



KRAISSL QUARTERLY

Published By

THE KRAISSL COMPANY

INCORPORATED

PUMPS-SEPARATORS-ENGINEERING EQUIPMENT

HACKENSACK, NEW JERSEY



Volume 31

January 1986

No. 1

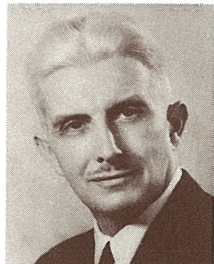
DEDICATION TO HIGH FRONTIER

FREDERICK KRAISSL, JR., PH.D., P.E.

Chairman & Chief Executive

Whether it is a tongue in cheek piousness or a desire to render us defenseless, it is a fact that there are those who oppose High Frontier.

That, of course, is what would be world conquerors want so they must be opposed by those of us who wish to have this country perpetuated.



*Consulting Engineer
Kraissl Associates*

Of all defensive strategies, High Frontier with current updating appears to be capable of

defending this country. It makes use of "of the shelf" technology with non-nuclear missiles which can destroy incoming intercontinental missiles before they reach this country and is one reason why they are being opposed by those who wish to render us defenseless.

One of the comments that should be made is that all senior employees of this country whether elected or appointed have declared under oath that they will provide for the common defense. During the interval governed by the MAD philosophy of Mutual Assured Destruction, it is difficult to understand how senators and congressmen could reconcile their declaration under oath to provide for the common defense with the philosophy of Mutual Assured Destruction. Now, of course, with S D I or High Frontier changing our philosophy to Mutual Assured Survival, they have no alternative but to make it work if they wish to be true to their commitment. The Bible can always be relied upon for identifying enemies of the people, "Beware of false prophets who come to you in sheep's clothing but inwardly are ravening wolves, by their fruits ye shall know them."

The Happy Advent of S D I gives moralists a justification for promoting it. There should be nobody who would hesitate to recommend a defense that

involves a shoot down of destructive missiles before they reach our shores.

The only people who would seemingly benefit from having us defenseless would be those who wished to conquer us. My ancestors fought in the war of the American Revolution to free us from despotic domination and I am convinced the majority of the people still wish to be free. I would think that anyone desiring to run for political office would want included in his or her record the fact that they did everything possible to promote S D I as they should have everything to gain and nothing to lose.

There is being formed a coalition for S D I and there are co-chairmen of both political parties taking a strong position in the matter. It is getting more like it used to be where whoever was elected we got a Patriotic American.

EDITORIALS

Our editors are the senior officers of this company and our policy permits each of us to express thoughts which we believe can be contributions to the voice of public opinion in business. It must be emphasized that the thoughts expressed are those of the author and not necessarily endorsed by the rest of the Board of Directors of this company. Kraissl Associates, acting in the capacity of consultants, handle the technical aspects of our public relations program.

We want this publication to be available when you are able to invite us to exchange current ideas, information and technical data without intrusion.

PUBLICITY FOR CUSTOMER PRODUCTS

We have long had a policy of showing pictures of machines, devices and installation, with short write ups where our products are used as components. This has varied from ships on which our separators have been used to pump and heater sets assembled by our customers. We are sure other customers will be glad to avail themselves of this publicity but we need time to use any material supplied.

BARRIER SEPARATORS

According to our definitions this includes both strainers and filters. We draw the line for convenience, between strainers and filters at perforated metal screens or the equivalent in coarse mesh. Usually the same housing can accommodate either strainer or filter inserts so that if an incorrect selection is made to meet an application, the insert or basket which is inconsequential in relative expense can be substituted.

Single separators can be selected if the process or application calls for intermittent service or inspection. When the application calls for continuous operation a duplex unit is needed so that one side can be serviced while the other is in operation.

There is a single separator available in each of our class separators and the bulletin that describes each class shows not only the characteristics of the single separator but in most cases the dimensions.

Since in most cases the single separator can be visualized as one side of a duplex unit this description emphasizes the duplex separators for comparison applications.

MULTI ELEMENT BASKETS

Basket strainers have been supplied from their inception with single element baskets but this does not take advantage of additional surface that can be offered by the greater separating area of multi element baskets.

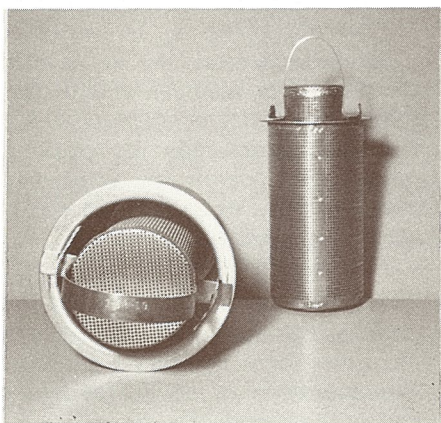
Basically the housing of a separator is merely an enclosure for holding a separating element in position so that it can separate undesirable extraneous matter from the fluid being conditioned which is generally a liquid but which can be a gas.

With due allowance for ample flow considerations, the more separating area that can be accommodated, the greater will be its separating efficiency. For example, our double element

baskets can provide between 30 to 50 percent greater separating area depending on screen open area than single element baskets of the same external dimensions. This permits a more compact and less costly unit than a similar separator of the same screen area limited to a single element insert.

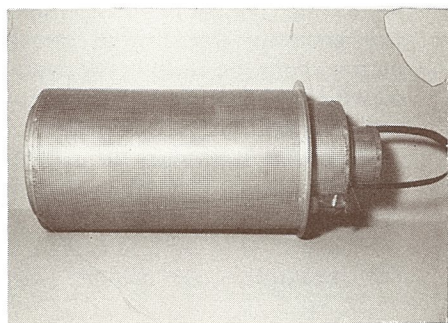
One of the considerations is how the double elements are secured and the photo shows our patented devices for holding the double element baskets together. When rotated in the opposite direction from closure they easily separate and it is our opinion that the elements can be more easily cleaned as the outside element has a port when the inner element is removed, through which the accumulated debris can be easily removed.

DOUBLE ELEMENT BASKET
U.S. PATENT No. 3,347,386

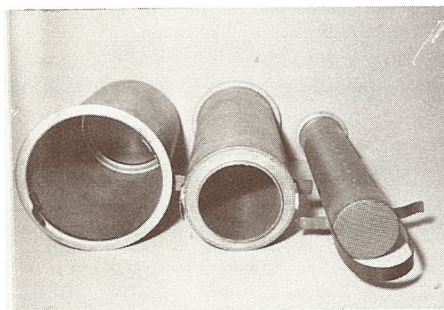


While most of our customers have found the separating area of our double element baskets more than adequate for most purposes, the larger size separators can also be supplied with triple element baskets. This, again, adds greatly to the separating area without increasing the size of the body or closure. In these days of competent engineering design it is important to take advantage of progress that has been provided.

TRIPLE ELEMENT BASKET
U.S. PATENT No. 3,347,386
SIDE VIEW



DISMANTLED



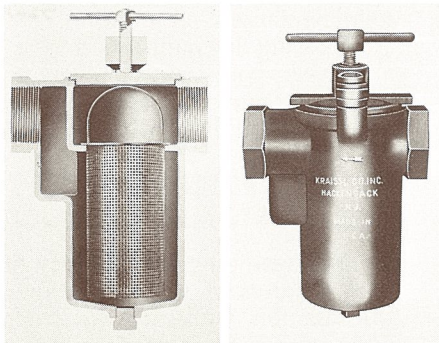
While few will argue with the historic value of paddle wheel steamers that used to ply the Mississippi River, there seems to be less of them being built in this modern generation, and the same might be true of single element separators. A triple element basket is also shown which has been designed for those who need additional separating area for the larger size units. There is a nice balance of consideration between the extraneous matter that must be separated, the liquid flow, the amount of debris per unit volume and the time it takes to clean the baskets.

It might be good thinking to have clean baskets available for all sizes used so that a clean basket could be immediately inserted and the dirty basket cleaned when convenient. Then duplex separators would reach their efficiency as down time would be reduced to a minimum.

SINGLE SEPARATORS

Our basic term of separators is our designation for both strainers and filters as the insert or basket becomes the barrier and in most cases the collector of separated debris.

Single separators are used when the process or procedure can be interrupted for cleaning and duplex units are mandatory when interruption is undesirable or in many cases unacceptable.



VARIETY OF DUPLEX SEPARATORS

The three piece design was the first of our duplex series and many customers prefer them. They have the

advantage that if a unit is accidentally dropped and a foot knocked off, the entire unit is not ruined or the foot can in many cases be welded by removing the side body without distorting the machine work on the valve center section which is the most expensive part.

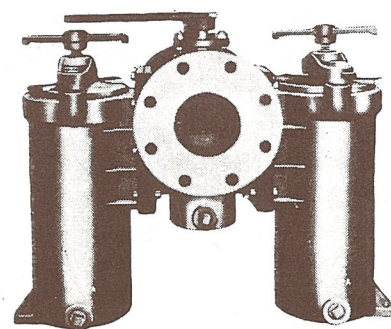
This design has also the advantage of reinforcement around the juncture of the side body and the valve center section, producing the effect of a high pressure auto clave. We use it on many of our higher pressure units and larger sizes in which cases there is many times a trade off between machining the components separately and our integral design with much greater unit weight during machining requiring the services of several individuals.

It also has the advantage of holding wall thickness as the cores are less complicated and can be better controlled by this simplification.

It is available in cast iron, bronze and cast steel, all tested in accordance with Underwriters requirements and for marine cooling water service the valve center section can be bronze and side bodies galvanized cast iron, reducing the cost of an all bronze unit with acceptable limited corrosion characteristics.

The three piece construction has all the advantages of the integral design with a great deal of versatility as the side bodies can be shortened or elongated with minimum expense if this is desirable.

CLASS 72A THREE PIECE DESIGN



CLASS 72 DUPLEX INTEGRAL DESIGN

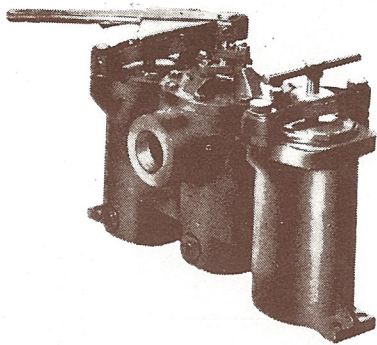
For standardized low cost applications, the integral design meets most requirements. The internal channels like the three piece construction hold pressure drop to a minimum by keeping each size consistent with the nominal pipe size.

The valve plugs, also like the three piece design are of an anti-wedging taper so that plug lifting devices are usually not necessary except for

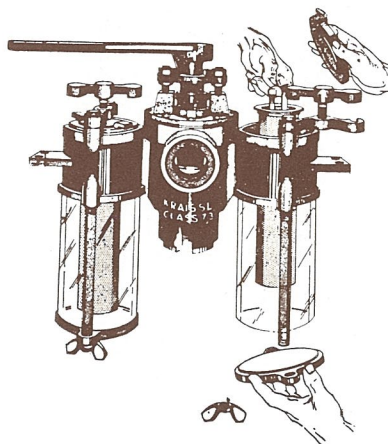
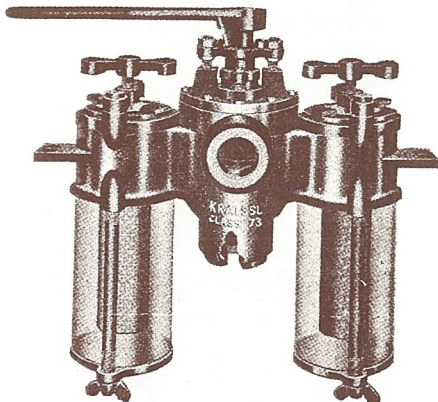
stainless steel construction and even this may be eliminated by specifying an integrated graphitized coating that minimizes galling or scoring when stainless elements operate with other steel components.

The integral duplex separators **our term for both strainers and filters** are available in usual metals with the cast iron intended for off the shelf delivery. During seasonal activity the demand for certain sizes may exhaust our stock but careful records of the most used sizes are being kept so that our authorized stock can be adjusted.

CLASS 72 INTEGRAL DESIGN



CLASS 73 SERIES DESIGN



CLASS 73 SERIES DESIGN

Our duplex separators with visible sumps were designed so that separated debris could be easily eliminated when accumulated.

It has been found that the best arrangement is with the side chambers in a vertical position like the rest of our line so that baskets can be easily removed when cleaning is necessary.

Brass has the components for self electrolysis, which mandates a bronze specification to avoid this possibility.

It has always been a source of wonder to us why Naval Architects do not specify salt resisting aluminum. The completed unit would be much lighter and we believe if manufactured in similar production quantities, much less costly.

CLASS 75 SERIES SEPARATORS

These are directed toward fuel conditioning requirements. Since diesel oil fueled motor cars as well as commercial vehicles are beginning to be generally employed, there is no question in our minds that there should be a filter on each vehicle to preclude a situation that happened to us.

The Class 75 series is a successor to our 72-72D where the gauge was on the side wall. This was difficult to see even with a flashlight, so we arranged that the whole sump could be visible. We tested both on the boat illustrated and could find no difference in performance so we obsoleted the former. It can be emphasized that the rat-trap partition in the bottom of the main body permits separated extraneous matter to go through but it appears that no matter how the boat is jostled by wave conditions the material separated out does not appear to contaminate the fuel.

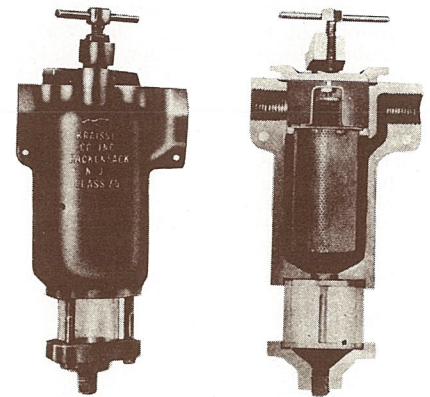


BOAT ON WHICH FILTERS WERE TESTED



CAR ON WHICH DIESEL FILTER IS BEING TESTED

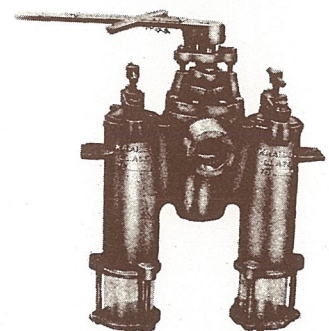
CLASS 75 SINGLE SEPARATORS



There is less likelihood of this occurring with vehicles operated on land although there might be a close approximation with the pot holes in some roads and of course with off the road recreational vehicles.

We found that deleterious water could be separated from gasoline by a 120 mesh insert and we are testing the pictured diesel engine driven car to determine the best mesh to suggest. The greatest problem is in cold weather when the viscosity of diesel oil increased making a too fine mesh undesirable. Additives that might damage or dissolve plastic parts are of no concern with our filters as all elements are of metal.

We also found that water in the diesel oil was not the only problem. We had the tank dropped to determine the amount of water that might be present and found little or no water but a large amount of debris and gunk that would be certain to jam the diesel jets. Since we only go for refueling to reputable sources we feel sure that if it could happen to us, it could happen to anybody. So, we have two extraneous materials to deal with, water and dirt from unknown sources. It seems that with the price of diesels far from inconsequential, it is good insurance to have a controllable filter when all that is necessary is to change the filter basket and we suggest the storage battery syringe method for eliminating the separated extraneous matter.



SALES REPRESENTATION

HOME OFFICE

We have reserved the areas of Connecticut, Metropolitan New York, including the Hudson Valley, Long Island, New Jersey and Eastern Pennsylvania less Philadelphia District for coverage by Kraissl Company personnel.

Northeast Region

Boston-Cooper Corp.
Manor Parkway
Salem Ind. Pkwy, Salem, N.H. 03079
Capt. C. V. Watson
Maiden Cove Lane
Cape Elizabeth, Maine 04107

Eastern Region

Filtration Unlimited
Buffalo & John Streets
Akron, N. Y. 14001
Jobe & Co., Inc.
1815 Edison Hwy.
Baltimore, Md. 21213
Daily Associates
8 E. Mt. Vernon Ave.
Haddonfield, N. J. 08033
Fluid Conditioning Equip. Co.
28 Van Tassel Lane
Ballston Spa, N. Y. 12020
R. C. White, Div. Weldment Corp.
P.O. Box 267
Bethel Park, Pa. 15102

Southeast Region

Power Equipment Co.
1307 West Main Main St.
Richmond, Va. 23201
Dillon Supply Company—Main Office
Box 1111, S. West Street
Raleigh, N. C. 27602
Dillon Supply Company
Durham, No. Carolina 27702
Dillon Supply Company
Rocky Mt., No. Carolina 27801
Dillon Supply Company
Goldsboro, No. Carolina 27530
Dillon Supply Company
Charlotte, No. Carolina 28201



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W. T. Meyer Co.
5800 Coach Gate Wynde
Louisville, KY. 40207
Spotswood Parker & Co.
721 Miami Cir. NE, Atlanta, Ga. 30324
Proctor-Himic Co., Inc.
P. O. Box 36279
Birmingham, Alabama 35226
R.A. Litkenhaus & Assoc., Inc.
P.O. Box 16323
7825 Baymeadows Way, Suite 106B
Jacksonville, Florida 32216
Phone: (904) 373-3536
Florida Filters, Inc.
P.O. Box 370985
Buena Vista Station
Miami, Florida 33137
Florida Filters, Inc.
223 S. 13th St.
Tampa, Florida 33602

North Central Region

Comb & Groves, Inc.
336 W. Eight Mile Rd.
Ferndale, Mich. 48220
Hetler Equipment Co.
P. O. Box 1904
Grand Rapids, Mich. 49501

Central Region

M. Huffman Sales Co.
3404 Upton Ave.
Toledo, Ohio 43613
Ambiatix Div. of above
P.O. Box 40381, Cleveland, Ohio
The Jordan Engineering Co.
P. O. Box 30017
Cincinnati, Ohio 45230
T. A. Heidenreich Co., Inc.
2525 E. 54th Street
Indianapolis, Ind. 46220
Tobra Engineering Co.
5438 Milwaukee Ave.
Chicago, Illinois 60630
A. K. Howell Co.
7603 Forsythe Ave.
St. Louis, Mo. 63105
Filtr Tech Systems
8535 Duluth St.
Golden Valley, MN 55427

South Central Region

Creole Engineering Co.
P.O. Box 23159, Harahan, La. 70183
Creole Engineering Co.
11724 Industriplex Blvd.
Baton Rouge, La. 70809

Jack Tyler Engineering Co.
6112 Patterson Ave.
Little Rock, Ark. 72209
Albert Sterling & Assoc., Inc.
5613 Winsome Lane
Houston, Texas 77057

Northwest Region

Baxter-Rutherford Inc.
P.O. Box 24324
911 South Homer Street
Seattle, Washington 98134

Western Region

Jay Besore & Assoc.
1690 Plymouth St.
Mountain View, Cal. 94043
Power Engineering Co.
P. O. Box 1777
Salt Lake City, Utah 84110
Killam Gas Burner Co.
1240 S. Bannock St.
Denver, Colorado 80223

Southwest Region

Wagner Hydraulic Equip. Co.
2089 Westwood Blvd.
Los Angeles, California 90025
Engineered Sales Company
5150 N. 16th Suite C-156
Phoenix, Arizona 85016
Phil-Lin Associates, Inc.
13344 Camino Del Norte
Albuquerque, New Mexico 87123

Canada—Ontario and Quebec Provinces

Kirk Equipment Ltd.
7435 Chester Ave., Suite 2
Montreal, Quebec, Canada H4V1M4
Kirk Equipment, Ltd.
1885 Wilson Ave., Suite 206
Weston, Toronto, Ontario, Canada M3H 1T9

Canada—British Columbia Province

Les Hall Filter Service Ltd.
346 E. Esplanade
North Vancouver, B.C. V7L 1A4

Canada—Alberta Province

H.F. Clarke Limited
5220-1A Street S. E.
Calgary, Alberta, Canada T2H 1J1

Hawaii

Foster Equipment Co.
P. O. Box 30188
Honolulu, Hawaii 96820

Mexico

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