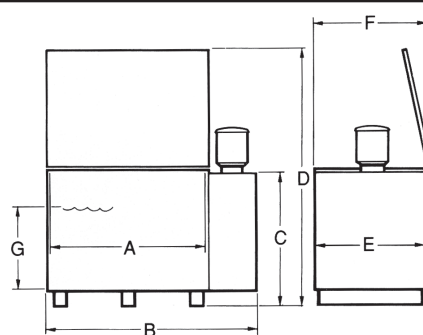


MODEL NO.	A	B	C	D	E	F	G
T24	25 ¹ / ₂ "	39"	34"	66"	22"	24 ¹ / ₂ "	12"
T36	35 ¹ / ₂ "	50"	34"	75"	27"	29 ¹ / ₂ "	18"

DESCRIPTION	T24	T36
Immersion Space (L x W x D)	24" x 20 ¹ / ₂ " x 12"	34" x 25 ¹ / ₂ " x 18"
Overall Dimensions (L x W x H) (lid open)	39" x 24 ¹ / ₂ " x 66"	51" x 29 ¹ / ₂ " x 75"
Liquid Capacity (gal)	47	118
Motor/Pump (Hp)	¹ / ₂	¹ / ₂
Gallons Per Hour	3000	3000
Voltage	115/230/460V	115/230/460V
Hertz Phase	60/50-1 or 3 Ph	60/50-1 or 3 Ph
Heater for water-based cleaning only 60° - 180° F (15° - 82° C)	6.75 kW	6.75 kW

TURBO 4330- 8430

With five tank sizes and liquid capacities up to 262 gallons, the largest "Turbo Series" is also available in solvent or aqueous versions. 10,000 gallon per hour flow ensures effective scouring and cleaning of parts.



MODEL NO.	A	B	C	D	E	F	G
T4330	39 ¹ / ₂ "	56 ¹ / ₂ "	37"	67"	27 ¹ / ₂ "	30"	23 ¹ / ₄ "
T5430	49 ¹ / ₂ "	66 ¹ / ₂ "	37"	67"	27 ¹ / ₂ "	30"	23 ¹ / ₄ "
T6430	59 ¹ / ₂ "	76 ¹ / ₂ "	37"	67"	27 ¹ / ₂ "	30"	23 ¹ / ₄ "
T7430	69 ¹ / ₂ "	86 ¹ / ₂ "	37"	67"	27 ¹ / ₂ "	30"	23 ¹ / ₄ "
T8430	83"	96 ¹ / ₂ "	37"	67 ¹ / ₂ "	27 ¹ / ₂ "	30"	23 ¹ / ₄ "

DESCRIPTION	T4330	T5430	T6430	T7430	T8430
Immersion Space (L x W x D)	39 ¹ / ₂ " x 27 ¹ / ₂ " x 23 ¹ / ₄ "	49 ¹ / ₂ " x 27 ¹ / ₂ " x 23 ¹ / ₄ "	59 ¹ / ₂ " x 27 ¹ / ₂ " x 23 ¹ / ₄ "	69 ¹ / ₂ " x 27 ¹ / ₂ " x 23 ¹ / ₄ "	83" x 27 ¹ / ₂ " x 23 ¹ / ₄ "
Overall Dimensions (L x W x H) (Lid Open)	56 ¹ / ₂ " x 30" x 67"	66 ¹ / ₂ " x 30" x 67"	76 ¹ / ₂ " x 30" x 67"	86 ¹ / ₂ " x 30" x 67"	96 ¹ / ₂ " x 30" x 67 ¹ / ₂ "
Liquid Capacity (gal)	142	169	200	231	262
Pump(s) 1 ¹ / ₂ hp	1	1	1	1	2
Gallons Per Hour	10,000	10,000	10,000	10,000	20,000
Voltage	230/460	230/460	230/460	230/460	230/460
Hertz Phase	60/50-1 or 3 Ph	60/50-1 or 3 Ph	60/50-1 or 3 Ph	60/50-1 or 3 Ph	60/50-1 or 3 Ph
Heater for water-based cleaning only 60° - 180° F (15° - 82° C)	4.5 kW	4.5 kW	4.5 kW	4.5 kW	4.5 kW



T-Series

L-Series

Why Immersion Cleaning is Preferred

Unlike standard spray cabinet washers, immersion cleaning exposes all surfaces of the part, including blind holes and small crevices, to the cleaning solution. By combining hands-off, total immersion cleaning, easy part load/unload, vertical lift platform agitation and optional

Graymills Superflo™ pump jet action, the Liftkleen™ offers the most intensive, efficient immersion cleaning system available. Complex parts, stacked or nested parts are no problem.

The T and L Series Liftkleens™ offers a variety of sizes and options, including

pump, agitation, ultrasonics, and automatic control of cleaning cycles, that make it the easiest-to-use, large size cleaner on the market. One touch control of the pneumatic air system and electronic controls turns multi-function operation into a simple step.

L and T-Series Options Include:

- **High power Graymills Superflo™ pump** for in-tank fluid agitation adds more turbulence to washing tank
- **Drop-in Heaters** and insulation for aqueous units
- **Lift roller platform** aids in loading and unloading parts
- **Stainless steel tanks**, lifting mechanisms, and racks to ensure long life of unit
- **Oil Separator** to remove oil from aqueous cleaning solution during the cleaning process
- **Turbo-boost filtration** system filters and extends life of cleaning solution (see page 17)

L-Series Only Options:

- **Touch-Screen PLC Control** for fully automated and one-touch cleaning control and efficiency offering 24/7 heater control, automatic lid and cycle timer
- **Push-Button PLC** control for a modern, yet economical control

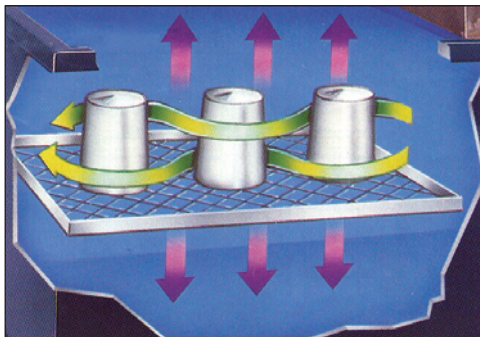
T-Series Only Options:

- Ultrasonic Models create **powerful cavitation** to effectively clean wide range of parts and configurations (see pages 25-27)
- Rotating **small parts basket** (see Accessories page 28)



Standard Features for T-Series and L-Series Liftkleen™ Models

- Both **Solvent** or **Aqueous** versions
- Air-operated **lift platform**
- **Fiberglass grate**, mild steel or stainless steel optional
- Hands-off, **full immersion cleaning**; from simple soaking to lift platform agitation
- **Fully adjustable** lift platform **agitation**—speed and stroke length
- Lift mechanism is entirely outside of tank for **long service life**
- **Stainless steel lined lids** on L and heated T-Series units
- **Auto-lid opens** at end of cycle or upon machine reset (L-Series Only)



Dual Action Cleaning Option – Shortens Cleaning Cycle up to 40%

- Optional **Superflo™ Pump** circulates up to **10,000 GPH**
- The **Dual Action cleaning cycle** combines vertical platform agitation with a Graymills Superflo™ centrifugal pump jet stream for **faster cleaning** including crevices, blind holes and recesses
- Dual Action cleaning is effective in both **cold solvent** and **heated aqueous** applications

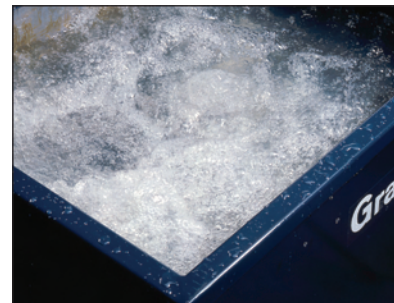
Hands-Off Automatic Operation with Liftkleen™



- Parts are **easily loaded** on platform at tank top level



- Start cycle **lowers parts** into solution
- **Fully immersed parts** may be soaked and/or agitated with programmable cleaning

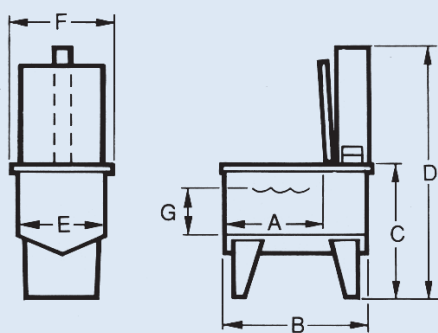


- **Auto-lid** opens at end of cycle
- Platform **raises for draining** and easy parts removal



T-SERIES 24/36

Versatile, convenient size immersion parts washer with V-Shaped bottom and center drain for easy cleaning.



MODEL NO.	A	B	C	D	E	F	G
T2420	24"	39"	34"	66"	20 $\frac{1}{2}$ "	24 $\frac{1}{4}$ "	12"
T3626	34"	50"	34"	75"	25 $\frac{1}{2}$ "	29 $\frac{1}{2}$ "	18"

SPECIFICATIONS	T2420	T3626
Immersion Space (L x W x D)	24" x 20" x 12"	34" x 25 $\frac{1}{2}$ " x 18"
Overall Dimensions (L x W x D)	39" x 24 $\frac{1}{2}$ " x 66"	50" x 29" x 75"
Liquid Capacity	47 gal	118 gal
Platform Dimensions (L x W)	22" x 19"	32" x 24"
Standard Lift Capacity/PSI	125/90	200/90
Stroke Length	3"	3"
Air Inlet	$\frac{1}{4}$ "	$\frac{1}{4}$ "
Strokes Per Minute	60-80	60-80
Drain	2"	2"

OPTIONS	T2420	T3626
Pump Agitation Horsepower	$\frac{1}{2}$	$\frac{1}{2}$
Gallons per Hour	3,000	3,000
Voltage Options	115V, 230V, 460V	115V, 230V, 460V
Hertz Phase	60-1 or 3	60-1 or 3
Heating System (Electric Heat) (Range: 60-180F/16-82C)	6.75kW	6.75kW
Roller Platform	*	*
Filtration System	*	*

* Available on this model, consult Graymills Price list for specs

Liftkleen™ Series

The Liftkleen™ L-Series has been proven by years of tough field use in industrial, maintenance, heavy duty truck and automotive repair facilities. These automatic, agitating, immersion cleaning machines are solidly built for long service life. They are available for both heated aqueous and solvent cleaning applications.

Two Series—"L" and "T" serve unique needs. The "T" Series has a smaller footprint, liquid capacity and lift capability. They are widely used for job site "cell" cleaning in manufacturing, automotive and maintenance shops. With most of the same features as the "L" Series, they offer quick, thorough cleaning for smaller parts.

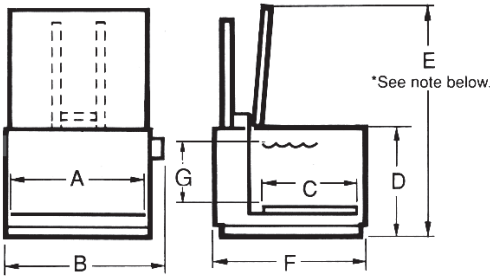
Graymills "L" Series picks up where the "T" Series leaves off. Choose from 5 tank sizes designed for larger parts, and heavier components (up to 1,850 pounds). All lift platform components are outside the tank, eliminating the most common reason for failure in many other machines. "L" Series Liftkleens™ are the workhorse of today's manufacturing, maintenance and repair operations. Air filter/regulator (FLR) comes standard with all T & L Series Liftkleen™ units.

Special Options offered:

- **Electric heat** (Aqueous Only) increases the cleaning capability of your aqueous solution with **optional heaters** available for up to **180° F (82° C)**
- **Roller platform** aids in loading and unloading of parts
- **High power** Graymills Superflo™ pump adds **in-tank fluid agitation** for faster cleaning
- **Turbo-boost filtration system** increases turbulence in wash tank and cleans sediment from wash tank while filtering the cleaning solution (see page 17)
- **Ultrasonics** for critical detailed cleaning
- **Extra lift capacity** accommodates parts up to 1850 pounds (L Series only)
- **Pneumatic Cover with safety link** automatically raises and lowers at beginning and ending of wash cycle (L Series only)
- **Anti-tie down device** incorporates a two-handed, controller device to start cleaning process (L Series only)
- **7-day heater timer** (Aqueous only) controls time you want heater to come on to preheat solution or stay off to save energy (L Series only)
- **Adjustable Stroke Length** to allow fine tuning of cleaning process (L-Series Only)

L-Series

solvent/aqueous

L-Series		The largest immersion parts washers offered by Graymills					
							
MODEL NO.	A	B	C	D	E	F	G
LKR36	35½"	51"	24"	39½"	76"	45"	20"
LKR48	47½"	64"	36"	39½"	81"	57"	20"
LKR60	59½"	76"	36"	39½"	81"	57"	20"
LKD60	59½"	76"	36"	49½"	96"	57"	30"
LKD72	71½"	88"	42"	49½"	96"	63"	30"
LKD84	83½"	100"	36"	49½"	96"	57"	30"

* Maximum height for Model LKR36 is to top of mast. All other L-Series Liftklean™ use open lid as maximum height.



Touch-screen PLC controls for wash cycle, heater, lift platform agitation and lid.

SPECIFICATIONS	LKR36	LKR48	LKR60	LKD60	LKD72	LKD84
Immersion Space (WxDxH)	39" x 28" x 20"	52" x 39" x 20"	64" x 39" x 20"	64" x 39" x 30"	76" x 45" x 30"	88" x 39" x 30"
Overall Dimension (WxDxH)	51" x 45" x 76"	64" x 57" x 81"	76" x 66" x 81"	76" x 66" x 96"	88" x 72" x 96"	100" x 66" x 96"
Liquid Capacity	170	290	355	491	667	670
Platform Dimensions (WxD)	35½" x 24"	47½" x 36"	59½" x 36"	59½" x 36"	71½" x 42"	84" x 36"
Standard Lift Capacity / PSI	550 / 100	450 / 100	700 / 100	700 / 100	700 / 100	700 / 100
Stroke Length	5	5	5	5	5	5
Strokes per Minute	25-40	25-40	25-40	25-40	25-40	25-40
Air Inlet	3/8"	3/8"	3/8"	1/4"	1/4"	1/4"
Water Inlet	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Overflow Outlet	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Drain	2"	2"	2"	2"	2"	2"

OPTIONS	LKR36	LKR48	LKR60	LKD60	LKD72	LKD84
Extra Heavy Duty Lift Capacity (Maximum lbs. @ 100 psi)	1,000	900	1,850	1,850	1,750	1,750
Pump Agitation (Horsepower)	1½"	1½"	1½"	1½"	1½"	1½"
Gallons per Hour	10,000	10,000	10,000	10,000	2 Pumps/20,000	2 Pumps/20,000
Voltage Options	230V, 460V Hard Wire	230V, 460V Hard Wire	230V, 460V Hard Wire	230V, 460V Hard Wire	230V, 460V Hard Wire	230V, 460V Hard Wire
Hertz Phase	60-1 or 3	60-1 or 3	60-1 or 3	60-1 or 3	60-1 or 3	60-1 or 3
Heating System (Electric Heat) (Range: 60-180F/16-82C)	9kW/Htr*	9kW/Htr*	9kW/Htr*	14kW/Htr*	14kW/Htr*	14kW/Htr*

* Up to two Heaters per unit available, consult factory for other heater options

Oil Separator Turbo-Boost



MODELS	DIMENSIONS	CAPACITY	FLOW RATE
OSEP-5/OSEP-5S	30" x 21 1/2" x 59 1/2"	120 gal	5 GPM

Graymills Oil Separator (OSEP) removes tramp oil from aqueous cleaning solutions. Easily connected to Graymills Turbo-Action and Liftkleen™ parts washers, as well as other manufacturers' immersion tanks.

Standard features : OSEP :

- **Extends cleaning solution life**
- **Oil separation** improves parts cleaner operation
- **Continuous oil removal** during the cleaning process; no shutdown required as with skimmers; oil is not redeposited on clean parts
- Returns virtually **oil-free** solution to parts washer
- Automatically draws off collected oil for **reuse or reclamation**
- **Sturdy construction** of heavy grade steel, requires little maintenance. Also available in stainless steel
- **Economical operation** with no moving parts or outside power source

- 1 Inlet valve controls flow at 5 GPM to assure sufficient separation time.
- 2 Oily cleaning solution enters larger separator chamber.
- 3 Tramp oil adheres to polypropylene spheres which are non-wearing and require no replacement.
- 4 Formed droplets separate and rise to the surface to form an oil layer.
- 5 Oil layer gravity feeds to external container for proper disposal, reuse or reclamation. (container not included)
- 6 Separated fluid passes under baffle to second chamber.
- 7 Virtually oil-free detergent solution flows back to parts cleaner.
- 8 Bottom drain facilitates clean-out when required.

The Turbo-Boost System draws contaminated aqueous or non-flammable solvent parts cleaning solution through a strainer basket that eliminates large particulate. Remaining contaminants are collected in a replaceable, disposable filter bag. Clean, dual-filtered detergent is pumped back to the parts washer through Turbo-Boost eductor nozzles. Entire fluid volume is continuously filtered every few minutes.

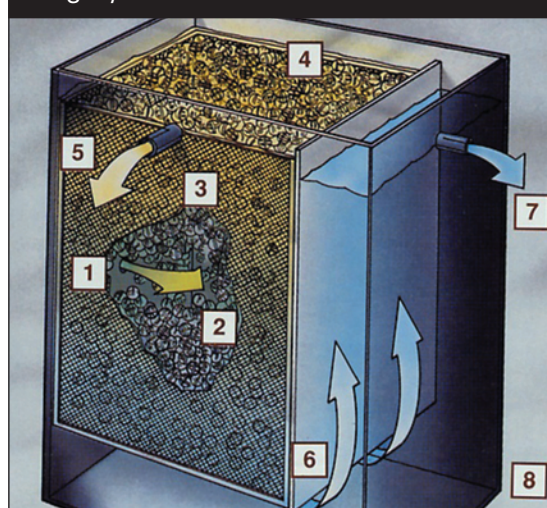
Standard features : TBF :

The Turbo-Boost System for Liftkleen™ models enhances performance in four ways:

- **Continuous filtration** keeps contaminants from re-settling on already clean parts
- **Clean, filtered fluid is returned** to parts washer through eductor venturi nozzles **increasing cleaning power four times** through additional fluid agitation
- **Increased Turbo Agitation** speeds cleaning cycle by increasing in-tank agitation four times
- Eductor action sweeps tank bottom to **eliminate sludge build-up**
- Life of the **cleaning solution** is greatly **extended**
- **Optional Service Beacon** (shown)



Highly Efficient Oil Removal



The oil separator is intended for water-based cleaning solutions and will not function with solvent-based cleaning fluids. Systems that do not have a recirculation pump require the separator to be equipped with its own pump. Consult customer service for details at 773-248-6825.

Tempest™

The Tempest™ Series of aqueous cabinet parts washers uses 600 psi of high-pressure aqueous cleaning solution power to scrub parts clean—no abrasives to damage precision machined parts.

The ultimate in operator comfort, the Tempest™ 10/20S keeps the operator's hands clean and out of cleaning solution. Operator simply slips hands into gloves and directs up to 600 psi fluid stream of heated cleaning detergent at parts.

Fast heat-up, illuminated cabinet and window-clearing blower are standard on both units. Flexible neoprene gloves, safe and convenient air-actuated on/off foot pedal switch, and ergonomic working height maximize user comfort and result in increased efficiency. Adjustable hand-held spray nozzle can be set to a wide fan or pinpoint stream to direct cleaning power where needed. 150 mesh filter traps chips and solids and continuously filters fluid.

Standard Features : both models :

- Up to **600 PSI** and **180 GPH**, **1 HP pump** delivers cleaning power directly onto parts
- **1,000 watt heater** (Tempest™ 10) / **1,500 watt heater** (Tempest™ 20S) provide heated (up to 115° F) aqueous fluid that **cleans without grit**
- **Window blower clears detergent and spray** for parts viewing for efficient, accurate cleaning
- **Hinged front** opening door allows **full access** to entire cleaning chamber
- **Variable output nozzle** can be set from a wide fan to a pinpoint stream to allow operator to adjust cleaning force as needed

Standard Features : Tempest™ 10 :

- **36" W x 23" D x 23" H** work chamber
- **10 gallon** solution reservoir; **easy-to-change internal pail** fits neatly below spray cabinet
- Available in **mild** or **stainless steel** cabinet

Optional Features : Tempest™ 10 :

- Built in **Air blow-off nozzle** for parts **drying**

Standard Features : Tempest™ 20S :

- **36" W x 38" D x 24" H** large capacity work chamber
- **Stainless steel** cabinet
- **20 gallon** rollout stainless steel reservoir makes fluid changes easy

Optional Features : Tempest™ 20S :

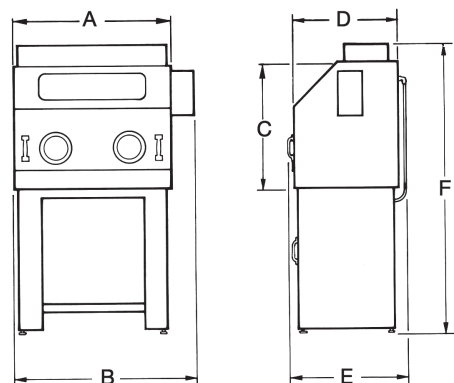
- Built in **Air blow-off nozzle** for parts **drying**
- **Oil skimmer**
- **Workload turntable**



Tempest™ spray nozzle allows you to direct the high pressure detergent stream where needed.

TEMPEST™ 10/20S

600 PSI directed stream spray cabinet cleans parts without using grit or abrasives



MODEL NO.	A	B	C	D	E	F
TEMPEST™ 10	36"	41"	22 1/2"	23"	27 1/2"	64"
TEMPEST™ 20S	36"	41"	24"	38"	42 1/2"	66"

* Height with door open is plus 7"

SPECIFICATIONS	TEMPEST™ 10	TEMPEST™ 20S
Parts Load (maximum)	500 lbs.	500 lbs.
Operating Fluid Capacity	10 gal	20 gal
Spray Pressure	600 psi	600 psi
Motor/Heater-Power	1 HP/1,000W 1 Ph, 115V, 60 Hz	1 HP/1,500W 1 Ph, 115V, 60 Hz

aqueous

Drum Mount

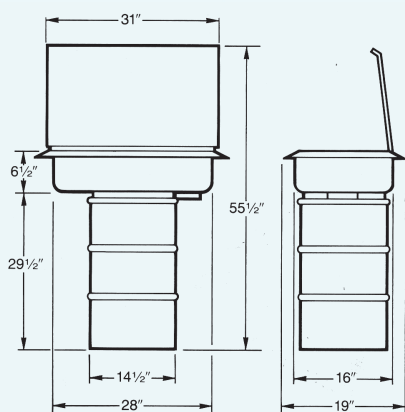
Graymills heated drum-mount aqueous model with stainless steel sink and lid offers features and durability that will keep it functioning for years to come.

With a filtered stream of 115° F (46° C) aqueous cleaning solution, the DH226 flushes away loosened soil as parts are brushed clean. With easy setup and minimal maintenance, this unit offers a long, user-friendly service life.



DH226

Heated aqueous drum mount parts washer offers on job-site parts cleaning convenience



MODEL	OPERATING FLUID CAPACITY	DRUM CAPACITY	MOTOR	HEATER
DH226-A	8-12 gal	16 gal	115V, 60Hz, 1 Ph	115V, 1500W, 15A Lighted On/Off Switch

Standard features : DH226A :

- **Thermostatically controlled heater** delivers heated solution up to 120° F (48° C)
- **300 GPH pump** and **12 gallon** fluid capacity
- **Flexible Stay-Put flush hose** for directable hands-free flushing action
- **Lift-off stainless steel sink** mounted on drum for easy job site cleaning and maintenance
- **Fusible safety link** closes lid in the event of a fire

Optional feature : DH226A :

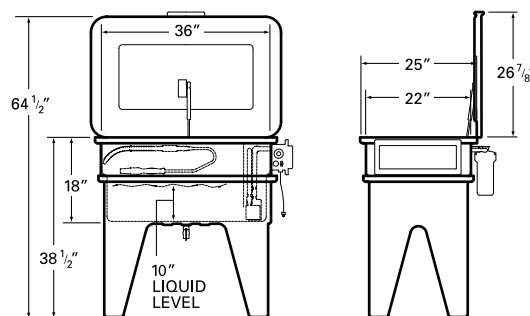
- **Drum Liners** make for easy cleanup of solution reservoir and helps prevent corrosion in drum

Job



PH822

Rugged 4-legged aqueous parts washer—sink can be used as soak tank



Standard features : PH822 :

- **Thermostatically controlled heater** delivers heated solution up to 120°F (48° C)
- **Rugged thermoplastic corrosion-resistant** construction is backed by five-year warranty
- **Flow-Thru brush, flexible Stay-Put nozzle**—brush or flush away soil with **300 GPH pump**
- **Low liquid level** shuts off heater in event liquid level drops below a setpoint
- **GFCI** shuts entire unit down in event of electrical short
- **Triple Action Filtration** is achieved by a pump pre-filter, stainless steel strainer and polypropylene cartridge.
- **10" soak depth** tank; molded bottom ridges allow soaking parts with **detergent circulation** while parts sit above sludge
- **Removable stainless steel work shelf**

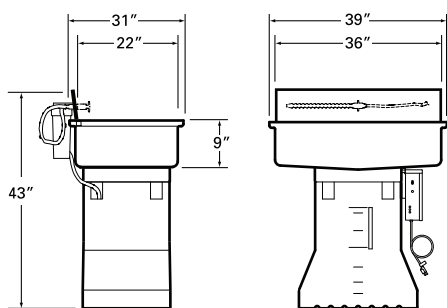
Site Washers

aqueous



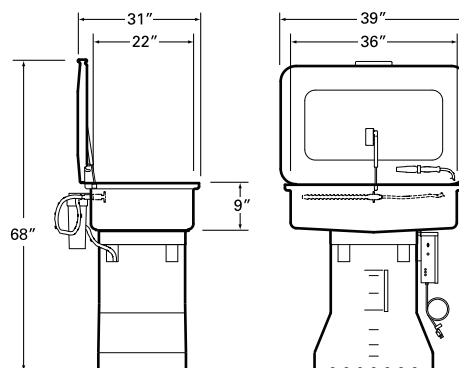
DH536R

Rugged aqueous parts washer features stainless steel backsplash (no lid)



DH436R

Rugged aqueous parts washer with lid and safety link closure



Standard features : DH436R / DH536R :

- Heated aqueous **102°** (39° C) fluid **circulates at 300 GPH**
- **Rugged thermoplastic non-corrosive** construction and is backed by five-year warranty
- **Flow-Thru brush, flexible Stay-Put nozzle** to brush or flush away soil
- **Low liquid level** shuts off heater in event liquid level drops below a setpoint
- **GFCI** shuts entire unit down in event of electrical short
- **Triple Action Filtration** is achieved by a pump pre-filter, stainless steel strainer and polypropylene cartridge
- **Removable sink and power module** for simple setup, maintenance and service
- **Indicator lights** for Power On, Heater On, Low Water Shut Down
- **Flared base** provides **increased stability** and generous 30 gallon fluid capacity for less frequent change-outs

SPECIFICATIONS	PH822	DH536R	DH436R
Overall Dimensions (L x W x H)	43" x 31" x 40" (65" H Open Lid)	39" x 31" x 43"	39" x 31" x 43" (68" H Open Lid)
Working Space (L x W x D)	31" x 22" x 17"	36" x 22" x 9"	36" x 22" x 9"
Parts Load (max.)	300 lbs.	300 lbs.	300 lbs.
Soaking Depth	10"	N/A	N/A
Operating Fluid Capacity	30 gal	20-30 gal	20-30 gal
Pump	Submersible	Submersible	Submersible
GPH	300	300	300
Horsepower	1/40	1/40	1/40
Heater	1.4 kW	1.4 kW	1.4 kW
Operating Temperature	Up to 120° F	Up to 120° F	Up to 120° F
Electric Configuration	115V, 1-Phase, 60 Hz	115V, 1-Phase, 60 Hz	115V, 1-Phase, 60 Hz
Shipping Weight	150 lbs.	150 lbs.	150 lbs.

BIOREMEDIATION

Super Biotene®
Cleaning Fluid

+

Microbial
Bio-Pack

+

Biomatic™
Parts Washer

=
**Total
Environmentally
Cleaned Parts**

Hydrocarbon-busting microbes first gained recognition when they were used to safely assist the cleanup of the Exxon Valdez spill in 1989. The microbes used in the Biomatic™ System are very similar to their now-famous cousins!

The simplest explanation of how the Biomatic™ parts washer works is: the Super Biotene® cleaning solution cleans the parts while the active microbial action cleans the fluid. This bioremediation process takes place within the parts washer solution reservoir. The microbes work by actually breaking down the hydrocarbon contaminants into their component parts—water (H₂O) and carbon dioxide (CO₂) leaving the Biotene cleaning solution free of oily, greasy contamination that can affect clean parts.

When parts are placed in the parts cleaner, the heated Super Biotene® lifts the grease and grime from the part. A Flexible Stay-Put nozzle and Flow-Thru brush aid the solution in the removal of especially stubborn oil, grease, and other contaminants.

Solution contaminated during this parts washing process flows through a triple filtration system; entering the cleaning solution reservoir first through a pre-filter/vapor barrier, then through a wire mesh stainless steel filter eliminating solid particulate as small as 50 microns. The microbes in the system go to work converting the grease and oil in the reservoir fluid into carbon dioxide and water. The remediated solution then passes through a polyester final filter before being reused in the parts washing process.

Comparable microbes have been successfully used in petrochemical and chemical plants, refineries, food processing plants, restaurants, marine barge bilges, machine shop parts washers, truck washers, wood treating plants, ground water remediation and septic tanks.

The Biomatic™ System:

- **Degrades oil, grease** and a wide variety of **hydrocarbons**
- Microbes that degrade hydrocarbons **into harmless byproducts**
- **Self-sustaining**, colony of harmless microbes
- **Solves waste disposal problems** right in the parts washer

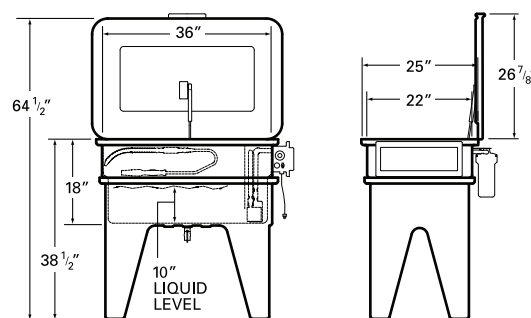
Biomatics™



BIO822

BIO822

Rugged 4-legged aqueous parts washer—sink can be used as soak tank



NEED features : BIO822 :

- Bioremediation process **turns grease/oil and organic substances into water and carbon dioxide**, eliminating most fluid changes caused by increased saturation of organic contaminants
- **In-tank aeration system** increases microbe effectiveness for faster, better bioremediation
- **3-way control valve**, Flow-Thru brush and flexible Stay-Put hose for brush and flush cleaning
- **Rugged thermoplastic** construction provides long service life; backed by five-year warranty
- **pH neutral** Biotene cleaning solution has **USDA and SCAQMD** approval (see page 31)
- **Low liquid level warning** and **Ground Fault Circuit Interrupter** shuts off power to heat in event liquid level drops below a certain point; GFCI shuts entire unit down in event of electrical short or malfunction
- **Triple Action filtration** removes non-organic impurities
- Power module with **indicator lights** for Power On, Heater On, Low Water shutoff
- Includes **BIOFL1 filter** with Microbial BioPack for initial set-up
- **10" soak depth** tank; molded bottom ridges allow soaking parts with **detergent circulation** while parts sit above sludge
- **Removable stainless steel work shelf**

Biomatrics™

These heated parts cleaners use hydrocarbon converting microbes to reduce solid waste and virtually eliminate fluid disposal. The hydro-carbon converting microbes are added to the cleaning solution and break down oils, grease and other organic impurities into water and carbon dioxide. The advantage for users is that the cleaning fluid almost never needs replacing.

The bioremediation process is greatly helped by a built-in tank solution aeration system that increases the effectiveness of the microbes. This self-sustaining system reduces your dependence on cleaning solution changes and recycling companies.

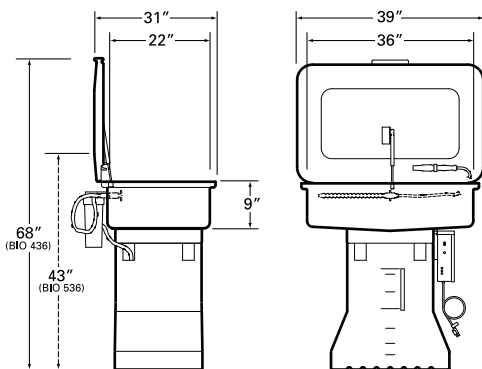
Constructed of the same thermoplastic as our DH 436/536 Series, the BIO Series uses the same cleaning processes of Flow-Thru brush or flexible Stay-Put nozzle, shares a flow control valve, plus similar three piece (base, sink and power module) construction and 300 lb. capacity. The cleaning solution is held at a constant 102° F (39° C) for optimum cleaning effectiveness and system maintenance.



bioremediation/aqueous

BIO436R/536R

Parts washers offering an environmentally friendly way to clean parts



SPECIFICATIONS

	BIO436/536
Load Capacity	300 lbs.
Overall Dimensions (L x W x H)	39" x 31" x 43" (H no Lid, 536) (68" H with Lid, 436 only)
Dimensions (L x W x H)	36" x 22" x 9" sink
GPH	300
Fluid Capacity	30 gal
Cleaning Solution Temperature	102° F

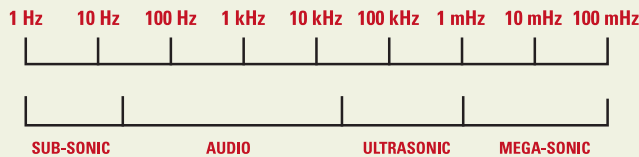
Standard features : BIO436R/536R :

- Bioremediation process **turns grease/oil and organic substances into water and carbon dioxide**, eliminating most fluid changes caused by increased saturation of organic contaminants
- **3-way control valve**, Flow-Thru brush and flexible Stay-Put hose for brush and flush cleaning
- **Rugged thermoplastic** construction provides long service life; backed by five-year warranty
- **pH neutral** Biotene cleaning solution has **USDA and SCAQMD** approval (see page 31)
- **Low liquid level warning** and **Ground Fault Circuit Interrupter** shuts off power to heat in event liquid level drops below a certain point; GFCI shuts entire unit down in event of electrical short or malfunction
- **Nine-inch deep** sink, **300 pound** capacity and **30-gallon** reservoir
- **Triple Action filtration** removes non-organic impurities
- Power module with **indicator lights** for Power On, Heater On, Low Water shutoff
- Includes **BIOFL1 filter** with Microbial BioPack for initial set-up
- **In-tank aeration system** increases microbe effectiveness for faster, better bioremediation

ULTRASONIC

What is Ultrasonics?

The science of ultrasonics is the study and application of mechanical vibrations above the range of human hearing—typically greater than 18,000 HZ.

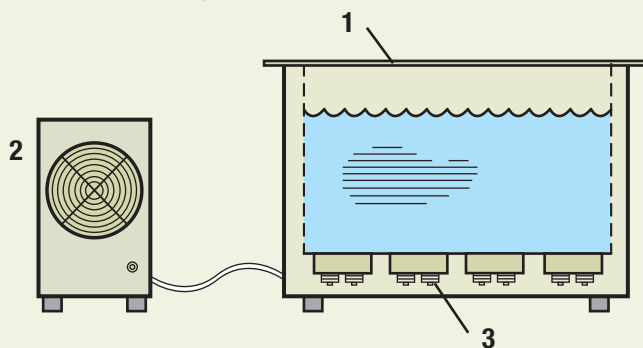


What is Ultrasonic Cleaning?

Ultrasonic cleaning uses ultrasonic energy in an immersion cleaning tank to assist in the removal of tenacious or stubborn soils from parts.

An ultrasonic system always consists of at least three main components:

- 1 A tank to hold the cleaning fluid and the dirty parts
- 2 A generator to transform the line voltage into an ultrasonic signal
- 3 Transducers to convert the ultrasonic electrical signal into mechanical energy

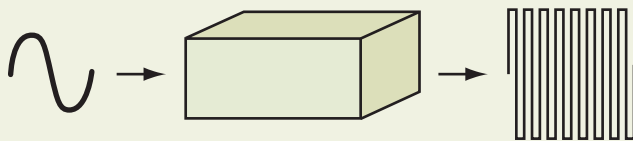


What is an Ultrasonic Generator?

The ultrasonic generator takes AC electrical energy from the power line and converts it to electrical energy alternating at the desired ultrasonic frequency. In addition, the ultrasonic generator may have complex circuitry which automatically tunes its output to the optimum operating frequency for the ultrasonic transducer.

60 CYCLES

25,000+ CYCLES

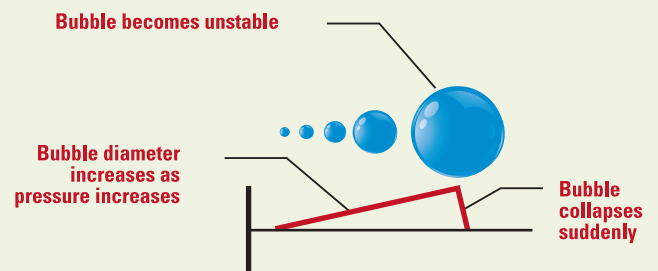


What is an Ultrasonic Transducer?

A transducer converts electrical energy at the ultrasonic frequency to mechanical motion—sound. It directs the sound energy into the cleaning tank.

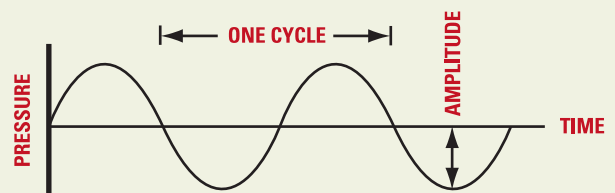
What is Cavitation and Implosion?

The phenomenon of cavitation is unique in fluids. The cavitation bubbles implode, releasing locally high energy. This implosion is the heart of the ultrasonic process.



How does Ultrasonic Cleaning Work?

An ultrasonic system works by inducing controlled cavitation in the cleaning fluid. Cavitation refers to microscopic voids or “bubbles” that form when the transducers emit sufficient ultrasonic energy into the fluid. The cavitation bubbles form relatively slowly and then collapse suddenly, releasing tremendous energy against the surfaces of objects immersed in the tank that ‘scrubs’ hard to remove soils from the parts.



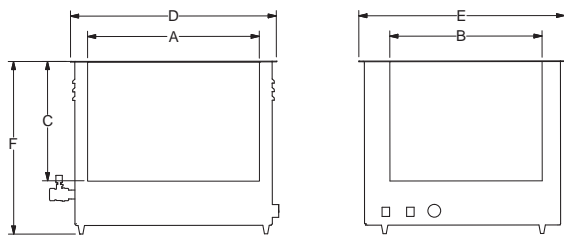
Ultrasonic Benchtop

ultrasonic/aqueous



BTU Series

*Economical but powerful
ultrasonic cleaning system*



MODEL NO.	A	B	C	D	E	F
BTU-4	12"	8"	10"	16"	18"	16 ¹ / ₄ "
BTU-7	14"	11"	11"	18"	21"	17 ¹ / ₄ "
BTU-17	20"	14"	14"	24"	24"	20 ¹ / ₄ "

MODEL	TANK CAPACITY	ULTRASONIC POWER	HEATER POWER
BTU-4	4 gal	250W/500W Peak	500W/120V
BTU-7	7 gal	500W/1000W Peak	500W/120V
BTU-17	17 gal	750W/1500W Peak	1,000W/120V

The stainless steel, corrosion-resistant tanks come in three sizes, and the thermostatically controlled tank heaters maintain a temperature optimized for cleaning. Because the ultrasonic generator is an integral part of the cabinet housing, their small footprint makes these units ideal for job site "cell" cleaning applications or places where space is critical.

Standard features :

- Choose from **Three tank sizes** for parts up to 12" W x 16" L (see chart at left)
- Bonding of **transducers** is **guaranteed for 10 years**
- All units have **1/2" drain fitting**
- **Lift-off cover with handle**
- **Adjustable thermostat** optimizes tank temperature of individual parts up to **160° F (71° C)**
- **Sound-deadening** insulation package
- **Illuminated controls** for ultrasonics and heater function

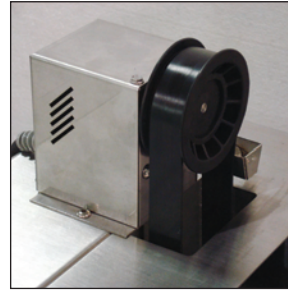
Options include :

- **Stainless steel mesh parts basket**
 - BTU-BSKT-4: 7¹/₂" X 11¹/₂" X 4"
 - BTU-BSKT-7: 10" X 13" X 6"
 - BTU-BSKT-17: 13" X 19" X 6"

SonicMax Console



Graymills SonicMax cleaning consoles use powerful ultrasonics and safe, environmentally-friendly water-based cleaning fluids to thoroughly wash the most stubborn soils from parts and assemblies.



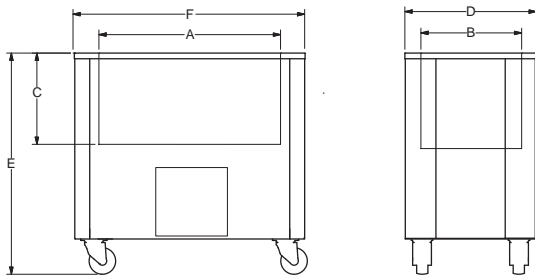
Optional Belt-Type Oil Skimmer can remove oil, effectively increasing solution life.



Recirculating pump and filter system removes insoluble particles.

CTU Series

Portable and environmentally safe ultrasonic cleaning system



MODEL NO.	A	B	C	D	E	F
CTU2012	20"	12"	8"	28"	37"	38"
CTU2814	28"	14"	12"	33"	40"	46"
CTU2825	28"	25"	15"	37"	40"	46"
CTU3516	35"	16"	15"	37"	42"	52"
CTU3523	35"	23"	17"	37"	42"	52"
CTU4718	47"	18"	19"	37"	45"	64"
CTU4723	47"	23"	20"	37"	45"	64"

MODEL	FLUID CAPACITY	ULTRASONIC POWER	HEATER POWER
CTU2012	7 gal	750 W	1500 W
CTU2814	18 gal	1500 W	3000 W
CTU2825	42 gal	3000 W	6000 W
CTU3516	33 gal	2000 W	4000 W
CTU3523	54 gal	3500 W	6000 W
CTU4718	65 gal	4000 W	6000 W
CTU4723	87 gal	5000 W	10000 W

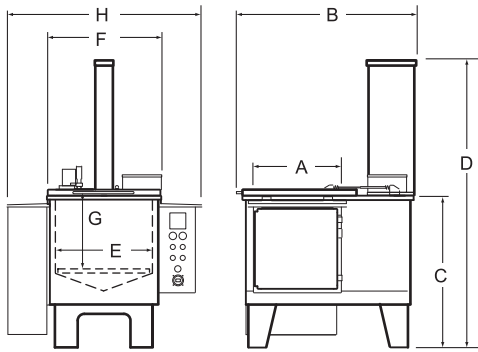
- **316 Stainless steel tank** handles large loads with ease to provide true industrial capacity
- **High watts per gallon ratio** provides cleaning power to handle even the most stubborn soils
- **Flanged tank lip** for spill control with stainless steel lift-off cover
- Overflow weir and cascading circulation system **traps debris** away from work
- Standard **Filtration Package** features 3GPM pump and 50 micron filter maintain cleanliness levels
- Thermostatic **temperature control** from ambient to 170° F (77° C)
- **Cycle timer** for ultrasonics can be set from 0-30 minutes
- Durable powder coated **support cart with casters** offers portability and ease of movement
- **Stainless steel mesh basket** included to facilitate parts handling

Sonic Liftklean™

Graymills unique "V-focused" tank design increases ultrasonic cleaning power and speed for intricate parts as well as large industrial pieces.

TUS24/36

Economical but powerful ultrasonic cleaning system



MODEL NO.	A	B	C	D	E	F	G	H
TUS24	24"	39"	34"	66"	20 1/2"	24 1/2"	12"	45"
TUS36	34"	50"	34"	75"	25 1/2"	29 1/2"	18"	50"

SPECIFICATIONS	TUS24	TUS36
Ultrasonic Power	4,000 Watts	4,000 Watts
Heater Power	6.75 kW	6.75 kW
Voltage	230V, 1 Phase	230V, 1 Phase
Standard Lift Capacity @ PSI	125 lbs @ 90	200 lbs @ 90
Oscillation Stroke Length	3"	3"
Strokes Per Minute	60-80	60-80
Immersion Space (L x W x D)	24" x 20" x 12"	34" x 25 1/2" x 18"
Overall Dimensions (L x W x D)	39" x 45" x 66"	50" x 50" x 75"
Liquid Capacity	47 Gallons	118 Gallons
Platform Dimensions	22 x 19"	32 x 34"
Air Inlet	1/4"	1/4"
Drain	2"	2"



ultrasonic/aqueous

- Bonding of transducers is **guaranteed for 10 years**
- Air operated **lift platform** handles loads with ease; Up and down agitation while submerged enhances the cleaning process
- Lift platform raises to the top of the immersion tank, for **easy access to load and unload parts**
- Adjustable, **thermostatically controlled tank heaters** maintain optimum cleaning solution temperature up to 160° F (71° C)
- **Deep "V-shaped" tank** bottom **focuses** the ultrasonic **power** on the work load
- **Digital cycle timer** controls cleaning cycle start and stop times
- **Oil skimmer** removes oil from cleaning solution
- **Corrosion-resistant** MIG welded stainless steel construction on all wetted parts is **designed for longevity**
- **Double walled** insulated tank and lid **prevents heat loss** and evaporation
- Small foot print is ideal for **on site "cell" cleaning** and can be combined with other units (rinse tanks, dryers) to complete the cleaning process

Super Sonic Lift



The Super Sonic Liftkleen™ parts washer features full immersion cleaning coupled with powerful ultrasonics to thoroughly wash the most difficult to clean parts.

- **Full PLC Control** with Touch Screen Interface provides programmable cycles for **ultrasonics**, **platform oscillation**, **soak**, **sparger**, **filtration** and **heater** functions up to 180°F (82°C)
- **Ultrasonic frequency sweep** continuously changes sound patterns to provide greater cleaning penetration while minimizing risk of damage
- **Heavy duty immersible sealed transducers** evenly distribute the ultrasonic sound waves and eliminate cleaning blind spots
- **Pneumatic lift platform** allows easy loading/unloading of parts **up to 300 pounds** and offers **agitation capabilities** for thorough parts cleaning
- **Automated lid open/close** via pneumatic cylinder allows for hands-free operation
- **Built in weir and surface sparger** system removes floating oil and debris from the top of cleaning solution so parts are not dragged through the floating contaminant at the end of the cleaning cycle
- **Oil skimmer** removes oil from weir chamber
- Filtration system **constantly filters the cleaning solution** to extend bath life for more consistent cleaning
- **Double walled, fully insulated stainless steel tank and lid** prevents heat loss, evaporation and reduces noise
- Bottom drain and valve for **easy change out** of cleaning solution

Units available without Ultrasonics under part number TS3725SL-J. The TS3725SL-J includes all of the other great features noted above for applications that don't require Ultrasonics. Consult Factory for details.

kleen™

The TUS3725SL-model comes equipped with features to achieve ultimate parts cleaning levels. It is built to withstand rugged use in applications like engine rebuilding, performance racing, maintenance and manufacturing, but gentle enough to be used in the most delicate of cleaning applications.



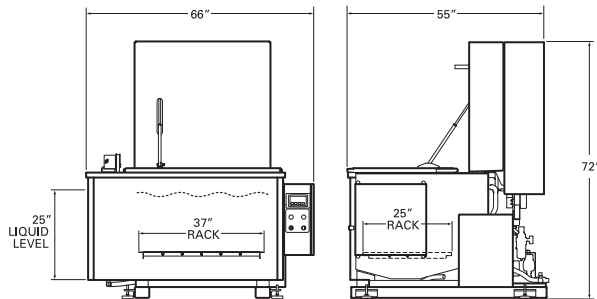
PLC controls cycle times, wash time, time for surface sparger spray to come on after the timed ultrasonic cleaning cycle and the operation of the lift platform.



Three ultrasonic generators deliver 6,000 watts of peak power (TUS3725SL only).

TUS3725SL/ TS3725SL

*Ultimate performance
parts washer*



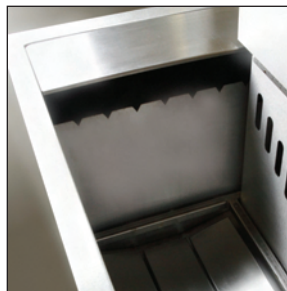
SPECIFICATIONS	TUS3725SL /TS3725SL
Immersion Space (L x W x D)	37" x 25" x 14" (max. part size)
Overall Dimensions (L x W x H)	55" x 66" x 72"
Liquid Capacity	183 Gallons
Standard Lift Capacity/PSI	300/100
Stroke Length	4"
Strokes per Minute	25-40
Air Inlet	3/8" NPT
Water Inlet	3/4"
Drain	1 1/2"
Heater Setting Range 0-180°F (Unit cannot cool below ambient temperature)	4kW/Htr 8kW/Htr (optional second heater bank)
Ultrasonic Cleaning Power (TUS3725SL only)	RMS 3,000 watts total (Three generator/transducer units @ 1,000 watts each) Peak 6,000 watts total



Heavy duty immersible drop-in sealed transducer packs.



Surface sparger system pushes floating oil and debris from top of cleaning solution into the built-in weir so parts are not dragged through the contaminant at the end of the cleaning cycle.



Built-in weir traps the oil and debris so that those contaminants are isolated from the cleaning chamber and where the standard filtration system can remove any solids while ...



... the standard Belt-Type Oil Skimmer can remove oils, effectively increasing solution life.

ultrasonic/aqueous

ACCESSORIES

General Purpose Parts Baskets



L-3 Permits flushing of small parts while keeping them organized. 6" H x 10" diameter

L-7 Hooks over edge of tank or stands on legs. 8" L x 6" W x 4" H

L-8 Expanded metal on sides and bottom. 13" L x 12" W x 5" H

5B-1 sized and bracket for use with standard five gallon pail

Roto Basket



Roto-Basket accessory for "T" Series Parts Washers effectively cleans small parts by creating a gentle, tumbling action to expose all surfaces to the cleaning solution. It is a hands-free cleaning process that reduces labor and saves time.

Stainless steel expanded metal drum/basket assembly, rotary mechanism and frame assembly. Attaches to the platform of any Graymills "T" Series Liftkleen™ and holds up to 35 lbs. of parts.

The lift mechanism in the parts washer lowers the basket into the cleaning solution. As the lift platform agitates up and down, the rotating basket turns on a 60° index for every down stroke, thoroughly cleaning the smallest and most fragile parts.

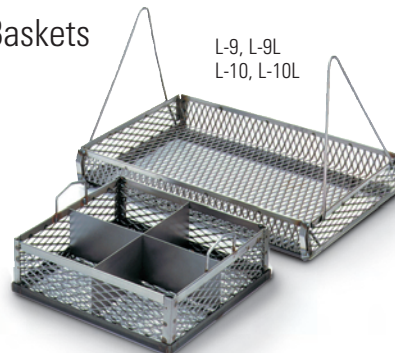
PART NUMBER	DESCRIPTION	WEIGHT	DIMENSIONS
TRB-1	Roto-Basket (includes mechanical drive)	26 lbs	20½" L x 11" H x 13" W
RB-1	Addl. Basket (without mechanical drive)	13 lbs	20½" L x 11" H x 13" W
Roto-STA	Load/Unload Station	18 lbs	18⅝" L x 15" H x 14⅜" W

- **Roto-Basket is 100% mechanically driven**—the pawl and ratchet mechanism uses the up and down motion of the lift platform to turn the drum, no electric motors or drives are needed
- **Optional Station makes Load/Unload easy**—separate from the Roto-Basket drive mechanism, the Load/Unload station allows for easy, convenient loading and unloading of baskets
- **System is a drop-in retrofit**—requires only a few minutes to install

Clean-O-Matic™ Baskets



L-22, LS-22
L-27, LS-27



L-9 Clean-O-Matic™ 900 and 902-perforated metal sides and bottom with 15 gauge frame for heavy-duty use; can be supported above liquid level for draining by special pull-out supports, 32" L x 17" W x 5" H

L-9L Same as L-9 except with sturdy lifter bar to permit use with chain hoist for heavy-duty work

L-10 Same as L-9 in larger size for Turbo-Action parts cleaners, 34" L x 21" W x 5" H

L-10L Same as L-10 with lifter bar

T-Series Liftkleen™ Baskets

Perforated metal sides, bottom and iron frame. Removable dividers accommodate a variety of parts sizes.

L-22 and **LS-22** (stainless) 22" L x 18" W x 6" H

L-27 and **LS-27** (stainless) 31¼" L x 23¼" W x 6" H

Actual basket material may differ from photo

L-Series Liftkleen™ Baskets

LKB36 and **LKBSS36** (stainless) Parts Basket for LKR36 32" L x 19" W x 15" H

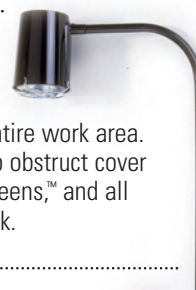
LKB48 and **LKBSS48** (stainless) Parts Basket for LKR48 44" L x 31" W x 15" H

LKB60 and **LKBSS60** (stainless) Parts Basket for LKR60, LKD60 55" L x 31" W x 15" H

LKB72 and **LKBSS72** (stainless) Parts Basket for LKD72 67" L x 37" W x 15" H

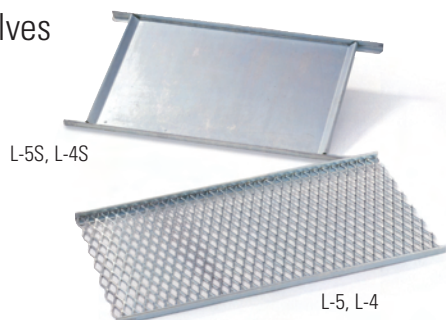
LKB84 and **LKBSS84** (stainless) Parts Basket for LKB84 80" L x 32" W x 15" H

Work Light



Constructed with 360° rotation and a 28" gooseneck to allow for additional lighting of entire work area. Solid support so light cannot be pulled down to obstruct cover closing in case of fire. For HK-150, all Handi-Kleens™, and all Clean-O-Matics™ Mounts to back or side of tank.

Work Shelves



Shelves shown here are supplied as standard with the purchase of one of the listed parts cleaners. Ideal for additional work space or replacement of worn shelves.

L-4 Identical to L-5 but sized for use with Clean-O-Matic™ Model 800

L-4S Identical to L-5S but sized for use with Clean-O-Matic™ Model 800

L-5 Perforated metal Flo-Thru shelf constructed with solid metal frame; for use with Clean-O-Matic™ Models 300 and 500

L-5S 16 gauge steel shelf for use with Clean-O-Matic™ Models 300 and 500

Actual shelf material may differ from photo

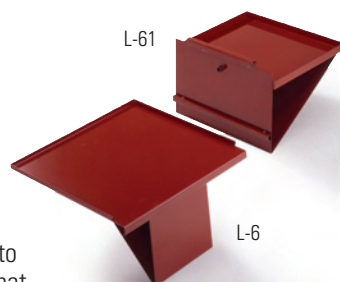
Sludge Trays

Removable soak trays keep soaking parts off the bottom of the tank yet capture any sludge to make removal easier.

432-36376 - For use with 300 and 500 Series (2 required) or 800 Series (3 required)

432-36664 - For use with 900 Series (2 required)

Drain Shelves



Accessory shelves designed to provide a working platform that allows cleaned parts to drain while directing run-off into tank. Shelves mount externally to maintain critical workspace.

L-6 16 gauge steel shelf attaches to side of Clean-O-Matic™ Models 300, 500 and 800. 16" L x 18" W

L-61 16 gauge steel shelf mounts to side of Flo-Bac™, HK-150, and all Handi-Kleen™ models. 15" L x 18" W

Brushes



3B-G Standard brush with 2 1/2" polypropylene bristles

5D Double brush, with 1 1/2" and 2 1/2" nylon bristles

6A Flow-Thru brush flushes part as it cleans. Solvent flows through core of handle; 2" Connecting hose, 2 1/2" nylon bristles, and a rubber connector that slips over nozzle of flexible metal hose of parts cleaner

7-A Flat Angular Flow-Thru cleaning brush (polyester bristles) can attach to pump nozzle with rubber hose (included)

8-A Round Angular handle cleaning brush (polyester bristles) can attach to pump nozzle with rubber hose (included)

Filters

Filtration systems are available for all Liftkleen™ Models. Filters for T-series models available in 10, 50 and 100 micron. For L-series models in 150 and 590 micron. See GM price list.

For Use With T-Series Liftkleens™

C-31626 Mild Steel

C-31626-41 Brass

C-31626-88 Stainless Steel

For Use With L-Series Liftkleens™

LKF/LKFT100 – Single Canister System

LKF/LKFT200 – Dual Canister System



Replacement Filter Bags

Replacement filter bags for Drum Mount Parts Cleaners.

C-27360 washable nylon mesh filter bag extends solvent life, 12 per package



Drum Liners

Poly bag liners simplify cleanup and disposal of solid waste. Available in dozens.

C-27452 Fits 16 gallon drums

C-27484 Fits 30 gallon drums

C-27835 Fits Tempest™ 10



CLEANING FLUIDS

Graymills fluids are specially formulated to provide optimum cleaning in our parts washers. They are intended to be used for a variety of cleaning needs, and specific formulations are available for cleaning ferrous and non-ferrous metals, rubber and elastomers, parts to be painted, and for removal of many varieties of grease, motor oil, cutting fluids, carbon deposits, inks and gummy residues.

General Purpose Solvents



Super Agitene™

Ideal for cleaning of metal, plastics and painted surfaces. Grease, motor oil, cutting oil and water soluble oils are removed with ease. Gummy deposits unaffected by ordinary mineral spirits are readily softened or removed. Contains Hand Ease® a cosmetic-grade lanolin formulation, which replenishes some of the skin's natural oils removed by solvents. It helps to reduce the chance of irritation and chapping, leaves a protective coating on parts to help retard corrosion, and is a low-odor solvent with a 105° F flashpoint (40°C). It should not be used on parts going into a plating or painting process. (See regular Agitene.™) Available in 5 gallon pails and 50 gallon drums.

Regular Agitene™

Same high quality cleaning action and flash point as Super Agitene,™ but leaves no film, thus making it ideal for cleaning parts to be painted. It will not attack varnish, allowing it to be used on varnish-insulated electrical components. Available in 5 gallon pails and 50 gallon drums.

Super Agitene™ 141 and Regular Agitene™ 141

- Contains **no ingredients** listed as **hazardous** by the EPA's RCRA
- Meets OTC VOC regulations

Has the same attributes as low-flash counterparts but a higher flash point of 141° F (60° C), which meets local regulations where use of High Flash Point Solvent is required. Available in 5 gallon pails and 50 gallon drums.

Solvent Filtration



Solvent Saver Filters

Extend the life of solvent cleaning solutions by filtering out the oil and grease that accumulates in the solvent cleaning solution.

- **Fits all** drum-mount and free-standing solvent parts washers
- **Easy installation** rubber hose with **universal adapter** fits over end of flexible Stay-Put nozzle
- Replace on an **"as-needed"** basis
- **Maintains cleaning solution** at a consistent level of performance

Solvent Saver I

Oil and Grease Removal (Packed two/carton)

SS-11 7" diameter x 11" long—includes one connecting hose

SS-18 7" diameter x 18" long—includes one connecting hose

Solvent Saver II

Oil and Grease Plus Particulate Removal (Packed two/carton)

In addition to special absorbent materials, it contains a 5 micron filter cartridge that filters particulate from the solvent prior to oil and grease absorbing stage.

SSC-11 7" diameter x 11" long—includes one connecting hose

SSC-18 7" diameter x 18" long—includes one connecting hose

For Solvent Saver I and II

Solvent Saver Hanging Bracket-Stainless Steel bracket holds filter out of way on inside of parts washer.

SS-BRAC 12" long x 9" deep X 8" high

Biodegradable Alkaline Aqueous Cleaners

Graymills versatile line of aqueous cleaners can be used for removing virtually any organic or inorganic soil, including greases, oils, soft carbons, epoxies, hard water residue, corrosion, oxides, paints, plating salts, rust and smut. Aquatene water-based cleaners work most effectively when heated and require only a water rinse.

Aquatene 330

A general purpose concentrated detergent in liquid form. Works best when heated up to 140° F (60° C). Ideal for use in free-standing manual systems and immersion type part washers. Removes soft carbon deposits, light coatings, grease, gummy residue, oils, latex paint, light varnishes, rust preventatives. A five gallon pail makes 25-50 gallons; a 55 gallon drum makes 275-500 gallons, depending on concentration.

Super Aquatene 360

A general purpose concentrated cleaner in liquid form can be used up to 180° F for faster cleaning. Ideal for use in free-standing manual systems and immersion type part washers. Removes all items listed for GM 330 but also effectively cuts buffing and lapping compounds, hard to remove coatings, water-based inks, oxidized oils and heavy or burned-on varnishes. A five gallon pail makes 25-50 gallons of cleaner; a 55 gallon drum makes 275-500 gallons of cleaner, depending on concentration.

Super Aquatene 390

A heavy-duty, low-foam concentrate perfect for use in spray cabinet washers. Ideal for steel, cast iron, and other ferrous metals (not for use on non-ferrous metals). Removes most greases, light oils, water soluble inks, hardened composites and loose metal chips. Contains a rust inhibitor. A five gallon pail makes 30-40 gallons, a 55-gallon drum makes 300-450 gallons, depending on concentration. Heat to maximum of 150° F.

Aquatene 571

Specially formulated for cleaning aluminum and non-ferrous metals. The powdered compound mixes @ 3 to 8 ounces per gallon of water. Available in 25 lb cartons or 100 lb. Fiber drums. Use heated to 180° F (82° C).



Biotene, Super Biotene, and Turbo Biotene

Ph neutral, aqueous based solutions blended with specific emulsifiers and surfactants for use with our Bioremediation parts washers to help the microbial process work faster and more effectively while still delivering excellent cleaning performance.

Biotene 440 (Concentrate) is a general purpose cleaner safe for use in most applications; it delivers good cleaning performance at an attractive price point.

Super Biotene 550 (Concentrate) or **Super Biotene 660** (Pre-Mixed) is also a general purpose cleaner that provides a higher level of cleaning ability to address a wider range of applications

Turbo Biotene 880 (Concentrate) is our most aggressive formulation capable of cleaning and remediating the toughest jobs.

Concentrates mix with regular tap water at a ratio of 19:1 to make 20 gallons of cleaning solutions whereas our pre-blended formulas are ready to use right from the pail.

Aqueous Solution Treatment System

System enables users to treat water-based aqueous solutions for sewer disposal.

Oil absorbent pads pick up floating oil. 19" by 15" oil pads absorb up to 25 times their own weight in oil.

Neutralizer powder to treat used solution to meet Federal and local disposal regulations. Neutralizer powder changes color of solution when sufficient powder has been added. Pads and powder can be purchased separately or in kit form.

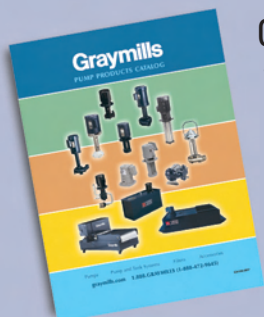
Filter out any remaining solids prior to disposal.

NOTE: For first-time use, laboratory-analyzed sample of neutralized solution should be submitted to your local authority to assure that your processed fluid waste meets their standards.



Cleaning Fluid Reference Chart

Cleaning Problem	Super Agitene™	Regular Agitene™	Aquatene 330	Super Aquatene 360	Super Aquatene 390	Aquatene 571	Biotenes®
Buffing and Lapping	*	*		*	*		
Carbon Deposits, Soft			*	*	*	*	*
Coatings, Light	*	*	*	*	*	*	*
Grease	*	*	*	*	*	*	*
Gummy Residues	*	*	*	*	*	*	*
Inks, water based				*			
Oils	*	*	*	*	*	*	*
Oils, oxidized				*	*	*	
Paint, Latex			*	*	*		*
Paint, Oil based	*	*			*		
Rust Preventatives	*	*	*	*	*	*	*
Varnishes, Light	*	*	*	*	*	*	*
Varnishes, Heavy				*	*	*	
Varnishes, Burned-On				*	*	*	
Waxes			*	*	*	*	*
For Use in:	Super Agitene™	Regular Agitene™	Aquatene 330	Super Aquatene 360	Super Aquatene 390	Aquatene 571	Biotenes®
Clean-O-Matic™	*	*					
Handi-Kleen™ (cold)	*	*					
DH/PH (hot)			*	*		*	
Turbo Parts Cleaner (cold)	*	*					
Turbo Parts Cleaner (hot)			*	*	*	*	
Liftekleen™ (cold)	*	*					
Liftekleen™ (hot)			*	*	*	*	
Spray Washing Cabinet					*	*	
Tempest™					*	*	
Drum Mount (cold)	*	*					
Drum Mount (hot)			*	*		*	
Ultrasonic			*	*	*		
Biomatic™							*



Graymills manufactures pumps

for most industrial applications in the global marketplace specializing in machine tools. Visit the website or call customer service for literature on Graymills centrifugal, gear, diaphragm, high pressure multi-stage pumps and tank systems for OEM and MRO applications.



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