



KRAISSL QUARTERLY

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THE KRAISSL COMPANY

INCORPORATED

PUMPS-SEPARATORS-ENGINEERING EQUIPMENT

HACKENSACK, NEW JERSEY



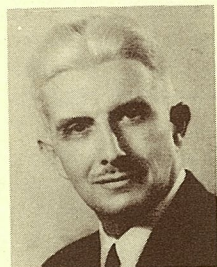
Volume 26

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OUR MOST IMPORTANT MINERAL

FREDERICK KRAISSL, JR. Ph.D., P.E.
Chairman
The Kraissl Company, Inc.



CONSULTING
ENGINEER
KRAISSL ASSOCIATES

It is not Gold or any of the precious metals. It is not Diamond or any of the Gem Minerals. It is not any of the essential mineral components of the body with the exception of water. **It is water, in my opinion.** Water answers all of the requirements of mineral composition. Pure water is H_2O , a definite chemical composition. It can be in gaseous

form which is steam and is so used in many industrial and heating installations. It crystallizes as ice at a definite temperature and to carry the matter a little further, it forms really beautiful crystals with a longevity of short duration in changing temperatures.

The reason I consider it our most important mineral is because life on this planet cannot exist without it for the shortest period. Oh yes!, there are other essential minerals of body composition but we can stand their loss longer than that of water.

If we agree that water is our number one essential mineral, just perhaps we will elevate it to a position where we will regard waste of water a very serious mistake, and pollution of a water supply as a very serious crime.

Probably the reason we have not given this matter the attention it deserves is because until recently it was considered that the supply was unlimited. We now know that the supply is not unlimited and that such circumstances as the Midwest dust bowl are not freaks of nature but can be brought on by over use and waste.

We have known that there are such things as aquifers which are underground reservoirs of ac-

cumulated water. Many aquifers are porous rock formations with underground waterways, varying from rivers and streams to tiny brooks. When these aquifers are fully charged, they overflow leading to such discharges as Deland Springs in Florida.

It has been stated that there is a large aquifer under the Pine Barrens in New Jersey. It is also stated that there is a large aquifer under the Florida Turnpike. The study of aquifers is more important than oil pools because of our greater dependence on water.

When aquifers are near coastal waters, it is essential that overuse be not permitted as salt water will invade to satisfy this deficiency. This, then, becomes both a political as well as a scientific matter. It is easy to make a statement that population densities should be studied from the standpoint of water supplies but, this seems the way to go in spite of the various obstacles that must be hurdled.

Fortunately, water supplies can be augmented other than by water that is mined. Possibly, the simplest is from our roofs when it really does rain. Cisterns were a way of life for many years and produce a supply of soft water in hard water country. Limestone water supplies usually produce hard water and cistern water is so close to distilled water that it can be used for many purposes where distilled water is specified. I have used water from roof supply during a rain by first permitting a sufficient interval to wash the roof before collecting the water which after filtering can be used for photographic processes and storage batteries. Certainly, cistern water is satisfactory for plant and garden use, since it is devoid of anti-bacteriological chemicals sometimes required in drinking water.

Distillation produces pure water from questionable sources. The only trouble is the cooling element to return the distilled steam to a liquid condition. If a consumer water supply is used, there is usually no conservation advantage. A cute trick used by desert travellers is to scoop a depression in the sand. Place a rock in the middle of a plastic sheet with a receptacle

underneath and place rocks all around the plastic sheet to position it. Usually there is enough condensation overnight to produce some water to sustain life but, not to take a bath. This condensation is explained by the ability of the atmosphere to collect moisture vapor under heated conditions and squeeze it out when the sun sets and the atmosphere cools down. Whether there is anything here to learn on a larger scale is worth consideration. Where cisterns are provided, water so obtained could be channelled into them. It has been known for a long time that cistern water must be relied upon in certain areas for all purposes even to the extent that goldfish are added to keep mosquito larvae in check. However, I would not relish this supply for potable purposes without anti-bacteriological treatment. One of the most intriguing of such procedures is ultra-violet treatment. This should not add any taste and after suitable filtration to take care of sediment, could produce a satisfactory source.

A comparatively recent approach for desalination of backish waters is by selective dialysis. In such processes desalinated water is separated from the saline matrix and retained. This is a study in itself, as there are a number of parameters that must be considered, such as how much salinity is permissible in the desired effluent.

Where unlimited cooling water is available at coastal sites, with sea water, distillation as previously mentioned should be a consideration. Then economics enters in such as the cost of the power involved.

The reason for this discussion is to get engineers oriented to the necessity of giving adequate water supply consideration as a priority matter and some possible alternatives to water from water mains of public supply systems. It is quite possible that in sun belt areas, distillation of sea water could be carried on in large quantities by concentrating heat from the sun and cooling water from the sea at economically acceptable costs.

It is also possible to make studies of using air cooling to condense steam in inland areas where cooling water is not available. Such studies by government

authorized agencies would seem to have more justification than some which might qualify for the golden fleece or already have.

THE ART OF RELAXING

There is no question that this is a worrisome world with problems varying from subversion of our country's interests to those of the mechanics of our profession.

The important thing is to approach all matters from the standpoint of improving any situation on which we can have a decisive effect, make the decision and pass on to the next without scourging ourselves with negative thoughts of whether we made correct decisions. In most cases, the decisions made will require a certain amount of time to determine their effectiveness. In the meantime, this is the opportunity for relaxation. The thinking should be that everything was done to give consideration to all factors when the decisions were made and enough time should elapse to determine whether they met the requirements.

Two physiological factors should be given consideration so that relaxation is possible. In my opinion, planning, is a positive action whereas worry is negative. Planning is constructive, worry is destructive. It should be remembered that character formation is the purpose of living. Everything we do or say and experiences we have, become part of our character, in my opinion, is the only thing we take with us when we leave this world. It is the record of how we met the problems and experiences that confronted us. This is the reason the old time farmer behind the plow could develop a good or better character than the most educated and erudite scientist in the University. It may be recalled the admonition "Get wisdom but with all the getting, get understanding." This, of course, is subject to interpretation, but mine is that wisdom is knowledge and understanding is how we apply our knowledge hopefully for the benefit of mankind.

We have all known people who have great knowledge but cannot get along with motivated people. This to my mind is a good example of lack of understanding. There, are of course, people who are menaces to all right thinking individuals. It is part of understanding to know what should be done with them and minimize the opportunity for them to do damage to the rest.

But it is not part of good judgement to accept more problems than can be reasonably performed without collapse. Almost anything can be stressed beyond the breaking point. It is not

good judgement to even come close to this situation and can be precluded by relaxation. The first step toward relaxation is laughter. Learn to acquire good jokes and how to tell them. They should be fit for mixed company and minimize the disparagement of any present. A good all around laugh dispels tension. Relief from tension puts all on the way to relaxation without in any way detracting from the main objective.

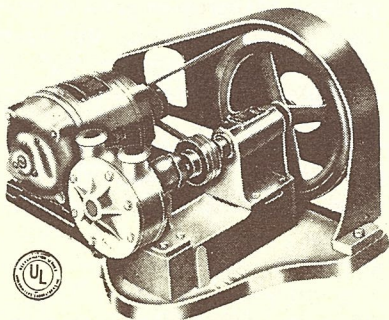
The next step toward a relaxed condition is to seriously appraise ourselves as possibly not being the possessors of the complete or best answers to all problems. This makes room for the opinions of others and immediately receives appreciation that modesty and consideration attract. This is not to say that weakness should be tolerated or positive direction should be renounced, but before the decision is made an opportunity to listen to opinions of others who are competent should be provided.

Where the prerogative of leading others is involved it should be remembered that there are many levels of intelligent functioning. Motivation should be the sought for characteristic. It has always been my opinion that where motivation is in the desired direction the individual can be trained and upgraded.

Rest must be part of relaxation and exercise when possible should be part of a periodic and sustained program, but the remark of a famous humorist should not go unheeded that he took his exercise by being a pallbearer for friends who like exercise.

Temperance in all things is the admonition to be followed, cultivated and a well balanced personality can result that will be acceptable and welcomed wherever one goes.

CHECKING OUT OIL BURNING SYSTEMS



CLASS 60 REDUCTION DRIVE OIL PUMPS

It is a good idea as the summer months wane to use this opportunity to check oil burner systems.

As most people know, our Class 60 series Reduction Drive Pumps are the best choice for both light and heavy oil. The reason is that they can be run at a speed consistent with the requirement; as a general rule pumps for light oil can be run at a speed that will supply oil at the required pressure to meet burner needs; pumps for heavy oil usually are run at speeds to provide an over supply to permit sufficient recirculation to keep heavy oil from stratification.

All this can be accomplished by using pulleys on the reduction drive to produce the required pump speed. One of the dividends of pumps driven by reduction drive is that they usually are run at slower speeds than those driven direct connected to motor. This pays off by greater longevity of the pump. If and when it does wear out, it is usually only necessary to replace the pump head, as the ball bearing transmission support, if properly lubricated, can be operational for many years of service.

Another dividend of the reduction drive pump is the saving in electrical energy. With direct motor connected pumps, a choice must be made of motor speeds. The least expensive is the 1800 RPM motor. The next is the 1200 RPM motor and anything slower than this is usually prohibitive in cost. With our Class 60 series pumps direct connected to **reduction drive** through loose coupling the pump runs at the selected speed to meet capacity requirements. With the direct motor driven pump the speed must be the motor speed. It is mandatory that the fuel oil be in sufficient supply to meet needs under the greatest demand. Consequently it is usually necessary to use a pump much over capacity to reconcile with the available motor speed. The power factors of most motors are sufficiently close so that even when motors are run less than full horsepower ratings, the energy drawn will be much less than at full load so, in general, if a motor is over capacity for a job, the electric energy drawn will be less than indicated on the name plate.

A third and most important advantage of our reduction drive pumps, is the fact that they can be changed from light oil pumps to heavy oil pumps merely by changing the pulleys of the reduction drive. Over a period of many years operational service, it has been found that a pump speed of 400 RPM is a good compromise for the viscosity of heavy oil both for starting up and continuous operation when the heaters begin functioning. With oil conservation, it should be remembered that heavy oil, known as Bunker C or #6 is what is left when the higher or more volatile fractions are distilled out.

Something must be done with it and one of the best methods of disposal is to burn it. Many of the reduction drive pumps were sold for heavy oil application.

If you converted these pumps to light oil service and have saved your former pulleys, it is not much of a chore to convert back should you wish to do this. In any event it is suggested that you check out your customers' requirements now and not wait for the rush as we near the heating season.

STRAINERS—FILTERS—BARRIER SEPARATORS

As most of our customers know we like the term barrier separators for our Class 72 series. This is due to the fact that in the majority of cases the changing of the basket or insert can convert a strainer to a filter or a filter to a strainer.

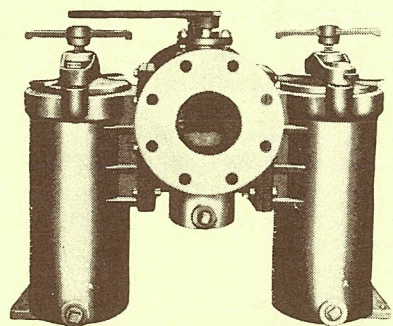
We probably have as large or larger line of this design than anyone in the field as can be judged by our demand and we hope that we can keep on growing so that you will look to us to supply your needs.

Now is the time to evaluate fuel oil burning systems and it is generally agreed that there is enough extraneous matter in fuel oil to require both suction and discharge strainers.

THREE DISTINCT DESIGNS OF KRAISSL SEPARATORS

Our separators come in three distinct designs in the duplex series. The class 72A is the three piece construction designation and was the first of our series on the market. To make it as compact as possible the flanges which match up with the side bodies are rectangular. The design minimizes core shifts and consequently provides very uniform wall thickness. Furthermore the rectangular ports for the side bodies provide reinforcement characteristic of a high pressure autoclave and some of our high pressure models use this construction. This series is of course underwriter listed. As foundries became more experienced in casting our designs, it was possible to bring out our class 72 Integral series, for most of the standard pressure series and some of the high pressure line. These designs must meet Underwriter requirements with a large safety factor and as the sizes go up, there is a trade off between the integral construction and the three piece design. we attempt to suggest the design that seems best for the application. Since there is an overlap, we consider the integral and three piece construction a related series.

All three classes can be supplied in cast iron, bronze, steel and other metals although cast iron is stock authorized for most used sizes but this can change, depending on customer requirements, so please call us when in the market. We may have an over-run even on non stock items as it is our desire to complete orders when required so sometimes castings are ordered to cover possible rejections.



CLASS 72 INDUSTRIAL DUPLEX STRAINERS

BULLETINS A1430, A1431, A1879

DUPLEX SEPARATORS - SIZES AND DIMENSIONS
DIMENSIONS ARE IN INCHES AND SUBJECT TO CASTING VARIATIONS.

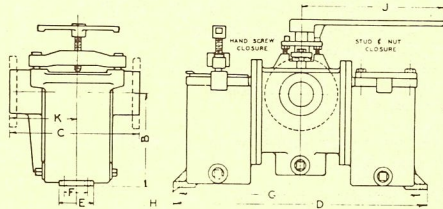
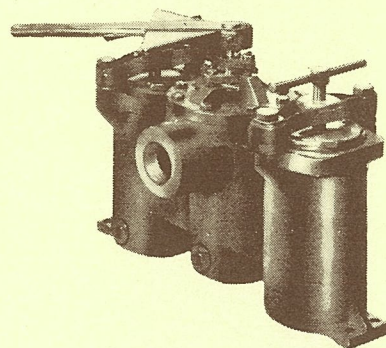


TABLE OF DIMENSIONS

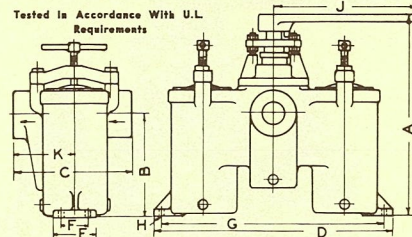
HAND CLAMP CLOSURE MAX. WP. 125 PSIG.			STUD AND NUT CLOSURE			TYPE			A B C D E F G H J K			
CAT. NO.	PORT	MAX. WP.	CAT. NO.	PORT	MAX. WP.	SIZE	1	2	3	4	5	6
72-31A	Standard	400	72-31A	Standard	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31B	Standard	400	72-31B	Standard	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31C	125" ASA Eng.	400	72-31C	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31D	125" ASA Eng.	400	72-31D	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31E	125" ASA Eng.	400	72-31E	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31F	125" ASA Eng.	400	72-31F	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31G	125" ASA Eng.	400	72-31G	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31H	125" ASA Eng.	400	72-31H	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31I	125" ASA Eng.	400	72-31I	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31J	125" ASA Eng.	400	72-31J	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31K	125" ASA Eng.	400	72-31K	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31L	125" ASA Eng.	400	72-31L	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31M	125" ASA Eng.	400	72-31M	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31N	125" ASA Eng.	400	72-31N	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31O	125" ASA Eng.	400	72-31O	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31P	125" ASA Eng.	400	72-31P	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31Q	125" ASA Eng.	400	72-31Q	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31R	125" ASA Eng.	400	72-31R	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31S	125" ASA Eng.	400	72-31S	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31T	125" ASA Eng.	400	72-31T	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31U	125" ASA Eng.	400	72-31U	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31V	125" ASA Eng.	400	72-31V	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31W	125" ASA Eng.	400	72-31W	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31X	125" ASA Eng.	400	72-31X	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31Y	125" ASA Eng.	400	72-31Y	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
72-31Z	125" ASA Eng.	400	72-31Z	125" ASA Eng.	400	Standard	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"

Not listed by Underwriters' Labs. Inc.

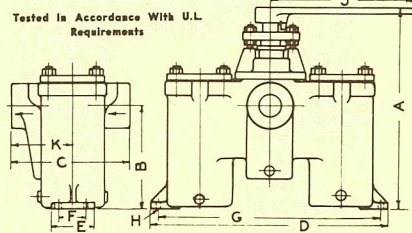


CLASS 72 INTEGRAL DUPLEX SEPARATORS
BULLETIN A1430 A3054 A2211

SIZES, RATINGS, AND DIMENSIONS STANDARD PRESSURE SERIES FOR MAXIMUM WORKING PRESSURES TO 125 PSIG.



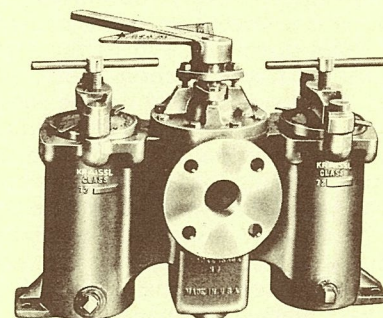
HIGH PRESSURE SERIES Designated by suffix letter H FOR MAXIMUM WORKING PRESSURES TO 400 PSIG.



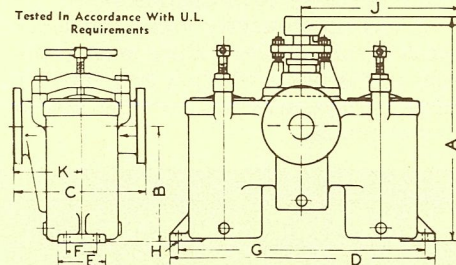
OUTLINE DIMENSIONS

CAT. NO.	TYPE	PORT	MAX. WP.	A	B	C	D	E	F	G	H	J	K
72-31	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-31H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-32	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-32H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-33	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-33H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-34	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-34H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-35	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-35H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-36	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-36H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-37	2	115	125	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-37H	2	115	400	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-38	2	115	125	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-38H	2	115	400	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16

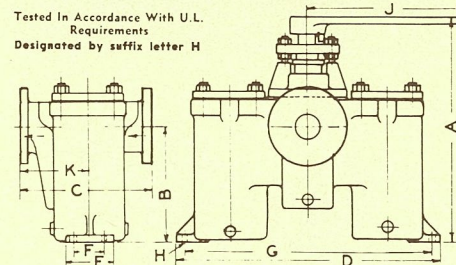
Dimensions are in inches and subject to casting and production variations.



STANDARD PRESSURE SERIES FOR MAXIMUM WORKING PRESSURES TO 125 PSIG.



HIGH PRESSURE SERIES FOR MAXIMUM WORKING PRESSURES TO 400 PSIG.



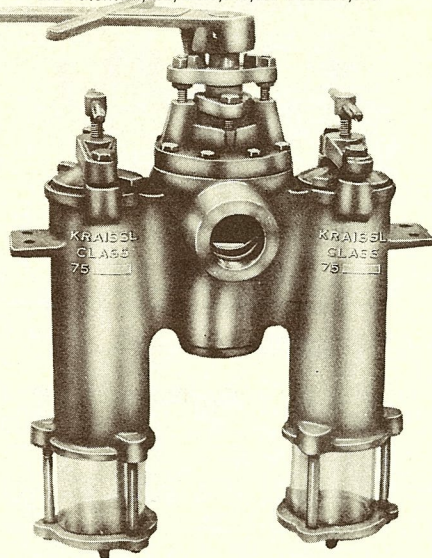
OUTLINE DIMENSIONS

CAT. NO.	TYPE	PORT	MAX. WP.	A	B	C	D	E	F	G	H	J	K
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72-31H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-32	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-32H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-33	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-33H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-34	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-34H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-35	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-35H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-36	1	42	125	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-36H	1	42	400	12-1/4	5-5/8	6-3/4	14-1/2	2-3/4	1-3/4	13-1/2	7-7/8	12-1/8	3-5/8
72-37	2	115	125	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-37H	2	115	400	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-38	2	115	125	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16
72-38H	2	115	400	14-1/4	7-7/8	10-5/8	20-1/2	3	1-7/8	18-1/2	9-1/8	12-1/8	5-9/16

Dimensions are in inches and subject to casting and production variations.

CLASS 75 SERIES SEPARATORS

U.S. Patents 2,982,413 3,348,687 Des 200,340



Many years ago we found that in the presence of an excess of the hydrocarbon fuel, that 120 mesh screen would separate water from gasoline. This resulted in our Class 72-70 series separators superseded by our Class 75 general series.

This requires reverse flow where the material is collected outside the screen and slides down the wall of the sump into the rat trap collection cavity. The Class 72-70 series relied on the spring tension of the basket handle to hold the separating unit on the seat. We developed a spring loaded patented hold down mechanism with adjustable tension that should insure closure against ordinary pressure drop requirements but could relieve against overloads to preclude element damage. This is of particular importance with duplex units where one side can be serviced while the other is in operation.

It was subsequently found that a 200 mesh screen would reduce water content to the point where it may have no disadvantageous effect on diesel engine performance.

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

R. C. White Co.
3065 Enterprise Blvd.
Bethel Park, Pa. 15102

Southeast Region

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Richmond, Va. 23201
Dillon Supply Company — Main Office
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
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Charlotte, No. Carolina 28201

Boiler Supply Company, Inc.
490 Craighead Street
Nashville, Tenn. 37204
601 Van St., N. W.
Knoxville, Tenn. 37921

Applied Engineering Co., Inc.
P. O. Box 506, Orangeburg, S. C. 29115

R. A. Litkenhaus & Assoc. Inc.
P. O. Box 16323
7825 Baymeadows Way, Suite 106E
Jacksonville, Florida 32216
Phone: (904) 737-3536

Spotswood Parker & Co.
721 Miami Cir. NE, Atlanta, Ga. 30324

Procter & Co.
Box 26158
Birmingham, Ala. 35226

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Ferndale, Mich. 48220

Hetler Equipment Co.
P. O. Box 1904
Grand Rapids, Mich. 49501

Central Region

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Toledo, Ohio 43613

W. G. Taylor Co.
1900 Euclid Bldg., Cleveland, Ohio 44115

The Jordan Engineering Co.
P. O. Box 30071
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
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St. Louis, Mo. 63124

South Central Region

Creole Engineering Co.
P. O. Box 23159, Harahan, La. 70183

Jack Tyler Engineering Co.
6112 Patterson Ave.
Little Rock, Ark. 72209

Albert Sterling & Assoc., Inc.
P. O. Box 66099, Houston, Texas 77006

Northwest Region

Baxter-Rutherford, Inc.
P. O. Box 24324 Terminal Annex
Seattle, Washington 98134

Western Region

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1690 Plymouth St.
Mountain View, Cal. 94043

Power Engineering Co.
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Salt Lake City, Utah 84110

Killam Gas Burner Co.
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Los Angeles, California 90025

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Phoenix, Arizona 85016

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Montreal, Quebec, Canada H4V1M4

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K. C. Hamilton Equip. Ltd. — Marine

Canada—British Columbia Province

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

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H. F. Clarke Limited
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Calgary, Alberta, Canada

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