Associated Design and Manufacturing Company

8245-K Backlick Road Lorton, VA 22079 (571) 642-0222 FAX (571) 642-0213

Superior Products for Laboratory Analysis of Hazardous Waste by U.S. EPA Methods



TCLP-We Meet Your Equipment Needs from Agitators to ZHEs

•	TCLP	(Method 1311)	•	Purge & Trap	(Method 5030)
•	Burn Rate Mold	(Method 1030)	•	Soil Samplers	(Method 5021 & 5035)
•	Corrosivity Coupons	(Method 1110)	•	SPLP	(Method 1312)
•	EP Toxicity	(Method 1310)	•	Water Sampling	
•	Liquid Release	(Method 9096)			

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INTRODUCTION

Since its founding in 1965, Associated Design has provided custom engineering, design and manufacturing services to industrial and governmental agencies. Our engineering and production staff has extensive experience in the design and building of environmental, electro-mechanical, optical, pneumatic and automatic equipment. Our manufacturing facility utilizes computer numerical control (CNC) equipment to machine stainless steel, aluminum, plastic, glass or various other materials for your special equipment needs.

In environmental laboratories throughout the world, customers look to Associated Design and Manufacturing Company for innovative and reliable products. Our firm continues to be the leading supplier of U.S. EPA-approved equipment to perform the Toxicity Characteristic Leaching Procedure (TCLP) and was the original designer of the Zero Headspace Extractor (ZHE).

Associated Design has considerable expertise in the development, manufacture and marketing of hazardous waste sampling and testing equipment for the scientific community. Known for their superior quality and durability, our products are produced under strict adherence to U.S. EPA standards for evaluating hazardous components found in solid and liquid wastes. For over a decade Associated Design has worked with the U.S. EPA and major environmental laboratories, giving us significant experience in developing new products recognized for their practicality, innovation and reliability.

In environmental analysis or precision manufacturing, quality is the best measurement of total performance. Associated Design has been nominated as the "Small Business Subcontractor Of The Year" by Westinghouse and was the recipient of the Small Business Administration's "Award of Excellence". As part of our commitment to quality products and customer service, our professional staff always welcomes the opportunity to answer any question concerning your use of our products or to discuss a new or difficult application.

We are ready to assist you in any way we can. Put us to work for you in your laboratory.

Associated Design & Manufacturing Company

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TCLP- WE MEET YOUR EQUIPMENT & SUPPLY NEEDS FROM AGITATORS TO ZHE'S

NEW FROM ASSOCIATED DESIGN

- 1-800-837-TCLP (8257) NEW TOLL FREE NUMBER
- **CORPORATE ACCOUNT PROGRAM -**Provides our customers with competitive pricing
- CORROSIVITY COUPONS P/N CC-7001-0001 and other related equipment

ADAM ROTARY AGITATOR ACCESSORIES

- 3740-LL-The PTFE Lid Liner prevents leakage from containers and bottles (10/Pkg)
- 3740-WGB-Wide Mouth Safety Coated Glass Borosilicate Bottles
- 3740-AC-Adapter Collars to hold 125, 250 mL and 1 liter bottles
- SEPARATORY FUNNEL BOTTLES for ADAM Rotary Agitators w/self venting caps
- **3740-RPM**-RPM Meter Kit for ADAM rotary agitators

3745-ZERO HEADSPACE EXTRACTOR ACCESSORIES

- 3745-RZHE-Reconditioning program for the ADAM ZHE
- **3745-ILF-**The in-line filter attaches to the waste side of the ADAM 3745-ZHE and is designed to capture the debris in the event that the primary filter of the ZHE ruptures 3745-ILF can be modified to fit competitors ZHE models.
- TEDLAR BAGS-NEW ECONOMY MODEL

MIXED WASTE

- **3740-2-SBRE** -Two-place rotary agitator for mixed waste/radioactive compounds. The agitator holds both 125 and 250 mL HDPE containers and, with a special adapter can accommodate 40 mL VOA vials
- 3740-SSHWF-Hazardous Waste Filtration Unit, 130 mL capacity, designed specifically for mixed waste
- 3745-SZHE-Zero Headspace Extractor, 100 mL capacity, designed specifically for mixed waste

SAMPLING DEVICES

- **2001-SS-**The Sludge Sampler allows you to take a 1 liter sample of sludge or waste fluid in a self-contained 1 liter glass bottle at various depths. No re-pouring to another container is necessary
- MODEL-3780-SS/5 & MODEL-3780-SS/10-5 to 10 gram adjustable soil samplers for method 5030 rapid 5 to 10 gram sampling to be used with 20 and 40 mL VOA bottles in which preservatives can be added.

POWDER TRAIN MOLD

MOLD-173-Powder Train Mold for IGNITABILITY OF SOLIDS-METHOD 1030

EOUIPMENT AND DESIGN FABRICATION SERVICES

For many years, Associated Design has played a major role in instrument design and methods development for **US EPA** toxicity testing. Let us tackle your new ideas or special equipment needs with our design and fabrication expertise. We have worked with many environmental scientists to develop and produce the special products, equipment and accessories needed for a number of laboratory projects.

Put us to work for you. We are ready to assist you in any way we can.

Specialists in Equipment for TCLP and EP Toxicity
Testing of Solid Hazardous Waste

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CONTENTS

PRODUCTS	PAGE
ZERO HEADSPACE EXTRACTOR (Methods 1311 and 1312)	
Model 3745-ZHE	1
3745-RZHE Reconditioning Program	2
3745-ILF In-Line Filter	3
ROTARY AGITATORS (Methods 1310,1311 and 1312)	
Model 3740-2-BRE.	4
Model 3740-4-BRE.	4
Model 3740-6-BRE.	4
Model 3740-12-BREII	5
Model 3740-24-BRE	6
Model 3740-48-BRE	6
Rotary Specifications	7
Model 3740-Bottles	8
HAZARDOUS WASTE FILTRATION UNITS (Methods 1310,1311 and 1312)	
Model 3750-SSHWF	9
Model 3750-SHWF	9
Model 3750-LHWF	9
GAS-TIGHT SYRINGE (Methods 1311 and 1312)	-
Model 3790-GTS	10
Model 3775-GTS	11
5 & 10-GRAM SOIL SAMPLER (Method 5030 and CLP)	11
Model 3780-SS/5	12
Model 3780-SS/10	12
PURGE & TRAP ADAPTERS FOR 40ml VIALS (Method 5030 and CLP)	12
Model 3780-PT/.25 and 3780-PT/.50	13
	13
SLUDGE SAMPLER	1.4
Model 2001-SS	14
2001-SS Specifications	15
BURN RATE MOLD (Method 1030)	
Model Mold-173	16
CORROSIVITY COUPONS (Method 1110)	
Model 7001-0001	17
LIQUID RELEASE TEST DEVICE (Method 9096)	
Model 3760-LRT	18
ACCESSORIES	
ZHE ACCESSORIES	
Pump, Gas-Tight Syringes, Glass Fiber Filters Stainless Steel Filters,	
Tedlar Bags, O-Rings and Screens.	19
AGITATOR ACCESSORIES	
Bottles, Collars, Wire Cages, Timers, Safety Shields and Spill Trays	19
FILTRATION UNIT ACCESSORIES	
Glass Fiber Filters, Stainless Steel Filters-Rings, Screens and Air Supply Adapter	20
SYRINGE ACCESSORIES	
Bodies, Luer-Locks and O-Rings	20
LIQUID RELEASE TEST ACCESSORIES	
Test Cell, Blotter Filter, Screens, Grids and O-Rings	21
OTHER ENVIRONMENTAL EQUIPMENT AND SERVICES	∠ .1
EQUIPMENT DESIGN, TRAINING TAPES AND	
FABRICATION SERVICES	22
ENVIRONMENTAL HOTLINES TERMS OF SALE AND CENERAL INFORMATION	23

MODEL 3745-ZHE Zero-Head Space Extractor



Model #3745-ZHE
NEW AND IMPROVED SLO/FLO® DESIGN

THE MODEL 3745-ZHE ZERO HEADSPACE EXTRACTOR

THE MODEL 3745-ZHE Zero Headspace Extractor is an extractor vessel used for separating solid samples and their volatile extracts during the Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312. The 3745-ZHE permits the sealed extraction and pressure filtration of volatile pollutants without losses due to evaporation.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The 3745-ZHE is a pressure actuated piston device with all wetted surfaces made from Type 316 stainless steel. It uses either a standard 90mm diameter glass fiber filter (0.7 micron) or alternatively, a 90mm diameter stainless steel filter (0.5 micron) for oily and difficult-to-filter waste. The ZHE utilizes standard Viton® or Teflon® O-rings and has a nominal capacity of 550 mL.

DESIGN FEATURES

The new SLO/FLO® internal design of the 3745-ZHE limits the maximum piston velocity in the unit. By restricting the internal piston speed, you can now perform TCLP or SPLP without concern about filter rupture, sample shock or "shooting the piston". Assembly of the unit with its symmetrical body, free-floating piston and removable end flanges, is quick and easy. The bottom flange is fitted with a quick-disconnect air fitting, a pressure relief valve and a 0-60 psi pressure gauge. The top flange contains an inlet/outlet valve and "Speed Nut" connector for introduction of the extraction buffer and discharge of the leachate. The filter is sealed and secured between the cylinder body and the top flange. The 3745-ZHE comes supplied with an agitator collar and an individual set-up chair, it is compatible with all Associated Design Rotary Agitators.

BUILT FOR DURABILITY AND CONVENIENCE

The 3745-ZHE is a stable instrument built to exceed the 50-psi level needed for phase

separation. It can be cooled to 4 degrees C, as is required for storage of volatile waste samples

NO TOOLS REQUIRED

When used in conjunction with the Associated Design Rotary Agitators and Hazardous Waste Filtration Units, no tools are needed to perform the complete TCLP extraction.

PROVEN AND APPROVED

The Associated Design Zero Headspace Extractor was designed and developed in 1984 and has been used by major laboratories across the country since 1986 and is an U.S. EPA-approved TCLP device.

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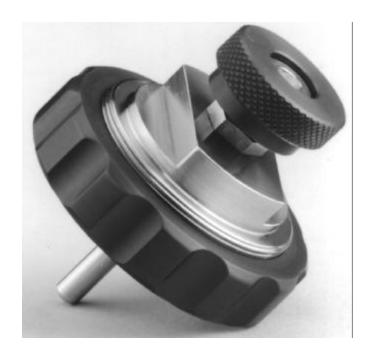
Announces the ADAM ZHE Reconditioning Program. We Restore Your ADAM ZHE To A New Condition. We Recognize Your Business Needs And We Will Guarantee A Turn Around Time To Suit Your Needs. We Pressure Test All Units At 50 PSI for 12 Hours Prior To Shipping.

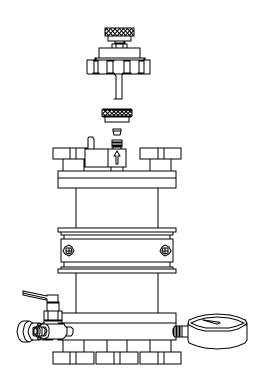
Associated Design will remove all scratches and most dings, polish the entire unit and **SUPER FINISH** the I.D. to a mirror finish, replace all O-rings and knobs, if needed. Gauges, screens and valves are an additional charge, if needed

For more information call Associated Design & Manufacturing Company at (571) 642-0222 Fax (571) 642-0213 and ask to speak with Pam.

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IN-LINE FILTER MODEL 3745-ILF



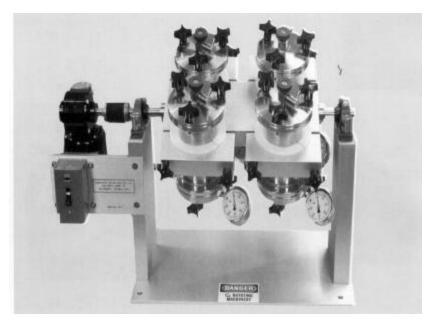


Model 3745-ILF

The In-Line Filter Model 3745-ILF attaches to the ADAM Zero-Headspace Extractor Part Number 3745-ZHE and captures debris in the event that the primary filter of the ZHE ruptures. Model 3745-ILF comes with a replaceable 47mm – diameter 0.7 micron glass fiber filter, a removable support screen and two Viton® O-rings, The waste side employ's a ½ Swagelok® with a Teflon® ferrule. All other wetted parts are made from type 316 stainless steel.

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MODEL 3740-BRE ROTARY AGITATOR



Model #3740-4BRE

THE MODEL 3740-2-BRE, 3740-4BRE AND 3740-6-BRE ROTARY AGITATORS

The Associated Design Model 3740-2-BRE, 3740-4-BRE and 3740-6-BRE Rotary Agitators are sample agitation devices developed for use during the Extraction Procedure, toxicity (EP-TOX) U.S. EPA Method 1310, Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Precipitation Leaching Synthetic Procedure (SPLP) U.S. EPA Method 1312. Rotary Agitation of solid waste samples to simulate leaching effects in the environment is required for TCLP and SPLP methods and in general use for EP-TOX.

COMPLIES WITH U.S. EPA SPECIFICATIONS

All three Rotary Agitators are designed to rotate up to 2, 4 or 6 extraction vessels in an end-over-end fashion at 30RPM ±2. They easily accommodate glass, Teflon® or plastic 2-liter bottles as well as Zero Headspace Extractors. These agitators can be fabricated upon request to hold

separatory funnels or other special containers as needed.

EASE OF OPERATION

The 3740-2-BRE, 3740-4-BRE and 3740-6-BRE Rotary Agitators use Associated Design's compact motor starter. Proven reliable on hundreds of units, it utilizes a simple run/stop toggle switch and contains standard thermal overload protection. Should the rack accidentally be stalled by other equipment inhibiting its motion, the 3740-BRE will stop before any damage to the equipment occurs .

BUILT FOR DURABILITY AND PERFORMANCE

The 3740-2-BRE, 3740-4-BRE and 3740-6-BRE Rotary Agitators are built to comply with U.S. EPA requirements. These dual-row units are a fully machined rack design that is powered by an oversized right-angle gear motor. Smooth and quiet in operation, they are rated for continuous duty and will give years of trouble-free service.

RAPID MANUAL PH ADJUSTMENT

To monitor the pH of the extraction buffer as required during EP-tox, simply stop the unit and jog the rack into the desired position with the run/stop toggle switch. After the pH is checked or adjusted, the rotary agitator can be re-started to continue the run.

OPTIONS

The 3740-2-BRE, 3740-4-BRE and 3740-6-BRE can be ordered with a 0-30 hour timer for unattended agitator operation, a drip pan for containing spills, a hinged see-through safety shield and a variable speed drive motor (2-45 RPM).

PROVEN AND APPROVED

The Associated Design Rotary Agitators have been used by major laboratories across the country since **1983** and are U.S. EPA-approved agitation devices

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page 4

MODEL 3740-BRE ROTARY AGITATOR



Model 3740-12-BREII

THE MODEL 3740-12-BREII ROTARY AGITATOR

The Associated Design Model 3740-12-BREII Rotary Agitator is sample agitation device developed for use during the Extraction Procedure, Toxicity (EP-TOX) U.S. EPA Method 1310, Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312. Rotary agitation of solid waste samples to simulate leaching effects in the environment is required for TCLP and SPLP methods and in general use for EP-TOX.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The Rotary Agitator is designed to rotate up to 12 extraction vessels in an end-overend fashion at 30RPM.±2 They easily accommodate glass, Teflon® or plastic 2-liter bottles as well as Zero Headspace Extractors. The agitator can be fabricated upon request to hold separatory funnels or other special containers as needed

EASE OF OPERATION

The 3740-12-BREII Rotary Agitator use Associated Design's compact motor starter. Proven reliable on hundreds of units, it utilizes a simple run/stop toggle switch and contains standard thermal overload protection. Should the rack accidentally be stalled by other equipment inhibiting its motion, the 3740-BRE will stop before any damage to the equipment occurs.

BUILT FOR DURABILITY AND PERFORMANCE

The 3740-12-BREII Rotary Agitator is built to comply with U.S. EPA requirements. These dual-row units are a fully machined rack design that is powered by an over-sized right-angle gear motor. Smooth and quiet in operation, it is rated for continuous duty and will give years of trouble -free service.

RAPID MANUAL pH ADJUSTMENT

To monitor the pH of the extraction buffer as required during EP-TOX, simply stop the unit and jog the rack into the desired position with the run/stop toggle switch. After the pH is checked or adjusted, the rotary agitator can be re-started to continue the run.

OPTIONS

The 3740-12-BREII can be ordered with a 0-30 hour timer for unattended agitator operation, a drip pan for containing spills, a hinged see-through safety shield and a variable speed drive motor (2-45 RPM).

PROVEN AND APPROVED

The Associated Design Rotary Agitators have been used by major laboratories across the country since **1983** and are U.S. EPA-approved agitation devices.

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MODEL 3740-BRE ROTARY AGITATOR





Model #3740-24-BRE

Model #3740-48-BRE

THE MODEL 3740-24-BRE AND 3740-48-BRE ROTARY AGITATORS

The Associated Design Model 3740-24-BRE and 3740-48-BRE Rotary Agitators are sample agitation devices developed for use during the Extraction Procedure, Toxicity (EP-tox) U.S. EPA Method 1310, Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312. Rotary agitation of solid waste samples to simulate leaching effects in the environment is required for TCLP and SPLP methods and in general use for EP-TOX.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The high-capacity rotary agitators are designed to rotate up to 24 or 48 extraction vessels in an end-over-end fashion at 30 RPM ±2 They easily accommodate glass, Teflon® or plastic 2-liter bottles as well as Zero Headspace Extractors. These agitators can be fabricated upon request to hold seperatory funnels, a larger number of samples or other special containers as needed.

CONVENIENT PANEL CONTROL

The 3740-24-BRE and 3740-48-BRE use a logic-governed control system that makes these units the easiest to use on the market today. Mounted on the agitator are push-button controls to handle run, stop, manual and emergency functions. In the event of a power failure or activation of the emergency stop button, these units immediately default to the stop mode thus preventing undesirable automatic restarts. An independent brake holds the rack in place while allowing you to easily position it to the most convenient place for loading, unloading or pH adjustment.

BUILT FOR DURABILITY AND PERFORMANCE

The 3740-24-BRE and 3740-48-BRE Rotary Agitators are built to comply with U.S. EPA requirements. These dual row units are of a fully machined double rack design mounted on a wheeled cart for ease of movement or storage. They are powered by an over-sized parallel shaft gear motor (3740-48-BRE supplied with two gear motors) with brake. Smooth and quiet in operation, they are rated for continuous duty and will give years of trouble-free service.

RAPID MANUAL pH ADJUSTMENT

To monitor the pH of the extraction buffer as required during EP-tox, simply stop the agitator and release the brake to manually move the rack into the desired position. After the pH is checked or adjusted, the rotary agitator can be restarted to continue the run.

OPTIONS

The 3740-24-BRE may be ordered with an optional see-through safety shield, a drip pan for containing spills and a variable speed drive motor (2-45 RPM). The 3740-48-BRE comes equipped with a see-through safety shield. The 3740-48-BRE may be ordered with a drip pan for containing spills and variable-speed drive motors (2-45 RPM).

PROVEN AND APPROVED

The Associated Design Rotary Agitators have been used by major laboratories across the country since **1983** and are U.S. EPA -approved agitation devices.

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ROTARY SPECIFICATIONS

Model #	No. of	Clamp	Speed	Foot	Height	Power	Fuse	Weight
	Clamps	Size		Print	Required	Req.	Size	
3740-2-	2	4.78 in	30 RPM	20.4 in	22 in	110 VAC	1 amp	36 lbs
BRE		Dia	±2	x 12 in		60 HZ	3ag slo-	
		(2.2 L)					blow	
3740-4-	4	4.78 in	30 RPM	27.9 in	22 in	110 VAC	1 amp	63 lbs
BRE		Dia	±2	x 12 in		60 HZ	3ag slo-	
		(2.2 L)					blow	
3740-6-	6	4.78 in	30 RPM	35.50 in	22 in	110 VAC	1 amp	70 lbs
BRE		Dia	±2	x 12 in		60 HZ	3ag slo-	
		(2.2 L)					blow	
3740-	12	4.78 in	30 RPM	57.50 in	22 in	110 VAC	1-1/4	105 lbs
12-		Dia	±2	x 12 in		60 HZ	amp	
BREII		(2.2 L)					3ag slo-	
							blow	
3740-	24	4.78 in	30 RPM	67.00 in	45 in	110 VAC	3 amp	590 lbs
24-BRE		(2.2 L)	±2	x 31 in		60 HZ	3ag slo-	
							blow	
3740-	48	4.78 in	30 RPM	67.00 in	67.25 in	110 VAC	7 amp	1,108
48-BRE		(2.2 L)	±2	x 31 in		60 HZ	3ag slo-	lbs
							blow	

Clamp design fits Associated Design's 2.2 liter glass bottles, 2.2 liter polyethylene bottles and Zero-Head Space Extractor Model # 3745-ZHE. Different sizes clamps available upon request.

3740-24-BRE and 3740-48-BRE are mounted on casters, and come standard with a 0-30 hr built-in Elapse Timer. The 3740-48-BRE comes standard with Safety Shields and automatic cut-off safety switch.

Available Options

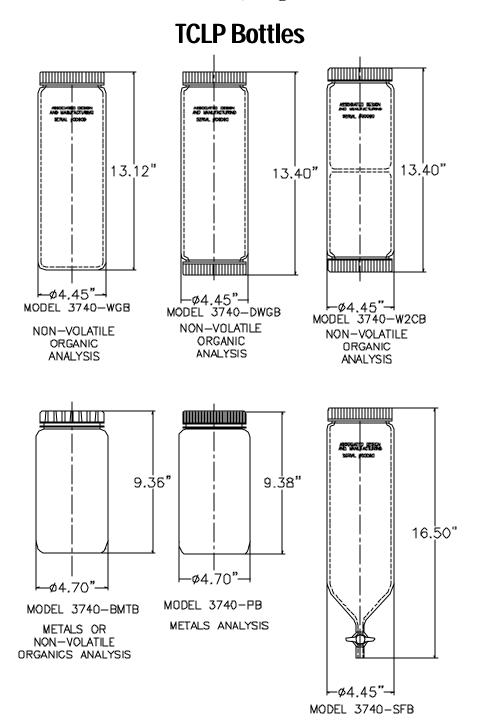
- Safety Shields
- Drip Pans
- 0-30 hr Elapse Timer

- RPM Meter
- Variable Speed (2-45 rpm)
- 220VAC/50HZ

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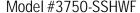


Call for Specifications Sheet

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MODEL 3750 HAZARDOUS WASTE FILTRATION UNITS





THE MODEL 3750-SSHWF, 3750-SHWF AND 3750-LHWF HAZARDOUS WASTE FILTRATION UNITS

The Associated Design Model 3750-SSHWF, 3750-SHWF and 3750-LHWF Hazardous Waste Filtration Units are pressure filtration units used for separating solid samples and their extracts during the Extraction Procedure toxicity (EP-TOX) U.S. EPA Method 1310 and the non-volatile applications of the Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312. Designed for both the initial solid/liquid phase separation of samples as well as the filtration of leachate, these filtration units also can be used to perform the preliminary percent solids determination on all TCLP and SPLP samples p rior to extraction.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The 3750-SSHWF, 3750-SHWF and 3750-LHWF Hazardous Waste Filtration Units are pressure -actuated devices made entirely from Type 316 stainless steel. The 3750-SSHWF uses a 47mm diameter glass-fiber filter (0.7 micron), the 3750-SHWF uses a 90mm diameter glass-fiber filter (0.7 micron), the 3750-LHWF use a 142mm diameter glass-fiber filter (0.7



Model #3750-SHWF

micron). Each filtration unit utilizes standard Viton® O-rings and has a nominal capacity of 130mLl (3750-SSHWF), 330mL (3750-SHWF), and the 2.2 liters (3750-LHWF).

DESIGN FEATURES

The Associated Design filtration units feature a symmetric design that permits easy assembly and use. Each flange is independently attached and sealed to the body so that you can fill the unit to capacity before closing the top flange. The 3750-LHWF easily holds the full contents of a 100 gram/2-liter TCLP extraction bottle. To use, simply position the filter at either end of the interchangeable filtration body, attach the bottom flange to secure the filter and add up to 2.2 liters of sample directly into the vessel. Upon fastening the top flange, the "Speed Nut" fitting is used to quickly attach a .25 o.d. pressure line to the unit. An optional female quick-convert can be purchased to accept the ZHE air supply

BUILT FOR DURABILITY AND CONVENIENCE

The 3750-SSHWF, 3750-SHWF and 3750-LHWF are stable instruments built to exceed the 50-psi level needed for filtrate extraction. Tri-clover or other types of special pressure fittings are available upon request. Units may be ordered with optional Teflon® interior coating. On Model 3750-LHWF, the base



Model #3750-LHWF

legs are available in lengths of 9 inches or 13 inches.

NO TOOLS REQUIRED

When used in conjunction with the Associated Design Rotary Agitators and Zero Headspace Extractors, no tools are needed to perform the complete TCLP extraction.

PROVEN AND APPROVED

The Associated Design Hazardous Waste Filtration Units have been used by major laboratories across the country since 1987 and are U.S. EPA-approved filtration devices.

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MODEL 3790-GTS GAS TIGHT SYRINGE



Model #3790-GTS

THE MODEL 3790-GTS GAS-TIGHT SYRINGE

The Associated Design Model 3790-GTS Gas Tight Syringe was developed to transfer extraction buffers for the analysis of volatile leachates during the Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312.

The gas-tight syringe is a useful accessory for the 3745-ZHE and 3740-ZHE Zero Headspace Extractors by permitting the sealed collection of volatile pollutants without losses due to evaporation.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The 3790-GTS is suitable filtrate collection container for use in performing TCLP or SPLP. All wetted parts are made from stainless steel. Standard Viton® Orings are used throughout. The syringe has a nominal capacity of 100 ml.

FACILITATES FILTRATE COLLECTION

To use the 3790-GTS for filtrate collection, attach the syringe directly to the "Speed Nut" on the ZHE, open the sample valve and collect the filtrate in the gas-

tight syringe. The syringe can be cooled to 4 degrees C as required for storage of volatile waste samples.

BUILT FOR DURABILITY AND CONVENIENCE

Virtually unbreakable, the 3790-GTS has a unique 0-100ml dual scale that permits fast determination of fluid volumes. A proprietary shut-off/metering valve and Viton® o-ring seals prevent leakage and insure sample integrity. The new Teflon® piston cup allows easier syringe movement for loading extraction buffers without stiffness or binding. Fast disassembly by hand facilitates cleaning for reuse. The 3790-GTS is provided with a .25-inch o.d. connection on the end of the valve or it can be supplied with an optional male luer lock.

NO TOOLS REQUIRED

When used in conjunction with the Associated Design Zero Headspace Extractors and Rotary Agitators, no tools are needed to perform the complete TCLP extraction.

OPTIONS

The 3790-GTS can be ordered with a male luer lock adapter.

PROVEN AND TESTED

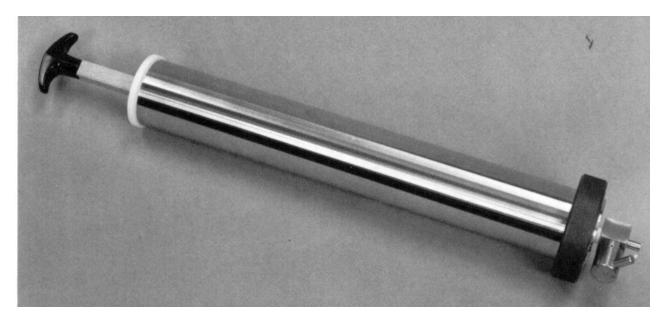
The Associated Design Gas-Tight Syringe has been used by major laboratories across the country since **1987** and is a suitable TCLP device.

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MODEL 3775-GTS STAINLESS STEEL GAS TIGHT SYRINGE



Model #3775-GTS

THE MODEL 3775-GTS GASTIGHT SYRINGE

The Associated Design Model 3775-GTS Gas Tight Syringe was developed to transfer extraction buffers for the analysis of volatile leachates during the Toxicity Characteristic Leaching Procedure (TCLP) U.S. EPA Method 1311 and the Synthetic Precipitation Leaching Procedure (SPLP) U.S. EPA Method 1312. The gas-tight syringe is a useful accessory for the 3745-ZHE and 3740-ZHE Zero Headspace Extractors by permitting the sealed collection of volatile pollutants without losses due to evaporation.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The 3775-GTS is approved as a filtrate collection container for use in performing TCLP or SPLP. All wetted parts are made from stainless steel. Standard Viton® o-rings are used throughout. The syringe has a nominal capacity of 600 mL.

FACILITATES BUFFER LOADING AND UNLOADING

Loading extraction buffer into the ZHE or collecting filtrate may be accomplished quickly utilizing the 3775-GTS rather than with a mechanical pump. To load the buffer, draw the buffer into the syringe, attach the 3775-GTS directly to the ZHE, depressurize the system, open the sample valves and introduce the pre-determined amount of fluid. For collection, attach the syringe directly to the ZHE, open the sample valve and collect the filtrate. The 3775-GTS can be cooled to 4° C, as is required for storage of volatile waste samples.

BUILT FOR DURABILITY AND CONVENIENCE

Virtually unbreakable, the 3775-GTS has a unique 0-600ml dual scale that permits fast determination of fluid volumes. A proprietary shut-off/metering valve and Viton® o-ring seals prevent leakage and insure sample integrity. The new Teflon® piston cup allows easier syringe movement for loading extraction buffers without stiffness or binding. Fast disassembly by hand facilitates cleaning for reuse. The 3775-GTS is

provided with a .25-inch o.d. connection on the end of the valve or it can be supplied with an optional male luer lock.

NO TOOLS REQUIRED

When used in conjunction with the Associated Design Zero Headspace Extractors and Rotary Agitators, no tools are needed to perform the complete TCLP extraction.

OPTIONS

The 3775-GTS can be ordered with a male luer lock adapter.

PROVEN AND TESTED

The Associated Design Gas-Tight Syringe has been used by major laboratories across the country since 1987 and is a suitable TCLP device,

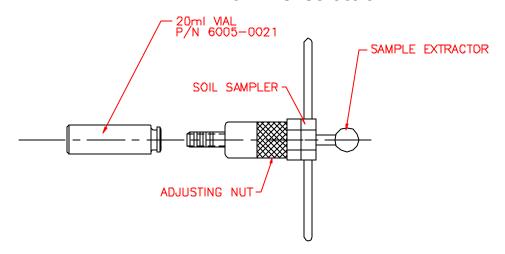
SALES: 1-(800) 837-8257 FAX (571) 642-0213

www.associateddesign.com mail:

info@associateddesign.com

page 11

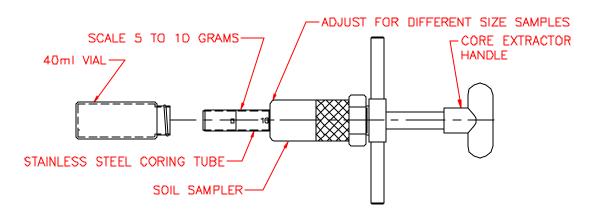
5 GRAM SOIL SAMPLER MODEL 3780-SS/5



- New 1 piece stainless steel body with integrated handles
- Fits standard 20ml Crimp Vials Adjust from 1 to 5 gram samples
- Designed to fine tune soil samples, depending on loose or compact soil.
- Re-usable

Method 5021 and 5035

10 GRAM SOIL SAMPLER MODEL 3780-SS/10

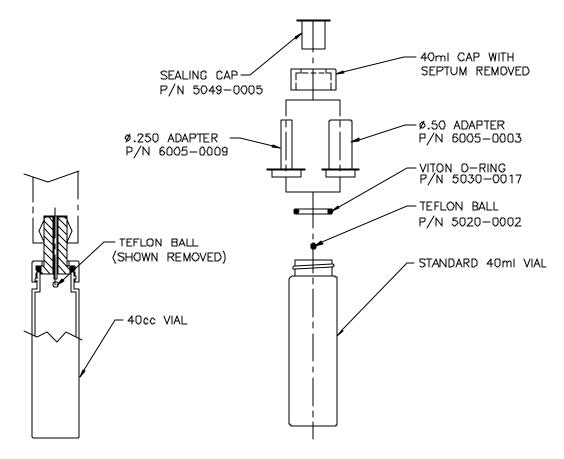


- New 1 piece stainless steel body with integrated handles
- Fits standard 40ml vials
- Adjust from 5 to 10 gram Samples
- Designed to fine tune soil samples, depending on loose or compact soil.
- Re-usable

Method 5021 and 5035

SALES: 1-(800) 837-8257 FAX (571) 642-0213 <u>www.associateddesign.com</u> or mail: <u>info@associateddesign.com</u> page 12

PURGE & TRAP ADAPTERS FOR 40ml VIALS



MODEL 3780-PT/.25 1/4" DIAMETER & 3780-PT/.50 1/2" DIAMETER

PURGE FROM SOIL CONTAINER

The collected sample is placed in an ordinary 40-ml U.S. EPA vial with a cap that has been modified with the Associated Design Model 3780-PT/.25 1/4" diameter, and 3780-PT/.50 1/2" diameter Purge & Trap VOA Vial Adapter. This adapter replaces the septum in the vial to permit the heated purge & trap collection of the soil volatiles directly from the container used in the field. The 1/4" and 1/2" diameter adapter is a cylindrical stainless steel fitting that is attached to the vial with the vial cap. In the adapter a replaceable "knockout" Teflon® ball seals the sparge tube opening until it is attached to the purge & trap unit. The adapter's Viton® O-ring and transportation cap insure a

tight seal for the vial and its content after closure.

NO LOSS OF VOLATILES

Using the vial adapter and Associated Design's Soil Sampler #3780-SS/10, field collection of soils can be done directly in the same container that will be connected to the purge & trap equipment in the laboratory. Since the vial does not need to be reopened no volatiles will be lost prior to analysis.

TEKMAR ® COMPATIBLE

In the laboratory the VOA Vial Adapter connects directly to your Tekmar ®or similar purge & trap system as a regular .25-inch and .50-inch diameter needle sparge tube. As it is fastened, the purge & trap sparge needle displaces the Teflon® ball seal, permitting the introduction of

reagent water and sample spikes into the vial for the start of the analysis run. The VOA Vial Adapter can be modified to fit larger diameter sparge tube holders upon request.

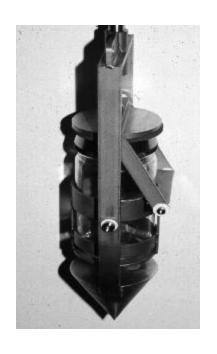
PROVEN AND TESTED

The Models 3780-PT/.25 and 3780-PT/.50 VOA Vial Adapters have been developed in collaboration with one of the country's leading environmental laboratories.

SALES: 1-(800) 837-8257 FAX (571) 642-0213 www.associateddesign.com mail: info@associateddesign.com

Associated Design & Manufacturing Company Lorton, Virginia

Sludge Sampler Model #2001-SS







Closed Position

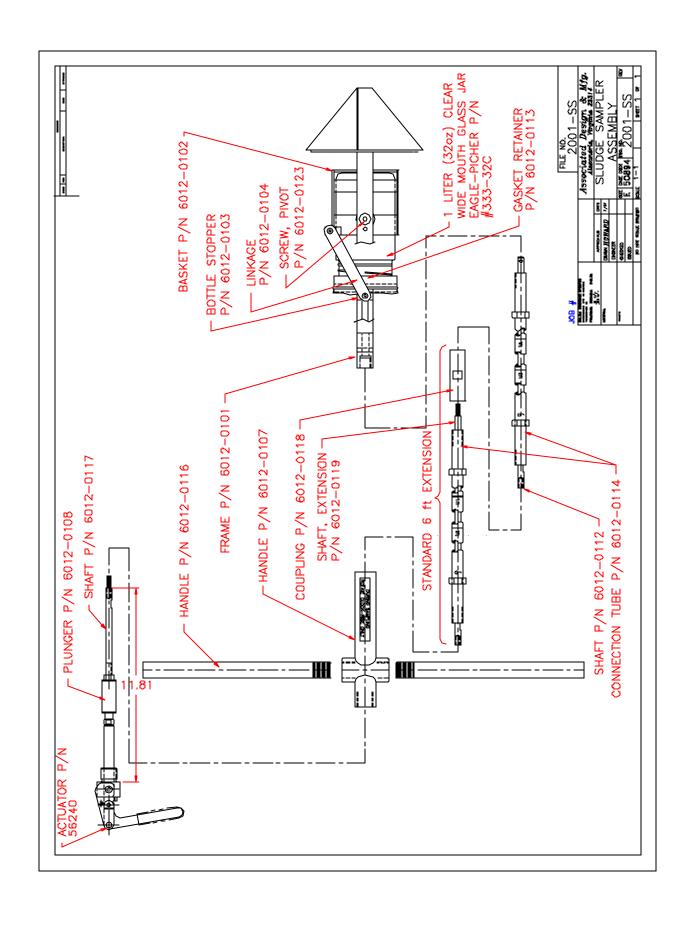
MODEL 2001-SS

Open Position

The Model #2001-SS Sludge Sampler holds a one liter removable glass jar for taking samples of sludge or other flow able liquids at various depths. This Model #2001-SS is constructed of stainless steel and is available with additional 6ft extension shafts. This unit can be easily assembled in the field.

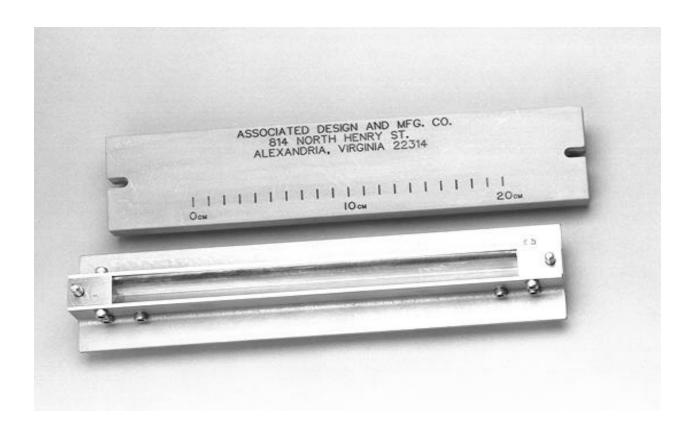
For more information contact

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Associated Design & Manufacturing Company Lorton, Virginia

Burn Mold Model #MOLD-173



Model # Mold-173 for the Ignitability of Solids Method 1030. This device is used to test the time it takes for a strip of waste to burn over a given length. The mold is stainless steel and is supplied with an engraved (centimeter scale) ceramic base used to measure the burn distance.

Call for Specifications Sheet

SALES: 1-(800) 837-8257 FAX (571) 642-0213 www.associateddesign.com or mail: info@associateddesign.com

CORROSIVITY COUPONS



7001-0001 CORROSIVITY COUPON

For U.S. EPA Method 1110 (Corrosivity Test)

Steel Coupon Disk 1.5 inches in diameter

WITH EACH OF	RDER
	WITH EACH OF

1020 STEEL - OTHER GRADE STEELS AVAILABLE UPON REQUEST

SERIALIZED FOR YOUR CONVENIENCE

11550014	ted Design & M	Ianufacturing Company
8245-K Backlick	Rd.	Phone 571-642-0222
Lorton VA 22079		Fax 571-642-0213
SAMPLE 0	ONLY	SAMPLE ONLY
CER	TIFICATE OF	F CONFORMANCE
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 $\underline{www.associatedde\,sign.com}\,or\,\,mail:\,info@\,associateddesign.com$

MODEL 3760-LRT LIQUID RELEASE TEST DEVICES



Model #3760-LRT

THE MODEL 3760-LRT LIQUID RELEASE TEST DEVICE

The Associated Design Model 3760-LRT Liquid Release Test Device is a laboratory or field unit designed to perform the proposed Liquid Release Test (U.S. EPA Method 9096) on sorbent materials used inside hazardous waste containers. The disposal of containerized waste containing free liquids is expected to be banned under a proposal from the U.S. EPA (Federal Register. October 29, 1991) to meet the requirements of Section 3004 (c)(2) of the Hazardous and Solid Wastes Amendments.

COMPLIES WITH U.S. EPA SPECIFICATIONS

The 3760 LRT is a piston-based, pressure activated device capable of detecting liquid release from an overloaded sorbent where the saturation concentration is exceeded by as little as 10%. Sorbent samples in the 3760-LRT are subjected to simulated landfill overburden conditions of 50 psi during the test.

DESIGN FEATURES

Incorporated into the Associated Design 3760-LRT are two major components: a Test Cell consisting of a sample holder, piston and pressure application apparatus; and a separate Base Unit with controls. Blue indicator paper is used on the top and bottom of the sample holder for easy release detection. Stainless steel support screens and spacer grids separate the sample from the indicator filter paper. A built-in pressure regulator and dual-pressure gauges permit precise calibration of the device to the required 50-psi level.

CONVENIENT SAMPLE LOADING

Introduction of the correct amount of sorbent into the sample test cell is fast and convenient because the sample cell is pre-marked at the necessary 10cm height level for the test. The screening of many sorbent types can be rapidly accomplished using multiple test cells and a single LRT base unit.

NO FALSE RELEASES

The air spacing of the wire grids eliminates false liquid release due to capillary action of the sorbent material. The special offset shape of the top indicator paper stops additional false releases due to liquid material clinging to the test wall during compression.

FIELD OR LABORATORY USE

The rugged design and portable size of the unit permits the testing of your samples to be done in either the field or the lab.

PROVEN AND TESTED

The Model 3760-LRT has been used in laboratories across the country since **1987** and was used by the U.S. EPA-sponsored evaluation and development of the LRT Method.

SALES: 1-(800) 837-8257 FAX (571) 642-0213 www.associateddesign.com mail: info@associateddesign.com

ACCESSORIES

ZHE ACCESSORIES

3740-FMP	FLUID METERING PUMP -Mechanical Pump for loading extraction buffer into the
	3740-ZHE and 3745-ZHE.
3775-GTS	GAS-TIGHT SYRINGE-Stainless steel gas-tight syringe with a nominal capacity of
	600ml. Can be used to load extraction buffers into the ZHE and as a collection device.
	Features new EASY/FLO piston design. Upgrades for older GTS versions are
	available. Syringe can also be ordered with special adapters to meet your
	requirements.
ZHE-5044-0001	90MM GLASS FIBER FILTER* -Binderless borosilicate glass fiber filter with an
	effective pore size of 0.7 microns (Package of 100).
ZHE-6001-0011	90MM REPLACEMENT SUPPORT SCREEN-Stainless steel replacement support
	screen for the 3740-ZHE and 3745-ZHE (Package of 2).
ZHE-6001-0044	90MM STAINLESS STEEL FILTER -Type 316 stainless steel filter for use with
	oily or other difficult-to-filter waste that would otherwise clog glass fiber filters.
	Replaces both filter and support screens when used with the 3740-ZHE and the 3745-
	ZHE. Effective pore size of 0.5 microns.
ZHE-6001-0052	ZHE O-RING REPLACEMENT KIT-Complete replacement set of 6 Viton® O-
	rings for the 3740-ZHE and the 3745-ZHE.
ZHE-3745-ILF	IN-LINE FILTER- The In-Line Filter Model 3745-ILF attaches to the ADAM Zero-
	Headspace Extractor Part Number 3745-ZHE and 3740-ZHE, and captures debris in
	the event that the primary filter of the ZHE ruptures. Model 3745-ILF comes with a
	replaceable 47mm diameter 0.7 micron glass fiber filter, a removable support screen
	and two Viton® O-rings, The waste side employ's a ¼' Swagelok® with a Teflon®
	ferrule. All other wetted parts are made from type 316 stainless steel.
ZHE-6005-0006	TEDLAR® SAMPLE BAG- Stainless steel tube valve on the sample collection bag
	allows rapid connection to the 3740-ZHE and the 3745-ZHE. The septum on the bag
	allows sample withdrawal with syringe needle. Nominal capacity of 1 liter (Package of
	10).
*()ther aloce_tiber til	ter sizes may be ordered upon request

^{*}Other glass-fiber filter sizes may be ordered upon request

AGITATOR ACCESSORIES

3740-PB	POLYETHYLENE BOTTLE-2.2-Liter capacity,100-mm cap, plastic bottle.
3740-W2CB	TWO-COMPARTMENT GLASS BOTTLE-2 x 1.1-Liter capacities, 100mm cap at
	both ends of the safety-coated bottle. (Requires one 3740-RC rubber collar.) Made of
	Type 1 borosilicate glass according to ASTM Standard E438-83.
3740-WGB	WIDE-MOUTH GLASS BOTTLE-2.2-Liter capacity, 100mm cap, safety coated
	bottle. (Requires one 3740-RC rubber collar.) Made of Type 1 borosilicate glass
	according to ASTM Standard E438-83.
3740-DWGB	DOUBLE ENDED WIDE MOUTH GLASS BOTTLE-2.2-Liter capacity 100mm
	cap at both ends of safety coated bottle (Requires one 3740-RC rubber collar.) Made
	of Type 1 borosilicate glass according to ASTM Standard E438-83.
3740-LWTB	WIDE MOUTH TEFLON® BOTTLE-2.2-Liter capacity, 100mm opening Teflon
	bottle (Requires two 3740-RC rubber collars).
3740-RC	RUBBER COLLAR-For use with all glass and wide mouth Teflon bottles.

3740-TM	0-30 HOUR AGITATOR TIMER- 30-hour timer accessory for all 3740 Series
	Rotary Agitators. Independent installation on Rotaries.
BRE-6001-0067	AGITATOR COLLAR* -For use as a permanent collar on the Millipore® ZHE.
3740-(NO.)-SS	AGITATOR SAFETY SHIELD-Safety shield for use with 3740 Series rotary
	agitators. Specify agitator size when ordering.
3740-(NO.)-ST	SPILL TRAY- Spill tray for use with 3740 Series rotary agitators. (Specify agitator size when ordering).

^{*}Other special agitator collars may be ordered upon request.

FILTRATION UNIT ACCESSORIES

SHWF-5044-0001	90MM GLASS FIBER FILTER* -Binderless borosilicate glass filter with an effective pore size of 0.7 micron (Package of 100).
SHWF-6001-0011	90MM REPLACEMENT SUPPORT SCREEN-Stainless steel replacement support screen.
SHWF-6001-0044	90MM STAINLESS STEEL FILTER -Type 316 stainless steel filter for use with oily or other difficult-to-filter waste that would otherwise clog glass fiber filters. Replaces both filter and support screens when used. Effective pore size of 0.5 microns.
SHWF-6001-0083	SHWF O-RING REPLACEMENT KIT-Complete set of 4 Viton o-rings for the 3750-SHWF 330ml filtration unit.
HWF-5044-0002	142MM GLASS FIBER FILTER* -Binder less borosilicate glass fiber filter with an effective pore size of 0.7 microns. (Package of 100).
HWF-6002-0008	142MM REPLACEMENT SUPPORT SCREEN-Stainless steel replacement support screen for the 3750-HWF and 3750-LHWF.
HWF-6002-0012	142MM STAINLESS STEEL FILTER -Type 316 stainless steel filter for use with oily or difficult-to-filter waste that would otherwise clog glass fiber filters. Replaces both the glass fiber filter and support screen when used with the 3750-HWF and 3750-LHWF. Effective pore size of 0.5 microns.
HWF-6002-0052	HWF O-RING REPLACEMENT KIT -Complete replacement set of 4 Viton o-rings for the 3750-HWF and the 3750-LHWF.
HWF-6001-0074	SHWF, HWF AND LHWF OPTIONAL AIR SUPPLY KIT-Includes a female quick-connect, which accepts the male quick-connect, used on the ZHE air supply.

*Other glass fiber filters may be ordered upon request

SYRINGE ACCESSORIES

	STRINGE ACCESSORIES
GTS-6007-0045	100ML SYRINGE O-RING REPLACEMENT KIT-Complete replacement set of
	Viton® O-rings for the 3790-GTS Gas-Tight syringe.
GTS-6007-0053	600ML SYRINGE O-RING REPLACEMENT KIT-Complete replacement set of
	Viton® O-rings for the 3775-GTS Gas-Tight syringe.
GTS-6007-0036	TEFLON® PISTON KIT-Kit includes a replacement 100mL Teflon® piston and O-
	ring.
GTS-6007-0037	TEFLON® PISTON KIT-Kit includes a replacement 600mL Teflon® piston and O-
	ring.

LIQUID RELEASE TEST ACCESSORIES

3760-TC	ADDITIONAL LRT TEST CELL -For rapid screening of multiple samples using a single LRT base.
LRT-5044-0005	90MM LRT INDICATOR FILTER PAPER -Blue indicator paper for bottom of the 3760-LRT (Package of 100).
LRT-5044-0006	76MM LRT TOP INDICATOR PAPER- 3-point die-cut blue indicator paper for the top of the 3760-LRT (Package of 100).
LRT-6001-0011	90MM REPLACEMENT SUPPORT SCREEN -Stainless steel replacement bottom support screen for the 3760-LRT.
LRT-6006-0029	76MM REPLACEMENT SUPPORT SCREEN -Stainless steel replacement support screen for the top of the 3760-LRT.
LRT-6006-0030	76MM REPLACEMENT SPACER GRID -Stainless steel replacement wire spacer grid for the top of the 3760-LRT.
LRT-6006-0031	90MM REPLACEMENT SPACER GRID -Stainless steel replacement wire spacer grid for the bottom of the 3760-LRT.
LRT-6006-0052	LRT O-RING REPLACEMENT KIT-Complete replacement set of Viton® o-rings for the 3760-LRT.

SALES: 1-(800) 837-8257 FAX (571) 642-0213

TRAINING TAPES AND MANUFACTURING SERVICES

VIDEO TRAINING TAPES

TCLP-TAPE THE TOXICITY CHARACTERISTIC LEACHING PROCEDURE (34:00)-This video

demonstrates the performance of Method 1311. Its first half covers the "Bottle TCLP", the procedure for non-volatile analyses such as metals. The second half concerns the use of the Zero-Headspace Extractor, which is needed when volatiles are of concern. Both sections pay close attention to the variations in the procedure based upon waste composition,

whether it is 100% solid, 50% solid and/or multi-phases.

LRT-TAPE **THE LIQUID RELEASE TEST** (14:28)-The liquid release test, Method 9096

promulgated in August, 1990, is designed to determine if an absorbent will release its liquid under conditions existing at the bottom of a landfill. This tape is an effective training tool for method 9096. It shows the LRT being performed in a visually clear way, covering all the apparatus carefully. It contains a computer-animated simulation of the test that gives the

viewer a valuable understanding of the inner workings of the test

DTFW-TAPE **DIFFICULT-TO-FILTER WASTES** (45:00)-This is a documentary style video that

chronicles the research into the analysis of difficult-to-filter wastes for mobility and leach ability. Oily wastes, for example, have been known to clog filters in Method 1311 evaluations, thus causing inaccurate results. This tape covers the development and use of soil-column tests to model the behavior of these wastes in a landfill environment. It further documents the efforts to modify the TCLP to better predict that behavior. Finally, it shows how the modified method should be performed. Although it makes an ideal companion to

the training video for Method 1311, this tape can also be viewed by itself.

EQUIPMENT DESIGN & FABRICATION SERVICES

For many years Associated Design has played a major role in instrument design and methods development for U.S. EPA toxicity testing. **Let us tackle your new ideas or special equipment needs with our design and fabrication expertise.** We have worked with many environmental scientists to develop and produce the special products or equipment and accessories needed for a number of laboratory projects.

Put us to work for you. We are ready to assist you in any way we can.

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ENVIRONMENTAL HOTLINES

U.S. ENVIRONMENTAL PROTECTION AGENCY 401 M STREET, S.W. WASHINGTON, DC 20460

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CONTINENTAL U.S. (TOLL-FREE)	CI II VI	(800) 424-9346
FACSIMILE		(202) 382-7883
U.S. EPA OFFICE OF SOLID WASTE METHODS INTERNATIONAL		(703) 676-4690
COMMUNICATION EXCHANGE (MICE)	Fax	(703) 903-1373
U.S. EPA RESOURCE CENTER		(202) 260-5922
U.S. EPA SUPERFUND AND ECRA HOTLINE		(800) 535-0202
TOXIC SUBSTANCES CONTROL ACT (TSCA) & ASBESTOS		(202) 554-1404
TECHNICAL INFORMATION AND REFERRAL		(000) 40 (4701
U.S. EPA'S SAFE DRINKING WATER HOTLINE		(800) 426-4791
NATIONAL PESTICIDE TELECOMMUNICATIONS NETWORK OFFICE OF HAZARDOUS MATERIALS & TRANSPORATION		(800) 858-7378
U.S. DEPARTMENT OF TRANSPORTATION		(202) 366-4488
U.S. DELAKTIVIENT OF TRANSFORTATION		(202) 300-4400

SALES: 1-(800) 837-8257 FAX (571) 642-0213

GENERAL INFORMATION TERMS OF SALE

CATALOG SPECIFICATIONS

We have attempted to describe accurately the equipment specified in this catalog. Changes and improvements in some items listed are dictated by the current state of the art. Accordingly, it is necessary for us to reserve the right to change and improve items, to discontinue listings and to add new ones without prior notice. Additional information about any item will be gladly given upon request.

ORIGINAL EQUIPMENT MANUFACTURERS

We can develop special devices per your specifications. We have a fully equipped machine shop and master craftsmen to help you in implementing your equipment ideas.

MODIFICATIONS

If modifications are required on any device to equip it for a special purpose, we will provide an estimate for this service.

ELECTRICAL SPECIFICATIONS

Unless otherwise specified, all electrical specifications are 110 volt, 60 hertz, 3 amps max, single phase, and AC current. Customer's special electrical requirements can be accommodated.

WHERE TO PLACE YOUR ORDER

You can order any product from this catalog directly from Associated Design and Manufacturing (571) 642-0222, FAX (571) 642-0213.

Orders by mail should be addressed to Associated Design & Manufacturing, 8245-K Backlick Road. Lorton Virginia 22079

PRICE INFORMATION

Prices are FOB Lorton, Virginia. Prices and product information are current at the time of quotation.

TERMS

Our terms are Net 10 days with approved credit. If credit has not been established, our terms are payment in advance or C.O.D. A 1-1/2% per month charge will be applied to all invoices not paid within 30 days.

MINIMUM ORDER

All orders under \$100.00 (not including freight charges) will be shipped C.O.D.

EQUIPMENT LEASING

Numerous environmental laboratories are using leasing as an alternative means to obtain needed equipment. Equipment leasing terms can be arranged for most items purchased from Associated Design and Manufacturing. Please contact us to learn the names of the independent leasing firms our customers have used in the past.

SHIPMENTS

All shipments will be made to the ship to address indicated on the customer's Purchase Order. Foreign shipments will be shipped as specified by the customer, FOB our plant.

SHIPMENTS-SPECIAL PACKAGING

Some orders, because of their nature, may require special packaging for shipment. Charges for special packaging will be invoiced at cost.

CLAIMS

All claims for errors in shipment contents must be made within 10 days after receipt of goods. Clerical errors are subject to correction.

RETURNED GOODS

Goods returned must have a return authorization number and be shipped prepaid. All returned goods are subject to acceptance by Associated Design and Manufacturing and will have a 25% restocking charge.

Products made to customer's particular specifications are not returnable. Request for cancellation of such orders will not be considered if manufacturing has commenced.

1-YEAR WARRANTY

All Associated Design products are warranted to be free of defects in material and workmanship. Any device failing due to such defects will be replaced without cost provided the device is returned and an explanation is given. We reserve the right to refuse the exchange if the device has been used with any substance that may be deemed hazardous to Company employees.

There are no other warranties expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose.

QUESTIONS ANSWERED

For assistance, call us. We are eager to help you in any way we can.

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