

# PUMP PROBLEMS

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**M**ANY readers have expressed their appreciation for the articles we have presented in the last several issues under the title of "Pump Problems," and some have contributed ideas of their own.

We have also received many requests for complete detail design suggestions for tank truck pump installations, as well as for bulk plant layouts, with advice on the best possible piping arrangements

for each use.

We are quite sure that at this time it would be impossible for anyone to present a perfect installation plan which would be adaptable to all the varying requirements and conditions to be found in this field. However, we feel that to point out the more important features necessary for successful operation, and to call attention to errors of construction which have

been found undesirable, will do much toward bringing about an eventual standardization of installation practice of benefit to all.

No doubt many plants now being built will have outstanding features of improved construction, while, at the same time, incorporating some errors which will prove troublesome. This, of course, is to be expected in any new field, and it is for this reason we feel that an exchange of ideas among those engaged in this work should be promoted and would be very helpful to the entire industry.

In this issue we wish to quote and comment on a few suggestions and questions which have been presented by our readers. Paul G. Boyd, vice president of Airlene Gas Co., Inc., Fulton, Kentucky, writes as follows:

"Your articles on pumping problems are timely and of value. Perhaps many companies have worked out such problems but each person can learn from the experiences of others.

"For example, several years ago we had considerable trouble with a pump vapor-locking while pumping liquid from the tank car to storage, and could not get all the liquid from the tank car either. Now we use both pump and compressor and build a 10-lb. head in the tank car before opening the liquid lines. Our flow from the tank car is 3,000 gallons per hour through a 2-in. liquid line."

The use of a vapor compressor to increase the head pressure in the storage tank, from which fluid is being pumped, should be very helpful, particularly where the existing lines to the pump are inadequate in size, or present considerable resistance. Any means to insure an ample supply of liquid to the pump intake is of the greatest importance, and we are sure Mr. Boyd's suggestion would prove an excellent solution in cases of pump starvation due to inlet piping restriction or to an inadequate gravity head.

The manager of a B-P Gas distributing plant in Oregon writes:

"We have not yet figured out just what is wrong with our installation in which we have taken the return line from a differential valve back to the liquid line ahead of the pump. It may be that we will have to take this clear back to the supply tank."

We assume that this reader refers to the by-pass line. Particularly in bottling service, and wherever there is any appreciable volume of

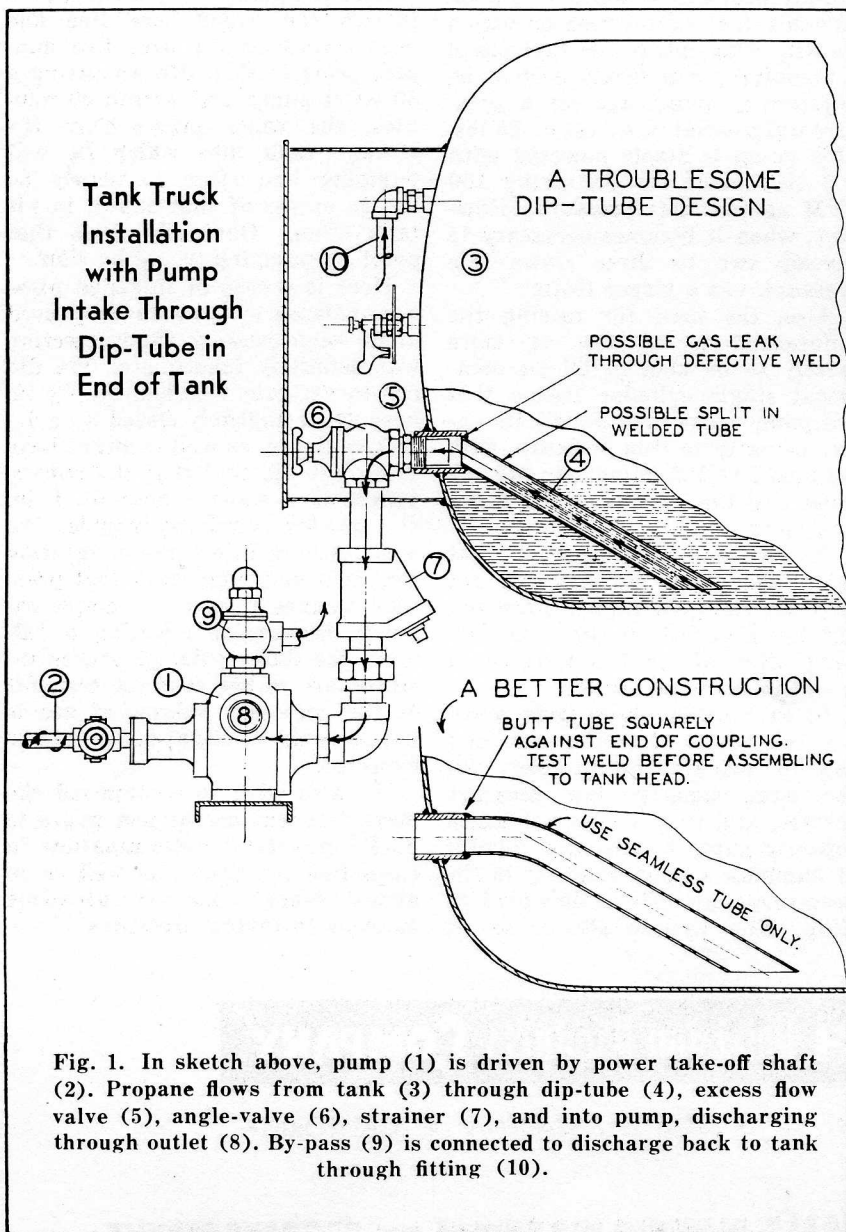


Fig. 1. In sketch above, pump (1) is driven by power take-off shaft (2). Propane flows from tank (3) through dip-tube (4), excess flow valve (5), angle-valve (6), strainer (7), and into pump, discharging through outlet (8). By-pass (9) is connected to discharge back to tank through fitting (10).

