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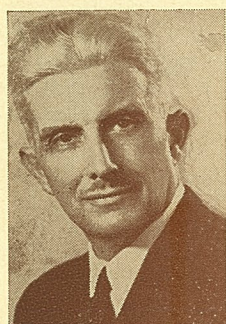
APRIL 1961

Number 2

## ARE WE UPGRADING AMERICAN CITIZENS?

FREDERICK KRAISSL, JR., P. E., President  
THE KRAISSL COMPANY, INC.

In our frantic and sometimes adolescent attempts to convince the rest of the world of our sincerity in behalf of democracy, it might pay us to pause



and review the course that we have taken and the results obtained to determine whether the gains we may have made internationally have been worth the price nationally in terms of the quality of American citizens. It has been said that charity begins at home, and if we will look further we should agree that "Everything begins at home". The home is where we all start. The American Home of the past seems to me to account for the high characters of our forefathers. If we concur, we should ask ourselves whether we believe that the standards of character in the average American Home have deteriorated by comparison with past standards. Let us all agree that while humans are prone to err, if the standards have been lowered the product cannot help but be lowered in quality. This point can be proven by any inspection system that is applied to any product animate or inanimate.

A precept that has guided me stems from a statement credited to former President Herbert C. Hoover. He is reported to have remarked to the effect that too much had been said in behalf of the "Common Man", and went on to say that he was more interested in the "Uncommon Man", the man that raised himself above the common level. He further drove home the point that the word "Common" meant, at best, "Ordinary" and at worst, "Inferior, Coarse with a connotation of Vulgarity. Is this the type of standard we are using in evaluating Americans? It seems to me that the capability of the common or average student and the common or average man is the capability status that is being catered to in

striving for what we term, equality. In my opinion, there should be no standard of equality set up, except equality of opportunity and the rights of individuals. The Constitution states that we are all created equal, but from the time of birth differences appear in individuals and every honest observer will agree that there are differences in quality between many individuals brought up in the same home under as near as humanly possible identical conditions.

If we insist that all individuals be equal in all respects, we must downgrade high type individuals to the lowest Spiritual, Social, Moral, Intellectual and Economic level of the Common Man. If we limit the achievement of Equality to equal rights and opportunity and stop glorifying the Common Man, we may be able to change current trends before we find that American Citizens have deteriorated in quality below the level of foreign competition.

Many believe that the best is none too good whether we are considering individuals or a product for a specific service. If we can agree that we cannot lift ourselves by our own boot straps any more than water can run up hill by itself, we have conditioned ourselves to set up unattainably high standards in the image of our creator, which in my opinion is the only way that humanity can be upgraded.

## EDITORIAL OPINIONS

Our editors are the senior officers of the company and this is the opportunity for each of us to express thoughts which we believe can be stated to advantage. It must be emphasized that the opinions expressed are those of the author and not necessarily endorsed by the rest, or the Board of Directors of this Company.

Frederick Kraissl, Jr., P.E.	Editor
L. E. Mills	Associate Editor
A. J. Walter, Jr.	Associate Editor
Robert C. Michel, P.E.	Associate Editor
Alice L. Kraissl	Associate Editor

## EXECUTIVE SACRIFICE

Have you ever stopped to consider that those persons who have attained the highest positions in life—in business, professions or government, have probably had to make sacrifice of being lonely? The top executive of a large corporation, the world famous surgeon, the Nobel Prize winning scientist, the President of our Country or the Monarch of Another, hold positions which incite the envy, admiration and perhaps ambitions of many but by their very nature must result in a large measure of loneliness.



ALICE L. KRAISSL  
Treasurer

Of course, loneliness is a very personal matter. Some may find all their needs satisfied by contact with a very limited number of people outside of their immediate family. Others, more gregarious, desire wider opportunities for meeting and knowing their fellow men. Almost everyone whether in an exalted status or lesser position, I believe, has the desire to be liked and accepted by those in their sphere of contact. Those holding "Summit" Assignments, in any field, must be eternally on watch against any action on their part that might be construed as favoritism and by the same token must be wary of permitting any close associations that might open the way to a request for favors which if granted might not be to the best interests of the cause served. While preserving an air of apparent friendliness and cordiality, there must always be a certain reserve that holds proffered friendships at arms length. This may come easily to some, but there must be others who envy the opportunities of the majority to make acquaintances at will and to choose friends without thought of their possible ulterior motives.

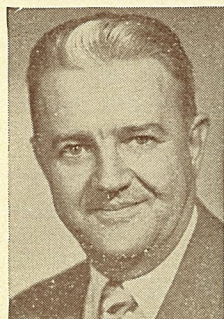
Any situation which sets a person aside from the usual channels of life, erecting barriers between them and freedom of choice is a sort of incarceration. The Queen does not have the opportunity of indulging in the very feminine pursuit of unrestrained shop-



ping. The President and his family may never move without being under the watchful surveillance of the Secret Service. We have heard of an industrial giant whose home is a pent house with bullet proof windows and steel doors. There are many degrees of isolation depending on the importance of the individual but surely those "at the top" who must always consider the motives of others, are the world's lonely ones.

## PERSONALS

At the organization meeting of The Kraissl Company, Inc., provision was



LELAND E. MILLS  
Vice President

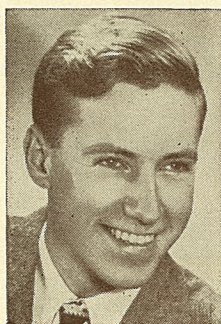
made for the office of Executive Vice President and Leland E. Mills was appointed to this office. Mr. Mills has served for a longer period of time with the company than any other employee with the exception of the two founders, having joined the company in 1929. During the earlier years he participated in design work on many Kraissl Products but early recognized the importance of the proper application of our designs to become an integral part of the machines, systems and installations of our customers. He has served as Vice President in charge of sales in the Metropolitan District, for many years which is still his main interest. He participated in the reorganization of a subsidiary manufacturing company and during World War II was resident manager while the senior founder was on duty in the U. S. Army. There is very little about the Kraissl line of equipment with which Mr. Mills has not had very close contact.

At the same meeting Mrs. Jennie L. Budin was elected Assistant Secretary and Assistant Treasurer and given more responsibility in handling the affairs of the Finance Division. She assists Mrs. Kraissl in this activity with the cumulative experience gained since she joined the company in 1941.

It is always nice to have people like us so well that they are willing to forgo the advantages of retirement to rejoin the team. Most of our local customers know that Mrs. Helen I. Morgan has rejoined our staff as Office Manager and was elected Assistant Secretary. Even during her period of retirement she gave us a hand when we became overloaded and we are glad to have her back with us.

## EXAMPLES OF PRESSURE LOSS ESTIMATION

There appeared in the last issue of Kraissl Quarterly (Jan. 1961) excerpts



R. C. MICHEL, P.E.  
Vice-President

from my personal notebook in the article entitled "Estimating Pressure Loss in Pipes". Space did not permit the inclusion of examples on the use of the formulas and tables presented. Here are two examples. Please refer to the previous article for formulas, data and nomenclature:

### Example No. 1:

What is the pressure loss in a section of piping which is comprised of 100 ft. of 2" pipe, three 2" els and a 2" duplex strainer, when passing 60 gpm of clean, cold water?

First calculate flow velocity:

$$V = .321 Q/A = (.321)(60)/(3.36) = 5.73 \text{ ft./sec.}$$

Then calculate Reynold's number:

$$N_{RE} = 930 DV/\eta = (930)(2) \cdot (5.73)/(12)(.01) = 89,000$$

Since the Reynold's number is greater than 2000, the flow is known to be turbulent and the friction factor (f) from the table is about .0055 (nearest tabulated value).

$$L/D \text{ of the straight pipe is } (100)(12)/2 = 600$$

$$L/D \text{ of the three 2" } 90^\circ \text{ els is } 3(30) = 90 \text{ from fitting table.}$$

$$L/D \text{ of 2" duplex strainer is } 500 \text{ (Max.) from fitting table.}$$

$$\text{Total } L/D \text{ of system is } 600 + 90 + 500 = 1190 \text{ (Max.)}$$

Finally, calculate pressure loss:

$$p = .027 f SV^2 L/D = (.027)(.0055)(1)(5.73)^2(1190) = 5.8 \text{ psig (Max.)}$$

### Example No. 2:

A No. 6 fuel oil suction line is to be sized for handling 250 gph of 2000 SSU and .96 specific gravity oil at pumping temperature. Four 90° els and a duplex strainer plus 50 ft. of pipe are required.

What size pipe, strainer and fittings should be used so as not to exceed a total initial friction loss of 2 psi?

First assume the flow to be laminar and therefore  $f = 16/N_{RE} = 16\eta/930DV$

From the viscosity table, stokes  $\eta = 4.4$  for 2000 SSU

Substitution reveals:

$$f = 16(4.4)/930 DV = .0756/DV$$

$$L = \text{pipe length} + \text{equivalent length of els} + \text{equiv. length of strainer} = 50 + 4(30)D + 300D = 50 + 420D$$

$$Q = 250 \text{ gph} = 4.16 \text{ gpm}$$

$$V = .321 Q/A = (.321)(4.16)/A = 1.33/A$$

$$p = 2 = .027f SV^2 L/D = .027(.0756)(.96)(1.33)(50 + 420D)/D^2 A$$

$$p = 2 = (.131 + 1.10D)/D^2 A; 2D^2 A = 1.10D + .131;$$

$$D^2 A = .55D = .0655; D(DA - .55) = .0655$$

The solution of the problem can now proceed either by trial and error or by a graphical plot of  $D(DA - .55) = .0655$  and a second plot on the same graph of  $D$  vs.  $A$  from the pipe table.

The intersection of the two curves is the solution.

Here I will choose the first procedure.

Assume 2" pipe.  $D = 2/12 = .167$  ft. From table  $A = 3.36$ ;  $.167[.167(3.36) - .55] = .167(.011) = .00184$  which is less than .0655.

Now try 2½" pipe:  $D = 2.5/12 = .208$  ft. From table  $A = 4.78$ ;  $.208[.208(4.78) - .55] = .208(.445) = .0926$  which is greater than .0655

The true answer lies between the 2 and 2½" sizes.

The assumption of laminar flow must now be checked.

The Reynold's number,  $N_{RE} = 930 DV/\eta$  must be less than 2000 for this assumption to be true.

For the 2" size:

$$V = 1.33/A = 1.33/3.36 = .396 \text{ ft./sec.}$$

$$N_{RE} = (930)(2)(.396)/(12)(4.4) = 13.9$$

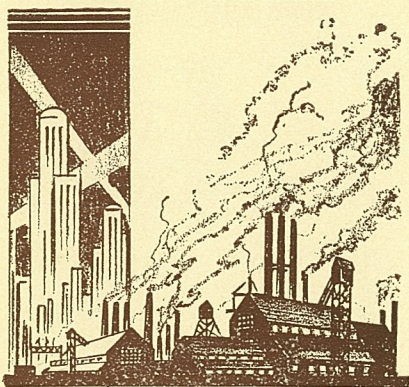
The assumption of laminar flow is therefore correct.

The 2" size is considered satisfactory because it is realized that the greatest contributions to pressure loss in this calculation are the strainer and fittings, which were assumed to have  $L/D$  of 300 and 30 respectively. Actually, this is a very conservative estimate for Reynold's numbers as low as 13.9.

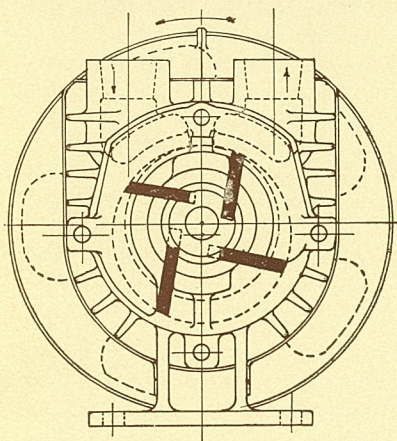
\*More properly 2.06", the actual internal diameter of 2" nominal pipe.



## INDUSTRIAL FIELD



### CLASS 23 SERIES AIR PUMPS SUPPLY AIR FOR BREATHING IN HAZARDOUS ENVIRONMENTS



For quite some time Kraissl Class 23 Series Air Pumps have been in use at the National Lead Company's Atlantic Branch in Perth Amboy as a source of air supply to workers who enter hazardous environmental areas.

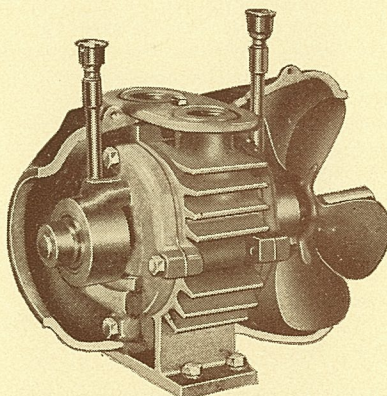
Class 23 Series Pumps require no liquid lubrication for the displacement mechanism and therefore can furnish a supply of air free of oil contamination. The lubrication of these pumps is furnished by graphite composition blades. Dust separators on both the suction and discharge of the pump are recommended to reduce air contamination from dust to a minimum.

The great advantage of the use of low pressure air is the reduction of the hazards of high pressure reducing valves to lower high pressure air to the proper breathing pressure. Pump pressure can be reduced to the pressure required to convey the air through the air hose and supply the demand requirements of the air mask.

The SCUBA or Self Contained Underwater Breathing Apparatus, provides the advantage of freedom from connection to a stationary air supply, since air tanks are carried by the diver, but the ease of transporting this equipment on one's back is due to the buoyancy of the water. The weight of this equipment above water is a

real load. In both cases, it is preferable to use an air hose to the worker on the surface, so the employment of Kraissl Class 23 Series Air Pumps has eliminated the need for high pressure air tanks and the routine recharging of them.

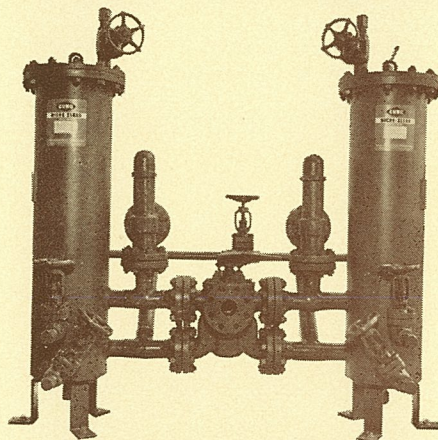
Kraissl Class 23 Series Air Pumps are fan cooled which makes them suited to long periods of operation and they have been performing their function at the National Lead Plant since the middle of 1954.



CLASS 23 AIR PUMPS  
BULLETIN A1399

### CLASS 72AA TRANSFER VALVE APPLICATION

Illustrated here is a duplex filter assembly designed by the Cuno Engineering Corporation of Meriden, Conn., for use in very critical lube oil service for Clark Bros. Co. of Olean, N. Y. This is the Cuno Model 603 Microkleen Duplex Unit, one of many duplex types and sizes which Cuno assembles with our 72AA Valve Units.



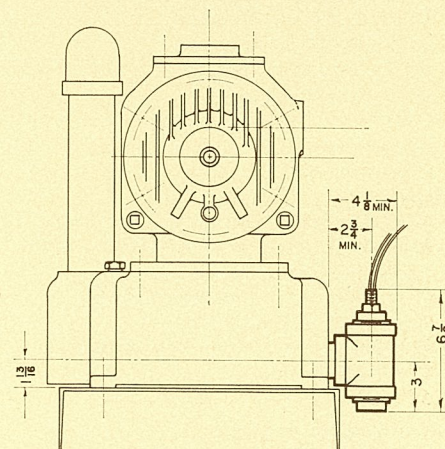
DUPLEX OIL FILTER

Photo courtesy of the Cuno Eng. Corp.

### LOW OIL LEVEL SHUT-OFF FOR CLASS 25 AIR PUMPS

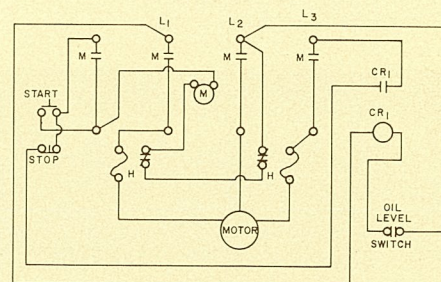
There is a trend today to make mechanical equipment "idiot proof" and toward this end we have developed a low oil shut-off for Kraissl air pumps sizes 25-9 to 19 inclusive. This control is offered as an accessory at \$52.00

additional list price and consists of a float switch mounted in a pipe tee on the oil reservoir of the pumps as shown in Fig. No. 1. When the oil in the reservoir drops to a level of about 1" from the oil reservoir bottom, the air pump will be automatically shut down. The control is adaptable to both manual and automatic control. Schematic wiring diagrams are indicated in Figs. 2 and 3 respectively. The control must be used in conjunction with a one pole, normally open (when de-energized) relay (CR1 on Fig. No. 2) for manual operation and a two pole relay with two normally open contacts (CR2 on Fig. No. 3) for automatic operation. The second pole of CR 2 is used to shunt a reset button to avoid the air pump starting when the operator fills the oil reservoir and to prevent "cycling" when the low oil level is approached. The pump control switch in Fig. No. 3 can be a pressure switch or a set of relay contacts used with electrode or float controls.



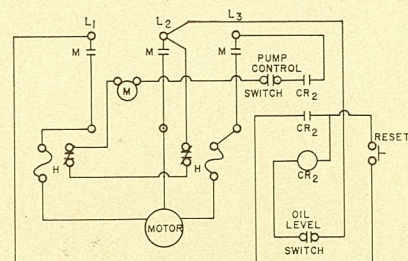
MOUNTING DIMENSIONS

Fig. 1



MANUAL OPERATION

Fig. 2



AUTOMATIC OPERATION

Fig. 3



## SALES REPRESENTATION

### HOME OFFICE

We have reserved the areas of Connecticut, Delaware, 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

Robert Bacon Co.  
Fruit St., Westboro, Mass.  
John S. Stone  
P. O. Box 247, Holcomb, N. Y.

### Eastern Region

Engineering Associates, Div. Trymac, Inc.  
16 West 5th St., Erie, Pa.  
Valley Equipment Company  
404 Frick Building, Pittsburgh 19, Pa.  
J. W. Pearson Co., Box 282  
Hatboro, Penn.  
Shanklin Company  
330 East 25th St., Baltimore, Md.

### Southeast Region

L. M. Lee, Jr.  
Richmond Federal Bldg., Richmond, Va.  
Dillon Supply Company—Main Office  
Raleigh, N. C.  
Dillon Supply Company  
Durham, No. Carolina  
Dillon Supply Company  
Rocky Mt., No. Carolina  
Dillon Supply Company  
Goldsboro, North Carolina  
Dillon Supply Company  
Charlotte, No. Carolina  
Boiler Supply Company, Inc.  
490 Craighead Street, Nashville, Tenn.  
2006 Sutherland Ave., Knoxville, Tenn.  
Applied Engineering Co., Inc.  
P. O. Box 506, Orangeburg, S. C.  
Spotswood Parker & Co.  
313 Techwood Drive, Atlanta, Ga.  
T. W. McCuiston  
540 S. W. 69th Ave., Miami, Fla.

### North Central Region

Charles R. Davis  
2970 W. Grand Blvd., Detroit, Mich.  
Hetler Equipment Co.  
1904 Clyde Park Ave., S. W.  
Grand Rapids, Mich.

### Central Region

Wm. G. Taylor  
1900 Euclid Bldg., Cleveland, Ohio  
Lightfoot Pump & Equipment Co.  
1989 Guilford Rd., Columbus, Ohio  
The Jordan Engineering Co.  
7401 Shewango Way, Cincinnati 43, Ohio  
T. A. Heidenreich Co., Inc.  
2036 East 46th St., Indianapolis, Ind.  
Lowden & Company  
3404 N. Harlem St., Chicago, Ill.  
A. K. Howell Co.  
1001 Bellevue Ave., St. Louis, Mo.

### South Central Region

Creole Engineering Co.  
2617 Banks Street, New Orleans, La.  
3786 Scenic Highway, Baton Rouge, La.  
Sterling & Newby Houston Corp  
2611 Crocker St.  
Houston, Texas  
Sterling & Newby—Dallas Corp  
4431 Maple Ave.  
Dallas 9, Texas

### Northwest Region

Bruce P. Rutherford, Inc.  
122 First Ave., S. W., Portland, Oregon  
Bruce P. Rutherford, Inc.  
1954 First Avenue South, Seattle, Wash.

### Western Region

A. C. Cope Co.  
435 Bryant Street, San Francisco, Cal.  
Power Engineering Co.  
1806 South State St., Salt Lake City, Utah  
Thermo Tech Products Co.—Power Plant  
2466 So. Delaware  
Denver 23, Colorado

### Southwest Region

Walter T. Humes Co.  
230 East Anaheim, Wilmington, Cal.  
Wagner Hydraulic Equip. Co.  
10814 Santa Monica Blvd.  
Los Angeles, California

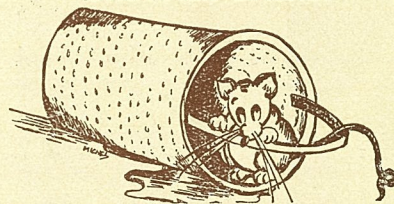
### Canada—Ontario and Quebec Provinces

Kirk Equipment Ltd.  
1460 Bishop Street  
Montreal, Quebec, Canada

### Canada—British Columbia Province

Fred McMeans & Co.  
1608 West 5th Avenue  
Vancouver, B. C., Canada

## FOUND IN THE STRAINER BASKET



Judge: "Do you understand what is meant by the word Oath?"

Witness: "Yes, your Honor, I do, I was right behind you when your ball went into the water on the ninth hole".

1 1 1

"Young man", said the new neighbor, "We've just moved next door and I would like to get some recommendations, "Can you tell me the name of your family doctor?"

"I'm sorry", I can't tell you".

"Why, don't you know his name?"

"Well, we used to have a family doctor, but now mother goes to a nerve specialist, father to a stomach specialist, my sister to a plastic surgeon, my brother is in the care of a lung specialist and I go to a Doctor of Optometry.

1 1 1

We could never explain why goods sent by ship are designated cargo, while materials sent in a car are a shipment.

1 1 1

## TO TREES ON GOLF COURSES

When taking stance on any Tee,

I agree,

There's nothing like a Tree;  
With arms outflung like verdant wall,  
Both short and tall,

To catch my mis-directed ball.

F. K., Jr.

## THE KRAISSL COMPANY

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