



Supplies for Organic Analysis

LECO Corporation

In 1936, the Laboratory Equipment Company introduced the first rapid carbon determinator to the American iron and steel industry. Today, over 75 years later, LECO is recognized globally as a leader in the development of high-quality analytical instrumentation, mass spectrometers, chromatographs, metallography and optical equipment, and consumables.

Located in St. Joseph, Michigan—just 90 miles from both Chicago and Grand Rapids, Michigan—LECO's headquarters is comprised of a multi-building campus. Each building contributes to a unique area of the company's success. At our state-of-the-art research and development center, teams of engineers work together to create and test ideas that will be incorporated into the next generation of instruments. Vertically integrated manufacturing capabilities allow quality to drive production—from stamped metal parts to complex electronic assemblies, most components are produced in-house, allowing strict control over the entire manufacturing and assembly process in accordance with the quality standards of ISO-9001. Our Global Support Center provides service and support after the sale of your instrument, as well as customer training



courses and the only fleet of mobile laboratories in North America featuring a hands-on experience with LECO products and specialists. A global network of sales and support professionals, along with CE testing performed at an on-site compliance testing center, help strengthen a commitment to worldwide excellence.

Whether it is a diverse array of analytical instrumentation, a new way to look at gas and liquid chromatography, rugged metallography products, or dedicated service support after the sale, LECO stands by a commitment to deliver the right results.

Mobile Laboratories

LECO Corporation's unique mobile laboratories travel throughout North America, bringing the latest innovations in analytical instrumentation to your neighborhood. Take the opportunity to view our products in use as well as discuss everything from methods to maintenance with knowledgeable LECO technicians.

The LECO fleet includes four specially designed mobile laboratories for organic, materials characterization, metallographic, and spectrographic analyses. To find out more about LECO's Mobile Laboratories or to obtain the latest schedule, call 269-983-5531, 800-292-6141 (U.S. only), or log onto www.leco.com.



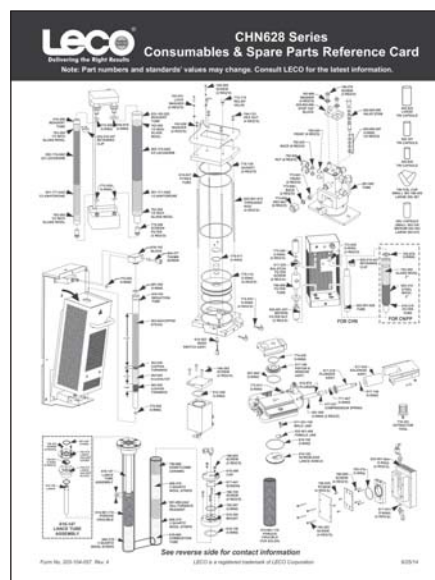
Table Of Contents

To get the best results from your instrument, use only genuine LECO consumables!

Ordering Information/General Terms	1
Information for Elemental Analysis	2
Consumable Packs	3
General Combustion Supplies	4
Sample Size	5
Capsules and Crucibles	6-9
Combustion Tubes and Glassware	10-13
Standards	14-16
O-Rings	17-20
Miscellaneous Operating Accessories	21-24
Preventive Maintenance/Application Notes	25
Maintenance Parts Kits	26
SmartLine Remote Diagnostics.	27
Contact Information	28

Support Materials

A variety of support materials are available to customers of LECO products. Reference Cards offer exploded views of individual instruments, indicating precise locations of spare parts, necessary part numbers, and descriptions of consumable products. Material Safety Data Sheets (MSDS) are also available for a variety of chemical products offered through LECO. These materials may be obtained by contacting your LECO sales representative, or by downloading the latest version from our website, www.leco.com.



Ordering Information/General Terms

Ordering, Customer Assistance, and all Other Inquiries



On-Line Ordering Now Available!

- To receive your free username and password, call **800-292-6141**
- Visit **www.lecodirect.com**

**Only available in the USA.*

Phone



800-292-6141 or
269-985-5496

Email



sales@leco.com
for Purchase Orders or
pricing information

info@leco.com
for general inquiries

Fax



269-982-8977

Mail



LECO Corporation
3000 Lakeview Avenue
St. Joseph, MI 49085

VISA, Mastercard, and American Express Accepted.



Terms and Conditions

- Terms: Net 30 days with approved credit.
- Prices shown are U.S. dollars, F.O.B. St. Joseph, Michigan. Freight charges are prepaid and added to the invoice.
- Sales taxes will be added where applicable.
- Returns must be approved in advance; re-stocking fee may be applied. Return Material Authorization (RMA) is required for all returns. Contact LECO for RMA information.
- Disclaimer: LECO products are intended for use by professional laboratory personnel who are familiar with the handling of these materials. Our products are not for use in household, drug, medical, or cosmetic applications. The buyer and/or user assumes full responsibility for the safe handling, storage, application, and proper disposal of all products ordered from this catalog.
- Complete TERMS and CONDITIONS are included with quotations and invoices.
- **Prices and part numbers are subject to change without notice.**

Information for Elemental Analysis

LECO Corporation is the world leader in elemental determinators for various organic applications. Carbon, Hydrogen, Nitrogen/Protein, Sulfur, Oxygen, and Mercury may be determined in various types of samples including foods, feeds, oilseeds, meats, wet/dry milled products, fertilizers, petroleum products, pharmaceuticals, cements, coal/cokes, and other organic materials.

LECO's determinators are designed with specific capabilities to match the requirements of our customers. Many of the requirements that have been established include precision/accuracy, sample size, instrument range, and hardware/software robustness. In order to obtain the highest level of performance, we recommend that our customers define the following prior to operating our instruments.

Appropriate Sample Size for Your Application

This is generally determined by the type of sample, instrument range, desired precision, level of robustness, sample holder, and methodology requirements. Typically, any elemental determination performed at a mass less than 50 mg is considered a microanalysis; whereas, an analysis performed with a mass of 50 mg to 1 g is considered a macroanalysis. See page 5 for more information on using the appropriate sample size.

Desired Precision and Accuracy for Your Application

Based on standards and a realistic sample size. Appropriate sample size is determined by proven method requirements (for example ASTM or AOAC), level of robustness, and desired sample preparation. Standards are determined by availability and level of certification required for your laboratory. See page 14 for more information on the classification of standards.

Desired Sample Preparation

The level of sample preparation is directly correlated to the heterogeneity of the sample. Some organic products may be analyzed as-is, from the industrial process. However, in order to improve performance on a difficult application, it may be required to pre-treat, pre-dry or pelletize the sample prior to its addition to a sample holder. See page 6 for more information on the types of sample containers/sample sizes that may be used for our elemental determinators.

Desired Level of Maintenance Commitment or Level of Robustness

The amount of preventive maintenance performed on any elemental determinator is relative to the instrument's ability to handle the amount and type of sample that is analyzed. We have designed our instruments to maximize the level of robustness based on the least amount of involvement by the operator; however, there are several measures that can be taken to maximize the longevity of the instrument. Mainly, routine maintenance, appropriate sample size, and the use of proper consumable scrubbers for each application. See page 25 for more information on LECO's Preventative Maintenance Agreements (PMAs).

At LECO Corporation, our Technical Services Laboratory is available to help guide you through any question you may have. Please feel free to contact our scientists at 800-292-6141, 269-985-5496, or email tsl@leco.com for support on your application!

Consumable Packs

Purchasing the highest quality consumables at the most affordable price is the fundamental goal of all instrumentation users. In addition, it is very important to maintain the proper inventory of consumables for your annual usage in order to prevent instrument downtime caused by not having required consumables.

1K Consumable Packs

These packages contain all the necessary consumables to perform 1000 analyses on the 628 Series, or TruMac® instrument models. These packages are priced to offer a 10% savings over ordering consumables individually.

Part No.	Description
502-751-HAZ	628 Series w/Small Tin Foil Cups (502-186-100)
502-752-HAZ	628 Series w/Large Tin Foil Cups (502-397-400)
502-753-HAZ	628 Series w/Small Quik-Cap Capsules (502-338)
502-754-HAZ	628 Series w/Medium Quik-Cap Capsules (502-382)
502-755-HAZ	628 Series w/Small Tin Capsules (502-040-100)
502-720-HAZ	TruMac Series for Solid Samples w/528-203-250 Combustion Boats
502-721-HAZ	TruMac Series for Liquid Samples w/528-203-250 Combustion Boats and 502-343 Nickel Liners

5K Consumable Packs

These packages contain all of the necessary consumables to perform 5000 analyses, as well as some routine maintenance parts (such as reagent tubes, furnace tubes, and required o-rings), on the 628 Series, FP528, 144 Series, or TruMac instrument models. These packages are price to offer a 20% savings over ordering consumables and maintenance parts individually.

Part No.	Description
502-756-HAZ	628 Series with Small Tin Foil Cups (502-186-100)
502-757-HAZ	628 Series with Large Tin Foil Cups (502-397-400)
502-758-HAZ	628 Series with Small Quik-Cap Capsules (502-338)
502-759-HAZ	628 Series with Medium Quik-Cap Capsules (502-382)
502-760-HAZ	628 Series with Small Tin Capsules (502-040-100)
616-199-HAZ	FP528 with Small Tin Cups (502-186-100)
617-016-HAZ	FP528 with Small Quik-Cap Capsules (502-338)
617-016-110-HAZ	FP528 with Medium Quik-Cap Capsules (502-382)
789-431-HAZ	144 Series with Combustion Boats (529-204-250)
502-722-HAZ	TruMac for Solid Samples w/528-203-250 Combustion Boats
502-723-HAZ	TruMac for Liquid Samples w/625-505-430 Nickel Boats

For additional information, contact LECO at 1-800-292-6141.

General Combustion Supplies

Reagents/Packing Material

Part No.	Description	Contents
501-081	Glass Wool	454 g (1 lb.) box
501-170	Rare Earth Copper Oxide	50 g bottle
501-171-HAZ	Anhydrone	454 g (1 lb.) bottle
501-609-HAZ	Furnace Reagent (Calcium Oxide/Kaolin)	100 g bottle
502-049	Nitrogen Catalyst	50 g bottle
502-174-HAZ	Lecosorb (20/30 Mesh)	500 g bottle
502-177	Quartz Wool	50 g package
502-188	Alumina Oxide Pellets	200 g bottle
502-189	Copper Sticks	100 g ampule
502-190	Copper Oxide Wire	100 g bottle
502-196	Carbon Black Powder	10 g bottle
502-226	Silver Vanadate	10 g bottle
502-228	Graphite Pad	One 2 1/4" x 2 1/4" pad
502-283	Sorbit® (TruSpec Micro)	500 per package
502-844	Copper Sticks	100 g bottle
502-310	Steel Wool	454 g (1 lb.) package
502-351	Halogen Scrubber	50 g bottle
502-359	Magnesium Oxide Reagent	200 g bottle
502-644	Furnace Reagent, Micro	60 g bottle
502-656	Copper Turnings	60 g bottle
608-379	Quartz Wool Strips	Ten 15-inch strips
763-265	Glass Wool	227 g (1/2 lb.) package
769-608-HAZ	Antimony	200 g bottle
769-610	F/Cl Absorbent Material	225 g bottle

Accelerators/Combustion Aids

Part No.	Description	Contents
501-426	COM-AID™ (For Solids)	454 g (1 lb.) bottle
501-427	COM-AID™ (For Liquids)	454 g (1 lb.) bottle
501-441	Sucrose	50 g bottle
501-636-HAZ	Vanadium Pentoxide	250 g bottle
502-301	Tungsten Trioxide	125 g bottle
502-321	COM-CAT™	250 g bottle

Sample Size

Using the Appropriate Sample Size

The amount of sample that may be used as the appropriate sample size for certain matrices is governed by the need to achieve certain limits of quantitation with respect to the determined content of the sample.

According to work done by M.J. Gardner in "Sample Heterogeneity and Analytical Precision: How Much Sample Should I Take for Analysis"¹, the uncertainty for different sample sizes diminishes with larger sample sizes; however, the level of improvements in precision reach a point of limited return beyond 0.5 g (500 mg) for samples of higher elemental concentration and 1 g (1000 mg) for samples of lower elemental concentration.

Assuming ~63 μm particle size on a powdered sample at an elemental concentration of 10%, Gardner determined the following uncertainties based on sample size.

Sample Size (mg)	90% probability interval ($\pm\%$)
100	1.1
200	0.8
500	0.5
1000	0.4

Assuming ~63 μm particle size on a powdered sample at an elemental concentration of 1%, Gardner determined the following uncertainties based on sample size.

Sample Size (mg)	90% probability interval ($\pm\%$)
100	3.7
200	2.6
500	1.6
1000	1.1
2000	0.8

It is best to contact our Applications Laboratory for suggestions on sample size for your matrices. Knowing the appropriate sample size for your desired precision is imperative when lengthening the maintenance interval on an elemental determinator.

- For standard feed and milling, use 150 to 250 mg for <5% RSD
- For standard food, petfood, and soils, use 250 to 500 mg for <5% RSD
- For meat and low-level sample concentrations, use 500 to 1000 mg for <5% RSD
- For pharmaceutical applications, use 1 to 10 mg for <5% RSD

¹Analytical Proceedings including Analytical Communications, March 1995, Vol 32 Pg 115-116

Capsules and Crucibles

Refer to pages 8 and 9 for a visual guide to selecting the correct replacement capsule or crucible.

AC500/AC600

Part No.	Description	Contents
774-204	Crucible	10 per package

AF700

Part No.	Description	Contents
625-501-662	Ash Cone Tray (Dual-Sided, 5-6 Place)	100 per package

AMA254

Part No.	Description	Contents
614-822-102	Small Nickel Boat	1 per package
614-822-114	Large Nickel Boat	1 per package

FP528 (See 628 Series, FP528)

144 Series

Part No.	Description	Contents
529-204	Ceramic Boats	50 per package
529-204-250	Ceramic Boats	250 per package

632 Series, 628 S Module

Part No.	Description	Contents
528-203-250	Ceramic Boats, for macrosamples/horizontal-loading furnaces	250 per package
529-203	Ceramic Boats, for macrosamples/horizontal-loading furnaces	100 per package

TGA701

Part No.	Description	Contents
502-628	Foil Liners, for lining TGA Crucibles (621-331)	1200 per package
529-048	Covers, for 621-331 Large Ceramic Crucibles	5 per package
621-331	Large Ceramic Crucibles (529-048 Cover), for thermogravimetric and proximate analyses	5 per package

TruMac Series

Part No.	Description	Contents
502-343	Nickel Boat Liner	100 per package
528-203-250	Ceramic Boats, for macrosamples/horizontal-loading furnaces	250 per package
529-203	Ceramic Boats, for macrosamples/horizontal-loading furnaces	100 per package
625-505-430	Nickel Boats, for aqueous sample using TruMac N/CN models	50 per package

Capsules and Crucibles

Refer to pages 8 and 9 for a visual guide to selecting the correct replacement capsule or crucible.

628 Series, FP528 Capsules and Cups

Note: In order to extend the interval between ash removal, it is recommended to use the container with the lowest ash content.

Part No.	Description	Dimensions (mm)/ Sample Size	Sample Type	Ash Content	Applicable Instruments	Contents
502-338	Small Quik-Cap Capsules	7.3 D x 18.5 H 50-250 mg	Solid	Low	FP628, FP528	400/pkg
502-382	Medium Quik-Cap Capsules	8.2 D x 20.2 H 50-500 mg	Solid	Low	FP628, FP528	400/pkg
502-810	Large Quik-Cap Capsules	9.5 D x 22.0 H 50-1000 mg	Solid	Low	FP628	400/pkg
502-186-100	Small Tin Foil Cups (100/btl - 502-186-200)	35.6 L x 35.6 W 50-350 mg	Solid	Med	628 Series, FP528	1000/pkg
502-397-400	Large Tin Foil Cups (100/pkg - 502-397)	45 L x 45 W 50-1000 mg	Solid	High	628 Series	400/pkg
502-040-100	Small Tin Capsules (100/btl - 502-040)	6.4 D x 15.9 H 50-400 mg	Solid/Liquid	Med	628 Series, FP528	1000/btl
502-167	Medium Tin Capsules	8.7 D x 19.1 H 50-750 mg	Solid/Liquid	High	628 Series	100/btl
502-825	Large Tin Capsules	9.1 D x 21 H 50-1000 mg	Solid/Liquid	Med	FP628	50/pkg

628 Series, FP528 Crucibles

Part No.	Description	Sample Type	Contents
614-961-110	Reticulated Crucible	Solid/Liquid	10/pkg
617-605	Reticulated Crucible	Liquid	10/pkg
780-899	Honeycomb Ceramic Stop		1/pkg

628 Series, FP528 Capsules for Volatile Samples (ASTM D5291)

Part No.	Description	Contents
501-571	Copper Capsules (5.7 mm D x 17.8 mm H); Seal w/502-008 Tin Plug	100/pkg
502-008	Tin Plugs for Sealing 501-571	100/pkg

TruSpec Micro CHNS/O Capsules

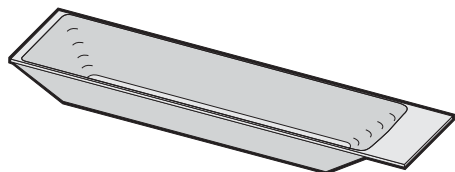
Part No.	Description	Contents
502-206	Silver Capsules for C,H,N,S Micro Analysis (4.0 mm D x 3.2 mm H)	1000/pkg
502-293	Silver Capsules for C,H,N,S Micro Analysis (4.0 mm D x 3.2 mm H)	500/pkg
601-963	Tin Capsules for C,H,N,O Micro Analysis (3.5 mm D x 4 mm H)	1000/pkg

TruSpec Micro CHNS/O Crucibles

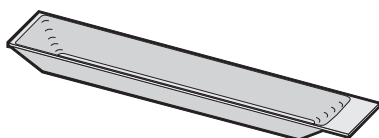
Part No.	Description	Contents
502-489	Micro Reticulated Crucible (Micro CHNS Analysis)	10/pkg
614-961-110	Reticulated Crucible	10/pkg
625-511-154	Reticulated Crucible for Primary Furnace Reagents	5/pkg
606-026	Graphite Crucible for Oxygen Analysis	10/pkg

Capsules and Crucibles

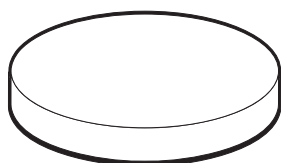
Most commonly used items represented.



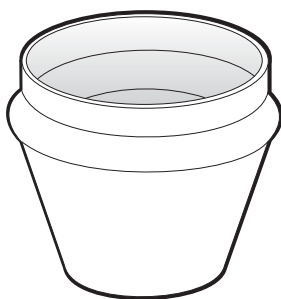
614-822-114
Large Nickel Boat
(AMA254 only)



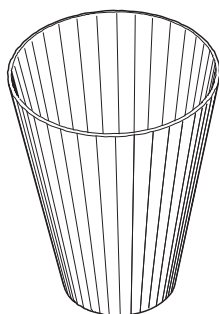
614-822-102
Small Nickel Boat
(AMA254 only)



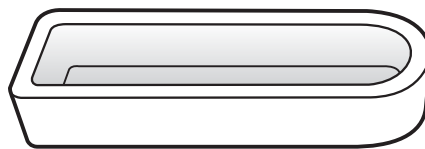
529-048
Ceramic Cover



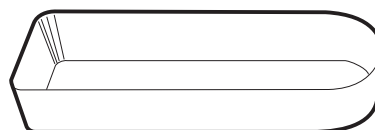
621-331
Ceramic Crucible
(TGA701)



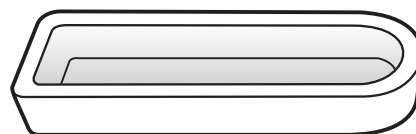
502-628
Foil Liner
(for 621-331 Crucible only)



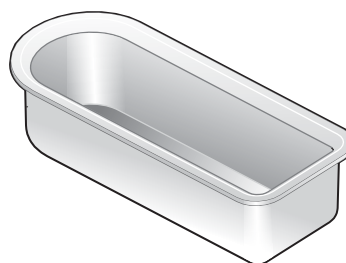
529-203
528-203-250
Ceramic Boat
(628 S Module, TruMac Series, 632 Series)



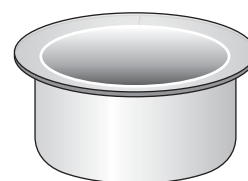
502-343
Nickel Boat Liner
(For use with 529-203 and 528-203-250 Ceramic Boats)



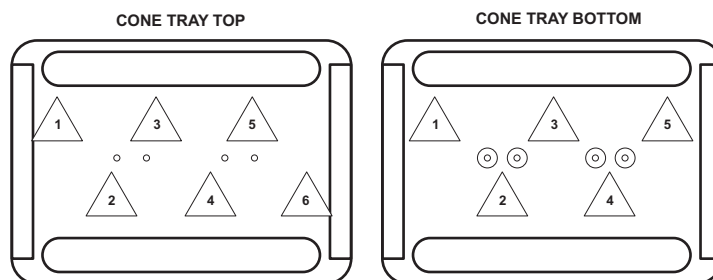
529-204 Ceramic Boat (144 Series)
529-204-250 Ceramic Boat (144 Series)



625-505-430
Nickel Boat
(TruMac CN/N)



774-204
Crucible
(AC-Series)



625-501-662 Ash Cone Tray
(Dual Sided 5/6 Place) 100 Pk (AF700)

Capsules and Crucibles

Most commonly used items represented.



502-040
502-040-100
Tin Capsule
(small)



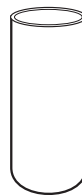
502-167
Tin Capsule
(medium)



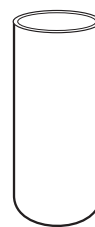
502-825
Tin Capsule
(large)



502-338
Quik-Cap Capsule,
Cellulose
(small)



502-382
Quik-Cap Capsule,
Cellulose
(medium)



502-810
Quik-Cap Capsule,
Cellulose
(large)



601-963
Tin Capsule
(micro)



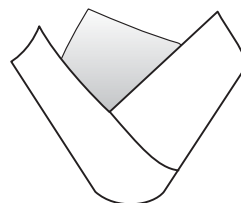
502-206
502-293
Silver
Capsule
(micro)



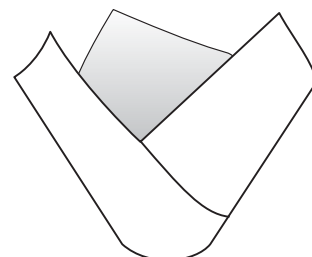
502-008
Tin Plug



501-571
Copper
Capsule



502-186-200 (small)
502-186-100 (small)
Tin Foil Cup



502-397 (large)
502-397-400 (large)
Tin Foil Cup



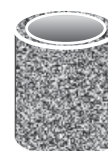
614-961-110
Porous Reticulated
Crucible for solid samples
(628 Series, FP528)



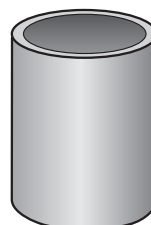
617-605
Porous Reticulated
Crucible for liquid samples
(628 Series, FP528)



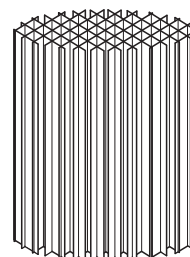
625-511-154
Porous Reticulated
Crucible



502-489
Micro Porous
Reticulated
Crucible



606-026
Graphite
Crucible



780-899
Honeycomb
Ceramic
Stop

Combustion Tubes and Glassware

Refer to pages 12 and 13 for a visual guide to selecting the correct replacement tubes and glassware.

AF700

Part No.	Description
619-316	Filter Tube
625-501-391	Furnace Tube
625-501-394	D-Tube
633-101-990	Gas Inlet Tube
633-101-997	High Temperature Furnace Tube

AMA254

Part No.	Description
614-822-105	Catalyst Tube
614-822-110	Amalgamator

FP528 (See 628 Series, FP528)

144 Series

Part No.	Description
606-327	Reagent Tube
616-051	Purge Tube
616-070	Inner Combustion Tube
616-086	Boat Stop Ceramic
616-089	Outer Combustion Tube

632 Series, 628 S Module

Part No.	Description
606-308	Boat Stop Ceramic
606-309	Outer Combustion Tube
606-313	Inner Combustion Tube
619-455	Reagent Tube
625-401-351	Lance Tube, Autoloader
625-401-352	Lance Tube, Manual Load

Combustion Tubes and Glassware

Refer to pages 12 and 13 for a visual guide to selecting the correct replacement tubes and glassware.

628 Series, FP528

Part No.	Description	Used On
601-390	Furnace Filter Tube	628 Series, FP528
614-962	Lance Tube	FP528
616-108	U-Shaped Combustion Tube	FP528
616-146	Lance Tube	628 Series
619-065	U-Shaped Combustion Tube with flat bottom	628 Series
619-154	Catalyst Heater Tube	628 Series
619-268	High Sensitivity Reagent Tube (Aliquot)	628 Series
619-316	Extended-Use Glass Filter Tube	CN628, FP628
622-001-026	Filter Tube	628 Series
633-103-225	Reagent Tube (Incoming Carrier Gas)	628 Series
771-030	Bubble Tube	FP528
775-601	Reagent Tube	FP528
780-899	Honeycomb Ceramic Crucible Stop	628 Series, FP528

TruMac Series

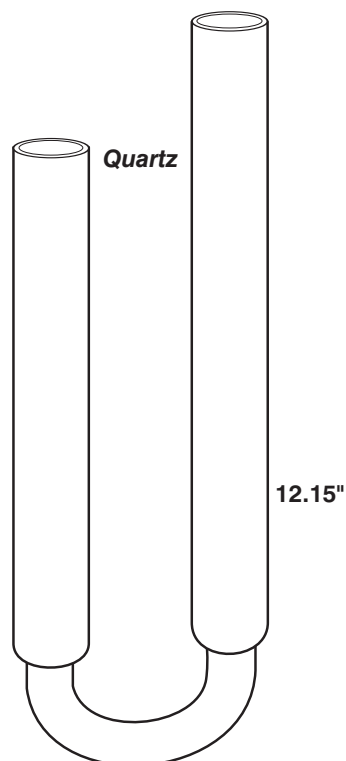
Part No.	Description
606-308	Boat Stop Ceramic
619-154	Catalyst Heater Tube
619-268	Aliquot Dose Scrubber Tube
619-455	Furnace Filter Tube (CNS/NS Models)
625-601-554	Outer Combustion Tube
625-601-555	Inner Combustion Tube
625-602-187	Lance Tube
625-602-539	Primary Filter Tube (N/CN Models)
633-103-225	Secondary Filter/Incoming Helium Scrubber Tube

TruSpec Micro O

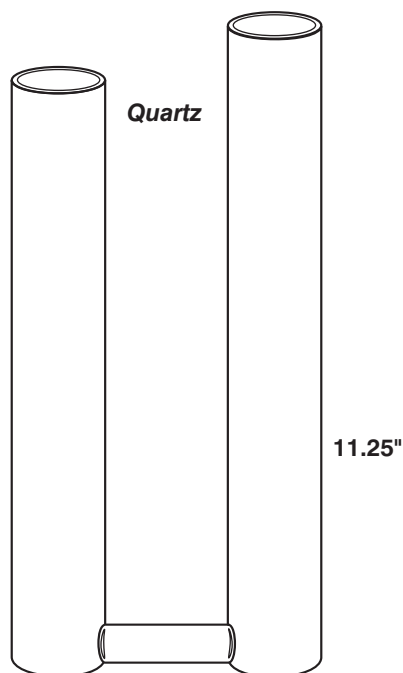
Part No.	Description	Used On
608-065	Graphite Lance	TruSpec Micro O
608-130	Inner Combustion Tube	TruSpec Micro O
619-425	Filter Tube	TruSpec Micro CHNS
619-774	Lance Tube	TruSpec Micro CHNS
619-776	Reagent Tube	TruSpec Micro CHNS
619-777	Middle Tube	TruSpec Micro CHNS
625-401-360	Outer Combustion Tube	TruSpec Micro O
775-601	Reagent Tube	TruSpec Micro O

Combustion Tubes and Glassware

Most commonly used items represented.



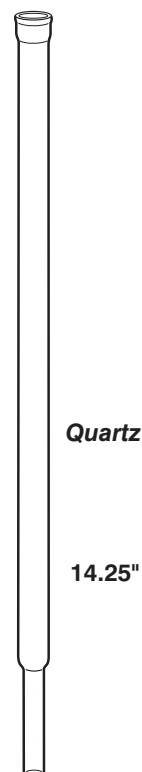
616-108
U-Shaped
Combustion Tube
(FP528 Only)



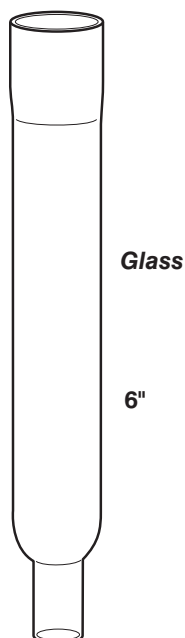
619-065
U-Shaped Combustion Tube
w/Flat Bottom
(628 Series)



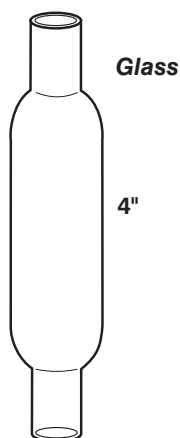
619-268
High Sensitivity
Reagent Tube



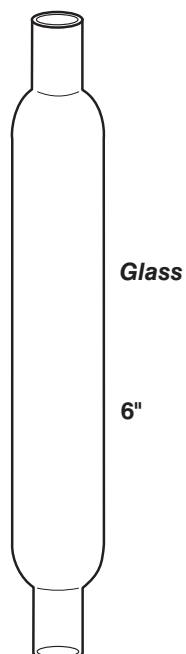
619-154
Catalyst
Heater Tube



625-602-539
Furnace Filter
Tube



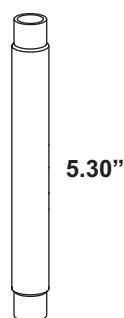
771-030
Bubble
Tube



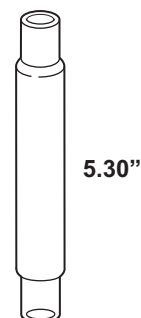
775-601
Reagent
Tube



614-822-105
Calalyst Tube
(AMA254 Only)



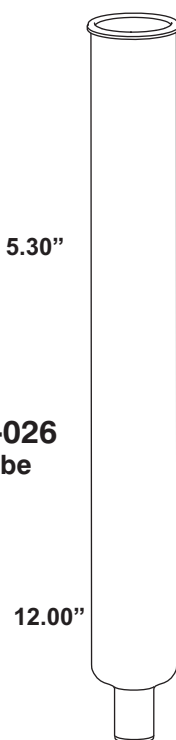
619-425
Filter Tube



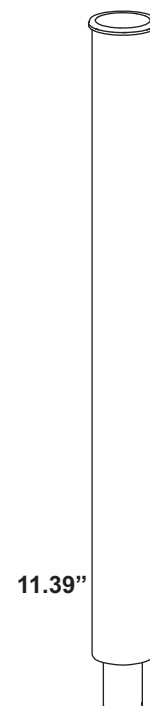
622-001-026
Filter Tube



614-822-110
Amalgamator
(AMA254 Only)



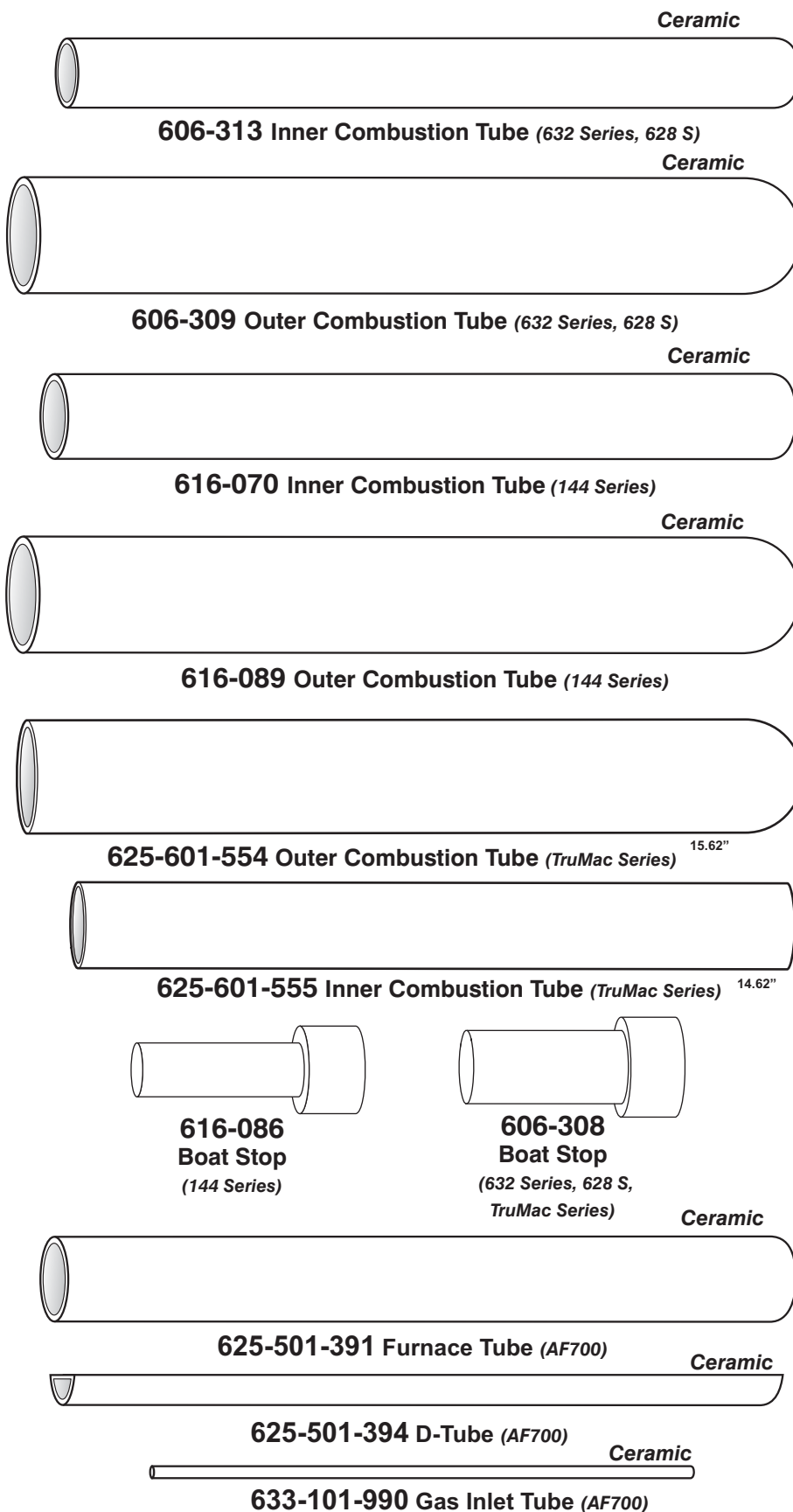
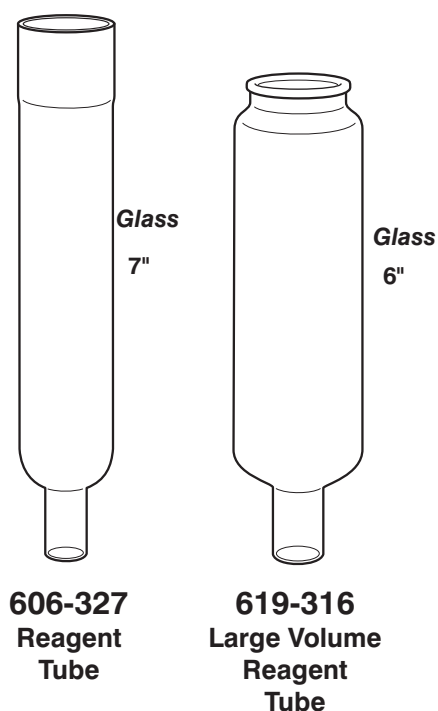
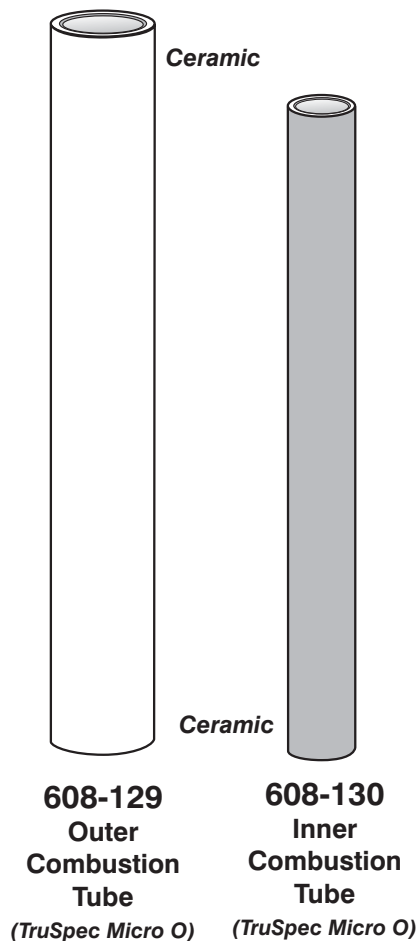
619-455
Reagent
Tube



633-103-225
Reagent
Tube

Combustion Tubes and Glassware

Most commonly used items represented.



Standards

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Pure Chemical Standards

Part No.	Description	% C	% H	% N	% O	% S	BTU/lb.	Contents
501-034	Calcium Carbonate	12.0	—	—	—	—	—	50 g
501-048	Potassium Biphtalate	47.05	2.47	—	31.34	—	—	20 g
501-050	Nicotinic Acid	58.53	4.09	11.38	—	—	—	15 g
501-053	Acetanilide	71.09	6.71	10.36	11.84	—	—	10 g
501-441	Sucrose	42.10	6.48	—	51.42	—	—	50 g
502-085	Zinc Sulfide	—	—	—	—	32.91	—	50 g
502-092	EDTA	40.80–41.20	5.46–5.54	9.52–9.60	—	—	—	50 g
502-092-250	EDTA	40.80–41.20	5.46–5.54	9.52–9.60	—	—	—	250 g
502-101	Durene	89.49	10.51	—	—	—	—	10 g
502-184	Benzoic Acid Powder	68.85	4.95	—	26.20	—	11373	10 g
502-203	Stearic Acid	75.99	12.76	—	11.25	—	—	5 g
502-204	Dinitrobenzoic Acid	39.63	1.90	13.21	45.26	—	—	5 g
502-205	Caffeine	49.48	5.19	28.85	16.48	—	—	5 g
502-207	Cystine	29.99	5.03	11.66	26.63	26.69	—	5 g
502-209	Sulfamethazine	51.78	5.07	20.13	11.50	11.52	—	5 g
502-211	Glycine	32.00	6.71	18.66	42.63	—	—	50 g
502-298	Sulfamethazine	51.78	5.07	20.13	11.50	11.52	—	25 g
502-601	Nitrogen (Aqueous)	—	—	0.0100% (100 ppm)	—	—	—	(5) 10 ml vial
502-602	Nitrogen (Aqueous)	—	—	0.1% (1000 ppm)	—	—	—	(5) 10 ml Vial
502-634	High Purity Graphite Powder	100%	—	—	—	—	—	50 g
502-641	Phenylalanine	65.4	6.7	8.5	—	—	—	5 g
502-642	Phenylalanine	65.4	6.7	8.5	—	—	—	50 g
502-654 ▲	BBOT	72.5	6.0	6.5	—	7.4	—	25 g
774-208-150	Benzoic Acid	—	—	—	—	—	11373	(50) 1 g tblt.

Synthetic Carbon Standards

Part No.	Description	% C	Contents
502-632	Synthetic Carbon	0.1–0.2	50 g
502-630	Synthetic Carbon	0.40–0.60	50 g
502-029	Synthetic Carbon	0.90–1.10	50 g
502-030	Synthetic Carbon	4.90–5.10	50 g

Natural Matrix Standards

Part No.	Description	% C	% H	% N	% S	Contents
501-561-150	Soy Flour	—	—	8.0–10.0	—	50 g
501-563-150	Corn Flour	—	—	0.8–1.6	—	50 g
502-055	Orchard Leaves	44.0–52.0	5.7–6.5	2.0–2.8	0.15–0.25	20 g
502-082	Tobacco Leaves	35.0–47.0	4.0–7.0	2.0–4.0	0.3–0.8	20 g
502-272	Corn Gluten	51.0–53.0	7.0–7.5	11.0–12.0	0.75–1.0	50 g
502-273	Alfalfa	45.0–47.0	5.5–6.5	2.5–5.0	0.25–0.35	50 g
502-274	Wheat Flour	44.0–46.0	6.0–7.0	2.5–3.5	0.15–0.25	50 g
502-275	Rye Flour	43.5–45.5	6.0–7.0	1.5–2.5	0.10–0.20	50 g
502-276	Oat Meal	45.0–47.0	6.0–7.0	2.5–3.5	0.15–0.25	50 g
502-277	Barley Flour	45.0–47.0	6.0–7.0	1.0–3.0	0.10–0.20	50 g
502-278	Rice Flour	43.0–45.0	6.0–7.0	1.0–3.0	0.10–0.20	50 g

Standards

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Soil and Ore Standards

Part No.	Description	% C	% H	% N	% S	Contents
502-635	Ore	~0.55	—	—	~45	25 g
502-062 ▲	Soil	0.75–1.25	0.3–0.5	0.09–0.15	0.015–0.3	65 g
502-308	Soil	2.5–3.5	—	0.2–0.3	0.015–0.3	65 g
502-309	Soil	10.0–14.0	—	0.3–1.0	0.015–0.3	65 g
502-814	Soil	20.0–35.0	—	—	0.1–0.5	25 g
502-318	Ore	≤2	—	—	≤2	25 g
502-319	Ore	1–5	—	—	1–5	25 g
502-320	Ore	2–6	—	—	2–6	25 g

Coal and Coke Reference Materials

Part No.	Description	% Sulfur	Contents
502-670	Coal	~0.5	50 g
502-671	Coal	~1.0	50 g
502-672	Coal	~2.0	50 g
502-673	Coal	~3.0	50 g
502-674	Coal	~5.0	50 g

Part No.	Description	% Sulfur	% Volatile	% Ash	% C	% H	% N	BTU/lb.*	Contents
502-680	Coal Prox Plus Low	~0.3	~17.0	~11.0	~81.0	~4.0	~1.0	~13893	50 g
502-681	Coal Prox Plus Med.	~1.3	~32.0	~9.0	~78.0	~5.0	~1.5	~13892	50 g
502-682	Coal Prox Plus High	~0.5	~41.0	~6.0	~75.0	~5.0	~1.5	~13019	50 g
502-683	Met Coke Prox Plus	~0.75	~1.0	~10.0	~87.0	~0.3	~1.0	~12718	50 g
502-684	Pet Coke Prox Plus	~5.5	~13.4	~0.3	~87.0	~3.6	~1.5	~15367	50 g

*for information purposes only

Part No.	Description	ppm Hg	% S	% C	Contents
502-405	NIST 1632d Coal	~0.09	—	—	75 g
502-406	NIST 1633c Fly Ash	~1.0	—	—	75 g
502-499	BCR 143r Mercury in Dry Sludge	~1.1	—	—	50 g
502-649	NIST 2781 Mercury in Dry Sludge	~3.64	—	—	40 g
502-685	LECO Coal RM Low Hg	~0.05	~1.0	—	50 g
502-686	LECO Coal RM Medium Hg	~0.10	~4.2	—	50 g
502-687	LECO Coal RM High Hg	~0.14	~2.2	—	50 g
502-813	LECO Fly Ash	~0.35	~1.0	~1.0	20 g
502-843	Fly Ash Carbon Concentrate	~0.827	~0.29	~42.0	20 g

Standards

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QAR Certified Reference Materials

QAR Coal CRM certificate values and uncertainties are confirmed and validated by the Quality Associates International, LTD (Canada) Proficiency Testing program (CANSPEX™) which includes up to 132 coal testing laboratories from around the world.

Part No.	Description	% S	% Volatile	% Ash	% C	% H	% N	BTU/lb.	ppm Cl	ppm F	ppb Hg	ppm Se	FSI	Contents
502-831	QAR CRM Coal 1	1.5	35.2*	6.9	74.6*	4.8	1.7	13093*	3537	45	121	1.3	1.5	50 g
502-832	QAR CRM Coal 2	0.25	36*	13.0	70.0*	4.0	0.9	11771*	>0.01	81	0.03	0.67	1.0	50 g
502-833	QAR CRM Coal 3	0.34	16.5*	10.9	81.0*	4.01	1.1	13862*	361	95	45	0.99	1.4	50 g
502-834	QAR CRM Coal 4	0.30	34.9*	12.5	68.5*	4.3	0.9	11661*	57	65	37	0.67	—	50 g
502-835	QAR CRM Coal 5	0.5	39.0*	10.5	68.5*	5.0	1.7	12000*	>0.01	110	0.03	1.0	1.0	50 g
502-836	QAR CRM Coal 6	3.99	39.2*	12.6	70.2*	4.9	1.3	12604*	521	72	97	1.5	4.5	50 g
502-837	QAR CRM Coal 7	3.26	38.4*	9.0	72.6*	4.9	1.4	12918*	926	86	58	1.8	1.5	50 g
502-838	QAR CRM Coal 8	0.70	40.6*	12.1	68.5*	4.9	1.2	12000*	>0.01	75	0.04	0.99	1.5	50 g
502-839	QAR CRM Coal 9	2.1	37.7*	7.6	77.5*	5.1	1.5	13833*	1008	66	132	1.1	7.8	50 g
502-845	QAR CRM Coal 10	0.67	3.8*	8.02	87.3*	1.8	0.88	13573*	154	51	169	2	—	50 g
502-846	QAR CRM Coal 11	0.70	5.8*	12.2	81.9*	2.4	1.1	13197*	202	86	112	2.5	—	50 g

*For information purposes only

Oil and Fuel Calibration Material

Part No.	Description	% S	% C	% H	% N	BTU/lb.	Contents
501-439	Paraffin Oil	—	~86	~13.8	—	~19800	100 ml (3.4 oz.)
502-848	Residual Fuel Oil ~0.25% Sulfur	~0.25	—	—	—	—	100 ml (3.4 oz.)
502-849	Residual Fuel Oil ~1% Sulfur	~1	—	—	—	—	100 ml (3.4 oz.)
502-850	Residual Fuel Oil ~3% Sulfur	~3	~86	~10	~0.3	~18300	100 ml (3.4 oz.)
502-851	White Mineral Oil ~0.01%	~0.01	—	—	—	—	100 ml (3.4 oz.)
502-852	White Mineral Oil ~0.1% Sulfur	~0.1	—	—	—	—	100 ml (3.4 oz.)
502-853	White Mineral Oil ~1% Sulfur	~1	—	—	—	—	100 ml (3.4 oz.)
502-854	White Mineral Oil ~5% Sulfur	~5	—	—	—	—	100 ml (3.4 oz.)

TGA Check Sample

Part No.	Description	% Weight Loss at 200°C	% Weight Loss at 400°C	% Weight Loss at 850°C	Contents
502-091	Calcium Oxalate	12	19	30	50 g

Metal Wire Standards for AF700

Part No.	Description	Melting Point	Contents
502-496	Gold Wire	1063°C	6 inch
501-951	Nickel Wire	1452°C	6 inch

O-Rings

See individual consumable and spares reference cards for precise location of o-rings for most instruments. For exact o-ring sizes, please refer to the drawings on pages 19 and 20.

AC500

Part No.	Location
608-624	Vessel Lid
608-750	Filter
760-224	Oxygen Fill Nozzle
760-359	Filling Insert
773-913	Depressurization Valve
776-562	Ceramic Washer

AC600

Part No.	Location
611-543	Prep Station Nipple Charger
621-605-560	Vessel Cap
621-605-664	Check Valve
621-605-973	Seal Insert Exhaust
772-738	Prep Station Inserts
773-913	Electrode Post
776-562	Ceramic Washer

AF700

Part No.	Location
625-501-149	Furnace Tube
625-501-161	Periscope Window
625-501-284	Periscope
625-501-430	Thermocouple/Gas Inlet Tube
760-841	Filter Tube
765-976	Filter Tube
772-520	Balston Filter

AMA254

Part No.	Location
614-822-106	Carrier Gasket
614-822-108	Amalgamator Gasket
614-822-117	Cuvette

FP528

(See 628 Series, TruSpec Micro, FP528)

144 Series

Part No.	Location
616-068	Inner Combustion Tube
772-520	Reagent Tube
773-320	Reagent Tube
783-897	Outer Combustion Tube

632 Series, 628 S Module

Part No.	Location
606-333	Lance Tube (w/o Autoloader)
611-476	Inner Combustion Tube
611-477	Outer Combustion Tube
772-520	Reagent Tube/Particle Filter
773-320	Reagent Tube
625-401-301	Purge Tube (with Autoloader)
625-401-302	Lance (with Autoloader)

O-Rings

See individual consumable and spares reference cards for precise location of o-rings for most instruments. For exact o-ring sizes, please refer to the drawings on pages 19 and 20.

628 Series, TruSpec Micro, FP528

Part No.	Location
589-551	Sliding Block
601-442	Reduction Tube/Lance Tube
601-504	Loading Head
601-505	Load Head
601-684	Slide Block
601-939	Cylinder Block
612-340	Pre-Chiller
616-138	Secondary Furnace
617-136	Load Head
619-192	Lance Shield
625-602-297	Valve Stem (628 Series)
702-557	Secondary Furnace Mount
763-379	Condensing Block (TE Cooler)
765-976	Filter Tube
771-407	Load Head Plunger
772-269	Valve Stem (FP528)
772-520	Reagent Tube
772-738	Heater Assembly
772-910	Piston
773-913	Sample Block
774-253	Aliquot Manifold
774-425	Slide Block
776-017	Ballast Retainer Plate
778-116	Ballast Assembly
778-120	Gasket
780-831	Lance

TruMac Series

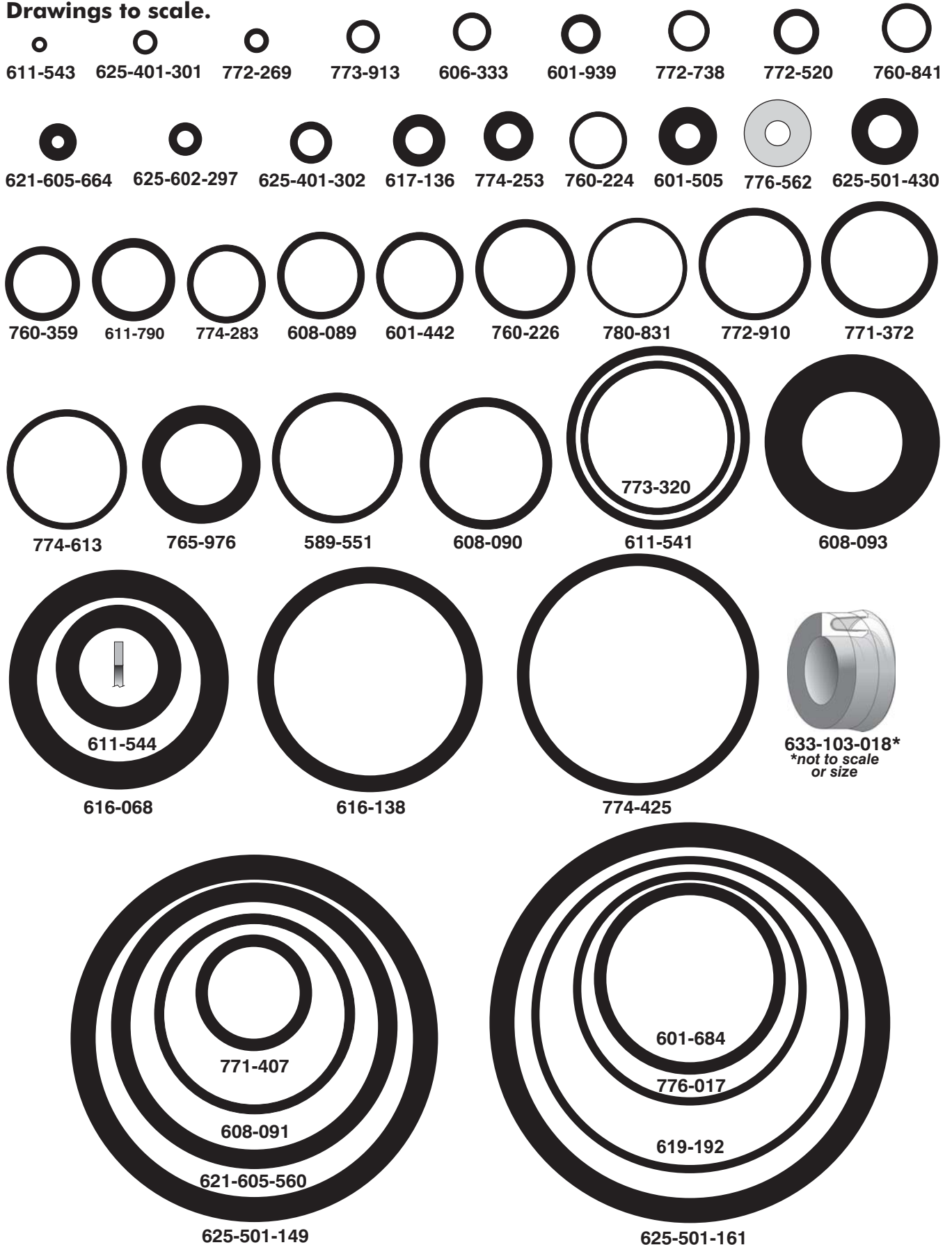
Part No.	Location
601-442	Loader Arm Assembly
608-089	Pinch Valve
611-476	Inner Combustion Tube
611-477	Outer Combustion Tube
612-340	Pre-Chiller
625-602-297	Doser Stem
625-602-319	Cup Seals (Purge Block)
633-103-018	Radial Seal (Loader Arm)
763-379	Condensing Block (TE Cooler)
772-520	Lance/Loader Arm Assembly/ Reagent Tube
760-226	Pinch Valve
774-613	Loader Arm Assembly
778-116	Ballast Piston
778-120	Gasket
805-481	Purge Block

TruSpec Micro O

Part No.	Location
589-551	Sliding Block
608-089	Inner Pyrolysis Tube
608-090	Outer Pyrolysis Tube
608-091	Outer Pyrolysis Tube
608-093	Interface Block
772-910	Piston
774-283	Cylinder
774-613	Cylinder

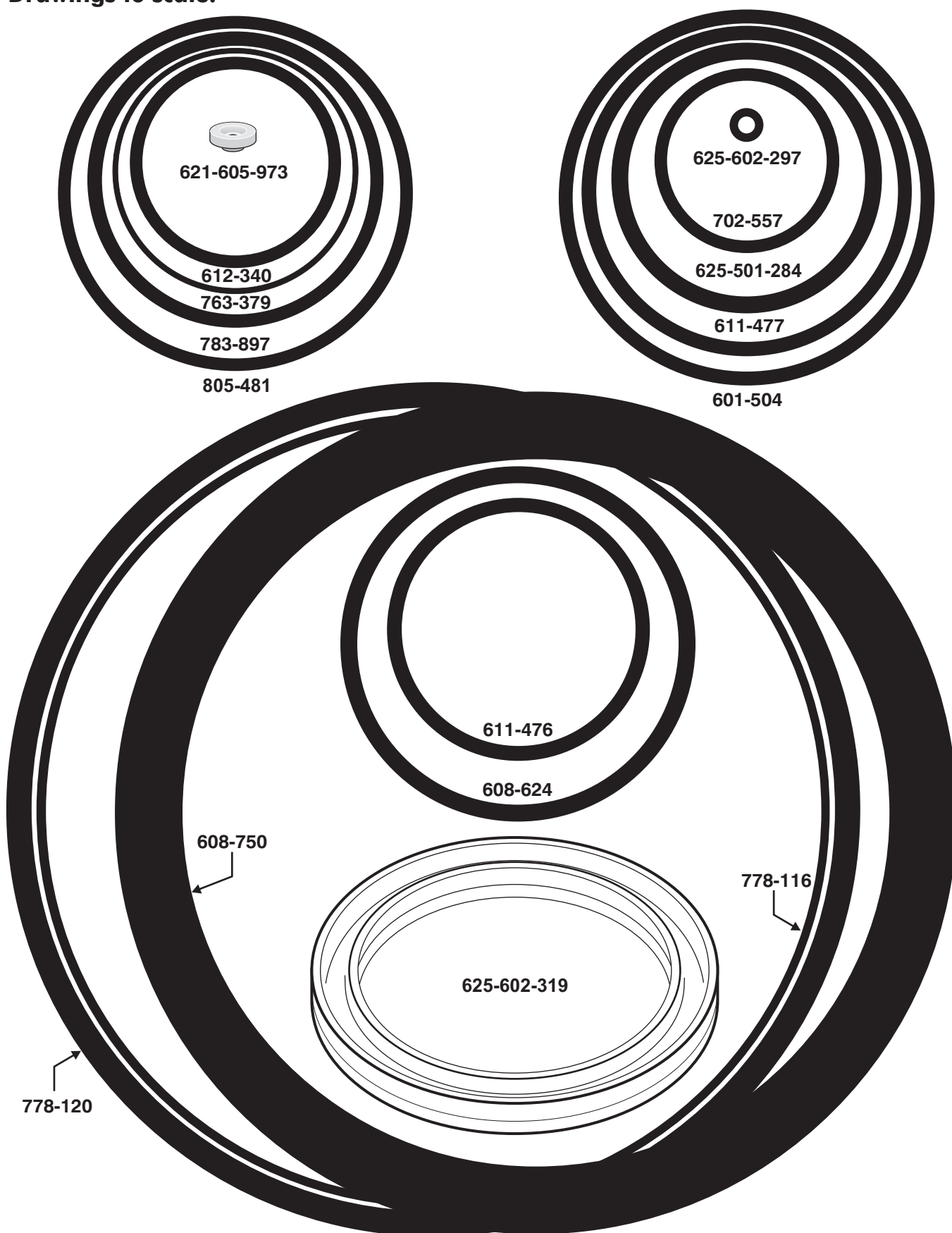
O-Rings

Drawings to scale.



O-Rings

Drawings to scale.



Miscellaneous Operating Accessories

Refer to page 24 for a visual reference of the miscellaneous operating accessories.

Ash Fusion Determinators

501-233-HAZ	Ceramic Aluminum Adhesive
502-010	Dextrin Solution
613-564	T-Clamp Expansion Tool
616-504	Filter (0.01 micron)
625-501-328	Replacement Heating Element Kit
625-501-361	Replacement Furnace Tube Kit
625-501-363	Ash Cone Tray Tool
625-501-431	Door Interlock Bypass Key
625-501-471	Test Pin Tray
633-101-441	Furnace Thermocouple
761-929	Tongs
776-957	Ash Cone Mold (ASTM 1857)
776-958	Spatula

Calorimeters

501-241	Vacuum Grease
502-051	Tweezers, Curved Fine Point
502-296	Filter, 100/pkg (AC500)
502-460	Fixed Wire Igniter, 5/pkg
502-461	Cotton Thread Fuse, 10 cm, 375/pkg
502-462	Fuse Wire, 10 cm, 375/pkg
601-980	Wash Bottle
608-671	Inline Filter (AC500)
621-322	Pellet Press
621-605-517	Vessel Lid Removal Tool (AC600)
621-605-744	AC600 Prep Station Flush Adapter
621-605-750	Vessel Tool Kit (AC600)
621-605-777	AC600 Wire Fuse Vessel Conversion
621-265	Cleaning Brush
621-657	Filter Cartridge, 1 micron (AC600)
633-101-923	Combustion Vessel Holder (AC600)
762-515	O-Ring Removal Tool
774-204	Stainless Steel Crucibles, 10/pkg
774-649	Crucible Cleaning Brush
776-978	Glass Scoop

Carbon/Hydrogen/Nitrogen/Sulfur/Oxygen Determinators

501-241	Silicone Grease
501-614	Spatula
502-023	Funnel
502-028	Tweezers, Straight
502-051	Tweezers, Curved
502-213	Leak Detection Solution
601-964	Crimping Pliers
601-982	Spatula
604-373	Small Sample Cup Holder
604-378	Tweezers, Curved
604-398	Large Sample Cup Holder
604-493	Cap Holder
608-135	Pyrolysis Tube Extractor Tool
616-152	Crucible Extractor
616-310	Vacuum Cleaner Attachment
625-602-470	C-Flex Replacement Assy. (TruMac and 628 Series)
775-306	10 mm Screen Filter
775-307	Filter Tool
778-321	Lance Extractor Tool
778-405	Sample Storage Block

Mercury Analyzers

614-822-101	Small Nickel Boat Loop
614-822-103	Beam Boat
614-822-104	Spoiler
614-822-107	Silicone Amalgamator Joint Tube
614-822-108	Amalgamator Gasket
614-822-109	Output Tube
614-822-110	Amalgamator
614-822-113	Large Boat Loop
614-822-121	Amalgamator Coil
614-822-129	Oxygen Needle Valve
614-822-190	Mercury Lamp

Miscellaneous Operating Accessories

Refer to page 24 for a visual reference of the miscellaneous operating accessories.

Nitrogen/Protein Determinators

501-241	Silicone Grease
501-614	Spatula
502-005	Brush
502-007	Tube Cleaner
502-023	Funnel
502-028	Tweezers, Straight
502-213	Leak Detection Solution
502-476	10 ml Vials for DI-PAL Liquid Autosampler/628 Series (100/pkg)
502-477	Screw Tops for 502-476 Vials (100/pkg)
503-032	Regular Glass Scoop
601-981	Wire Brush
603-350	O-ring Installation Tool
604-373	Small Sample Cup Holder
604-378	Tweezers, Curved
604-398	Sample Cup Holder
604-493	Cap Holder
609-170-110	Quik-Cap Capsule Sample Dispenser Includes: 502-338 Small Quik-Cap Capsules (400) 604-373 Small Sample Cup Holder for Balance 611-255 Plunger Assembly 609-172-020 Replacement Tubes (20)
611-844	Spatula (Macro)
616-152	Crucible Extractor Tool
619-180-110	Stackable Carousel Assembly (628 Series)
619-377	Bypass Plate (628 Series)
619-380	Vacuum Cleaner Attachment Assembly
619-591-699	0.1 Micron Filter (Disposable)
622-001-754	9 mm Septa for DI-PAL Liquid Autosampler (628 Series)
625-067-120	Heater Element Repair Kit (TruMac)
625-602-470	C-Flex Replacement Assy. (TruMac and 628 Series)
762-515	O-ring Removal Tool
775-306	Secondary Filter
775-307	Filter Tool
778-405	10-Sample Storage Block
801-076	Duckbill Check Valve for DI-PAL Liquid Autosampler (628 Series)

Proximate/Thermogravimetric Analyzers

502-628	Crucible Foil Liner (1200/pkg)
614-442-110	Large Crucible Turntable
621-361	~5 g Quartz Rod
761-929	Crucible Tongs
776-978	Glass Scoop
778-898	Crucible Cover Forceps

Miscellaneous Operating Accessories

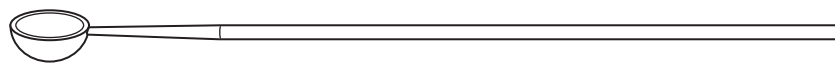
Refer to page 24 for a visual reference of the miscellaneous operating accessories.

Sulfur/Carbon Determinators

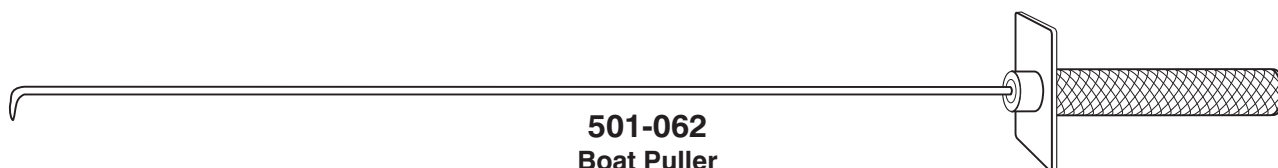
175-590	Diaphragm and Flapper Valve Kit
501-062	Boat Puller (632 Series)
501-241	Silicone Grease
501-614	Spatula
502-023	Funnel
503-032	Glass Scoop
606-316	Outlet Port Adapter
606-319	Cable, Wire Braid
606-320	Clamps
606-403	Adapter Brush
606-560	Hot Plate Tray
606-563	Hot Plate Tray Liner
606-601	Heating Element Set for 144 Series (1 set of 4)
613-563	Braided Cables (short strap) (144 Series)
613-564	Expansion Tool for Braided Cables
616-012	Front Flange
616-013	Compress Flange
616-063	Boat Puller (144 Series)
625-067-120	Heating Element Replacement Kit (632 Series, 628 S Module)
761-929	Crucible Tongs
768-980	Balston Filter
775-859	Cleaning Brush
776-978	Large Glass Scoop

Miscellaneous Operating Accessories

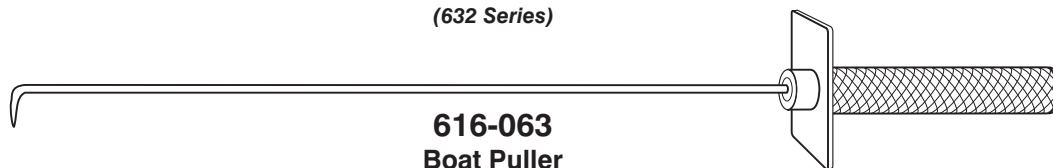
Most commonly used items represented.



776-978
Glass Scoop



501-062
Boat Puller
(632 Series)



616-063
Boat Puller
(144 Series only)



502-028
Straight Tweezers



503-032
Glass Scoop



502-051
Curved Tweezers



501-614
Spatula



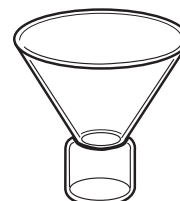
604-378
Curved Tweezers



601-982
Spatula



761-929
Crucible Tongs



502-023
Funnel



611-844
Spoon

Preventive Maintenance/Application Notes

Much like an automobile, routine checks and maintenance need to be performed regularly on your laboratory instrumentation to keep them in peak operating condition. That is why we have designed Preventive Maintenance Agreements (PMAs) for select LECO instrument models.

PMAs are a smart, convenient way to help you prevent unexpected downtime and associated costs. With LECO PMAs, trained LECO service specialists perform maintenance checks on your instrument (including cleanings and flow-path rebuilds) on a regularly scheduled basis. One, all-inclusive part number covering routine parts, labor, and travel can be easily purchased and renewed.

- Notes:
- Replacement parts and labor that may be necessary to repair an instrument are **not** included in this package.
 - PMAs conducted outside the continental United States will incur additional travel expenses.

Start maximizing your production today with PMAs from LECO. To receive a quote or for more detailed information, please call **269-982-5497**.

Organic Instruments	Part No.
AMA254 Mercury Analyzer (1 visit)	104-111
CHN/CN/FP628 Series (1 visit)	104-124-HAZ
CHN/CN/FP628 w/Sulfur Module Series (1 visit)	104-125-HAZ
FP528 Nitrogen/Protein Determinator (1 visit)	104-101-HAZ
SC144DR Sulfur/Carbon Determinator (1 visit)	104-110-HAZ
SC632 Sulfur/Carbon Determinator (1 visit)	104-121-HAZ
TFE2000 Total Fat/Oil Determinator (1 visit)	104-104
TruMac Nitrogen, Carbon/Nitrogen Determinator SN 4000 and below (1 visit)	104-123-HAZ
TruMac Nitrogen, Carbon/Nitrogen Determinator SN 4000 and above (1 visit)	104-126-HAZ
TruMac Carbon/Nitrogen/Sulfur, Nitrogen/Sulfur Determinator (1 visit)	104-127-HAZ
TruSpec® Series of Elemental Determinators (1 visit)	104-112-HAZ
TruSpec with Sulfur Module Add-On (1 visit)	104-122-HAZ

Application Notes

Register for free access to LECO's extensive library of application notes, journal articles, and other resources at www.leco.com/registration. To request an analytical application notes CD (209-050-069), complete the request form at www.leco.com/contact-us, or call us toll-free at 800-292-6141.

Maintenance Parts Kits

Maintenance Part Kits contain the parts necessary to conduct a maintenance overhaul of the respective instrument.

These kits contain everything from o-rings, replacement tubing and combustion tubes to filters, with the exception of higher-cost parts typically not replaced until a failure has occurred (furnace heating elements, for example). These kits come at a 10% discount when compared to purchasing the parts individually. Contact LECO (800-292-6141) for more information.

Part Number	Description
104-162	AMA254 Maintenance Parts Kit
104-168	CHN/CN/FP628 Maintenance Parts Kit
104-163	CHN/CN/FP628 w/External Sulfur Maintenance Parts Kit
104-169	FP528 Maintenance Parts Kit
104-170	S/C/SC144DR Maintenance Parts Kit
104-164	SC632 Maintenance Parts Kit
104-165	TruMac CN/N Maintenance Parts Kit
104-166	TruMac CNS/NS Maintenance Parts Kit
104-171	TruSpec CHN/CN/N Maintenance Parts Kit
104-167	TruSpec w/External Sulfur Maintenance Parts Kit

SmartLine Remote Diagnostics

SmartLine® Internet-Based Remote Diagnostics

SmartLine provides you with an online support connection between your instrument and LECO's Global Support Center, allowing trained service specialists to remotely operate your instrument as if they were right there with you.

How it Works

1. Simply call LECO's Global Support Center at 269-982-5497 during normal working hours to get your session code*
2. Log onto <http://rc.leco.com> and enter your session code
3. LECO accepts the connection. Your SmartLine session has begun!

**LECO's normal working hours are Monday through Friday, 8:00 a.m. to 5:00 p.m. EST. Additional sessions outside normal business hours can also be scheduled by appointment.*

Description	Part No.
SmartLine Start-Up (includes five hours of on-line support)	710-198-B/O
SmartLine Renewal (Five-hour time blocks, valid for one year from date of purchase)	710-199-B/O

To contact LECO regarding any service-related issue, call 269-982-5497.

Contact Information

United States

800-292-6141 • 269-985-5496
Fax: 269-982-8977

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800-268-0215 • 905-564-6577
Fax: 905-564-6582

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Fax: 269-983-3850

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www.lecoafrika.co.za

Hong Kong

LECO Instruments Hong Kong Ltd.
Kowloon, Hong Kong
Ph: 852-2387-7028
www.lecochina.com.cn

Russia

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<http://ru.leco-europe.com>

Argentina

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Ph: 54-114-523-8077
www.lecoarg.com.ar

Italy

LECO Italy S.R.L.
Milan, Italy
Ph: 39-02-953-43391
<http://it.leco-europe.com>

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Madrid, Spain
Ph: 3491-803-1250
<http://es.leco-europe.com>

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www.leco.com.au

Japan

LECO Japan Corporation
Tokyo, Japan
Ph: 813-6891-5800
www.leco.co.jp

Sweden

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Upplands Väsby, Sweden
Ph: 468-594-11000
<http://neu.leco-europe.com>

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LECO Instrumentos Ltda.
Rio De Janeiro, Brazil
Ph: 55-212-538-4250
www.lecobrasil.com.br

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Gyeonggi-Do, Korea
Ph: 82-31-478-2441
www.leco.co.kr

Taiwan

LECO Instruments Taiwan Ltd.
Taipei, Taiwan R.O.C.
Ph: 886-2-2518-4699
www.leco.com.tw

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LECO Instruments ULC
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Ph: 905-564-6577
www.leco.com

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LECO Instruments (M) Sdn. Bhd.
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www.leco.com.my

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LECO Instruments (Thailand) Ltd.
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www.lecochina.com.cn

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Ph: 52-81-83-49-3927
www.lecomexico.com

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Kiev, Ukraine
Ph: 380-44-494-1720
<http://ua.leco-europe.com>

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<http://ceu.leco-europe.com>

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Mönchengladbach, Germany
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<http://nl.leco-europe.com>

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LECO Polska Sp. z o.o.
Tichy, Poland
Ph: 48-32-2000-760
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Consumable Order Form

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To place an order, complete and fax to: 269-982-8977

Contact Name _____ LECO Acct No. _____
Phone _____ Fax _____ email _____
Ship To _____ Bill To _____

Method of Payment ☐ Tax Exempt ☐ Purchase Order (Number) _____
☐ Credit Card (Number) _____ Exp. Date _____
Name of Cardholder _____

Shipping ☐ Prepay & Charge ☐ COD
☐ Collect (if UPS or FED-X, your collect account number is required) _____

Freight Method ☐ UPS ☐ UPS Next Day ☐ UPS 2nd Day
☐ Other _____
☐ Ship Complete ☐ OK to ship partial

LECO Part No.	Description	Qty.	Price

☐ **Order Confirmation Requested**

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