• Stay within the confines of your contract.

• Accept luncheon and dinner meetings if there is a valid reason for conducting business at such a time.

 Diplomatically avoid involvement in and discussions of personal problems.

• Be a good listener.

• Do your work in good fashion and respect your client's "time frame."

• Respect your client's resources.

• Refuse a contract if you sense insincerity or a conflict of interest.

• Complete your contract and meet your commitments in full.

 Avoid jumping to obvious conclusions or accepting conclusions of others.

DON'T

• Don't act or attempt to conform as an employee in thought, hours, etc.

• Never try to be humorous nor actively join others in their attempts.

• Do not strive for nor lightly accept social invitations or involvements.

Don't solicit kudos.

 Do not violate ethics, protocol, nor compromise principles.

• Don't offer advice or comments pertaining to things outside the scope of the contract and your specialties.

Do not name drop.

• Don't be the first to offer a luncheon or dinner, nor make such an offer merely as a marketing gimmick.

• Don't burden clients nor their personnel with your personal problems, interests or needs.

 Never talk to impress yourself with your own words of wisdom.

• Do not knock other consultants, clients, employers or persons.

• Don't "build" on your contract.

 Do not conduct your business on the client's telephone nor use his resources for such without his prior knowledge and consent.

 Never be used for someone's ulterior motives.

• Do not terminate a contract without a valid and due cause, and never just to assume a more personally rewarding assignment.

• Don't short circuit the sequence of data gathering, analysis, synthesis, recommending, and implementing.

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Now you can trench where you couldn't before with the Ditch Witch Earth Saw attachment. Turn your basic 65-HP R60 or new R65 trencher into a year-round production tool. Remove the regular digging assembly and install the Earth Saw with four bolts. It's one of the most powerful attachments on the market, but don't overlook the features of the basic trencher! In cold climates, trench with the regular digging chain in warm months; cut frozen earth in winter with the Earth Saw. Use standard assembly in normal conditions; switch to Earth Saw in rocky areas. Two Earth Saw models are available to cut 24" and 30" trench — both at 4" widths. Get proven performance in frozen earth, coral and rock and many types of concrete. Mechanically powered for minimum power loss and maximum performance. Ask your Ditch Witch Professional for a demonstration!



CUT FROZEN EARTH The Earth Saw cuts trench in completely frozen ground for an electric and telephone service line in Michigan.

CUT CORAL - In a field demonstration in Florida, the Earth Saw slashes through coral formations.



A Division of the **CHARLES MACHINE WORKS, INC.** 100 Ash Street Perry, Oklahoma 73077 A full line of trenching equipment - from 7-HP to 65-HP

ABOUT THE AUTHOR

The author is the Director of the NATIONAL CONSULTING REGISTER which locates and identifies consultants and verifies their consulting credentials for industry and government agencies. He is also the Editor of the bimonthly news-letter CONSULTING NEWS. Office mail-ing address is P.O. Box 42576, Los Angeles 90050.

Dennstar Kentucky Bluegrass.

Perhaps the best all-around turfgrass available today.

Highly resistant to stripe smut, rust and leaf spot. Stripe Smut (Ustilago striiformis) sporlates in May or June, shredding individual leaves. Field trials show that, while Merion is quite susceptible, Pennstar is highly resistant. A very strong plus.

Pennstar is also highly resistant to rust (Puccinia spp). Rated on a scale of 0 (best) to 10 (worst), test data give a 1.7 rating to Pennstar versus 8.7 for Merion.

Most improved bluegrass varieties are resistant to leaf spot (Helminthosporium vagans). However, in university tests, Pennstar was significantly *more resistant* than some improved varieties.

Well adapted from the East Coast to California. Pennstar's disease resistance, drought resistance and other characteristics enable it to do well wherever Kentucky Bluegrass is adapted. It establishes well and resists fadeout under a wide variation in management.

Medium color, good density, easy to manage. With its pleasing medium bluegrass color, Pennstar blends well with other varieties. In mixtures, it's neither too dark nor noticeably light.

Pennstar persists at moderate-tolow fertility levels. It doesn't over-react to higher fertility. Because it's decumbent (the leaf angle is closer to 90° from vertical than 45°) Pennstar can tolerate a close mowing without thinning out. And it's shown the ability to withstand drought conditions better than some other Kentucky Bluegrass varieties.

No excess thatch after 11

years. Pennstar does not produce damaging quantities of thatch. In tests at Penn State, plots of Pennstar torn up after 11 years revealed no excess thatch. (No dethatching had been done in that entire period.) Normally aggressive varieties can be expected to thatch up under good management practices. Not Pennstar.

Ideal component for turf mixtures. Is it better to plant a single variety or a blend? This is the difficult question that confronts turf managers. A single variety planting is undeniably beautiful. Yet a single strain can be destroyed by disease or weather. Which is why Pennstar was developed — to make available a bluegrass variety that would be highly resistant to disease and capable of surviving extreme weather conditions.

These qualities make Pennstar very suitable for a mono-culture. Or a mixture, particularly when considering its other characteristics: It's not overly aggressive. It's easy to manage. Its pleasing texture and middleof-the-road color make it visually compatible with other varieties. Indeed, Pennstar blends so effectively, it could help convert some managers to mixtures.

DEVELOPED AND RELEASED BY PENNSYLVANIA STATE UNIVERSITY

Pennstar Kentucky Bluegrass (Poa pratensis)

Pennstar is an improved variety that has been released by Penn State after over 15 years of testing and evaluation. Pennstar is outstanding for disease resistance and for compatibility with other improved grasses in turf mixtures. Pennstar is not overly aggressive and is compatible with other varieties. Pennstar is persistent; reasons include its ability to withstand low mowing, its high reisistance to disease and its ability to compete under low fertilization.

Some expert (and unbiased) opinions.

"Disease resistance was good, it had an attractive color, texture, and a good growth habit. The most significant item was its good performance under relatively low levels of fertility."

"In our trials, Pennstar has been the best variety for which seed is available."

"Average quality ratings (9 = best) based on density, color and uniformity placed Pennstar highest with a score of 5.6 as compared to other varieties such as Geary 5.0, Merion 4.0 and Windsor 3.8. These particular plots have been under minimum maintenance and care."

Turf Buyers' Checklist

IDEAL

1. It should be able to survive periods of drought.

2. It should be able to survive with moderate fertility.

3. It should be decumbent in growth habit so it can be mowed short without thinning out.

4. It should not be overly aggressive—should not crowd out companion grasses.

5. Its color should not be so dark or so light as to give a mixture a mottled appearance.

6. It should not "go wild" when fertilized. Emergence and growth rates should be moderate.

7. It should not produce excess thatch, even after years of establishment.

8. It should be highly resistant to common diseases, and particularly to "killer types" such as stripe smut and leaf spot.

9. It should be widely adapted throughout the zone of species adaptation.

10. It should be well tested for a period of years over many locations so that its characteristics are well understood. 1. In field tests, Pennstar has sur- vived extended periods of drought.

Pennstar

2. Pennstar requires only the moderate management typical of most bluegrasses.

3. Pennstar's decumbent growth habit permits it to be mowed very short without thinning out.

4. Pennstar will hold its own against overly-aggressive varieties, but does not crowd out less aggressive types.

5. Pennstar has a pleasing medium blue-green color that blends well with all other varieties.

6. Pennstar's rate of growth is not overly affected by increased use of fertilizers; its emergence and growth patterns are moderate.

7. Pennstar produced practically no thatch in 11 years of testing.

8. Pennstar is practically immune to leaf spot, highly resistant to stripe smut.

9. Pennstar is widely adapted from California to the East Coast, in all the normal bluegrass areas.

10. Pennstar has been tested for 15 years in locations from coast to coast.

After you've checked them all ... Pennstar

Dennstar Kentucky Bluegrass.

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Wilsco FoamSpray Now Readily Available

Wilsco FoamSpray is a patented chemical additive used in herbicides and insecticides which, when sprayed through specially engineered Wilsco foam nozzles, converts the usual tiny liquid droplets emitted from sprayers into foam.

It has the ability to control potentially dangerous and damaging drift; is readily visible; produces better coverage; has a slower rate of evaporation, and produces larger droplets. FoamSpray is also excellent spreader/sticker even when its foaming characteristics are not needed in a given spray operation.

FoamSpray can be used in all conventional spray equipment — hand, boom or aerial — capable of 40 or more pounds pressure per square inch, according to the company.

FoamSpray is completely soluble in water and offers complete acceptance when mixed with water. Two quarts of FoamSpray per 100 gallons of spray solution is the mixture ratio used in most applications. However, 24D and 245T require three to four quarts of FoamSpray per 100 gallons.



BECK'S BIG ROLL SYSTEM ... HARVESTER, LOADER, LAYER

Use your 3-point hitch equipment

This is the fastest system on the market. Cut and roll up to 1200 yards per hour without manual handling of sod, and lay it mechanically as fast as it's harvested. Inexpensive tubular reels take less space than pallets, are lighter, last longer, and permit easy loading and unloading with a fork-lift mounted on a 3-point hitch. All lifting and handling is done by machine. Because it slashes labor costs for the landscaper, it is a sales machine for the grower. Stretches sod 3% to 5%. Leaves lawns smoother with fewer seams and joints.

For more information, write: BECK MANUFACTURING COMPANY P. O. Box 752 • Auburn, Alabama 36830



In some applications, the ratio may be reduced to one quart per 100 gallons. It is not corrosive.

Mixtures with various oil combinations are also possible and practical.

Wilsco foam nozzles replace present nozzles simply and quickly and inject air into the solution, forming the foam. Five different nozzle designs cover all normal spray operations.

FoamSpray has been proven particularly effective when used along highway, railroad and power line rights of way; in parks and around public institutions and in aerial and large-scale ground applications.

R. L. Wilson Co., Inc., 6720 Weaver Road, Houston, Tex., is the manufacturer of FoamSpray. Wilson is a subsidiary of Service Technology Corporation, Dallas, Tex. Service Technology is a subsidiary of LTV Aerospace Corporation, also of Dallas.

Special Aquatic Section For Southern Weed Conf.

An extensive aquatic weed program is scheduled for one section of the Southern Weed Science Society meeting at Dallas, Tex., Jan. 18-20.

Chairman of the aquatic and special weed section, Richard Couch, Athens College, Athens, Ala., reports that two special symposiums are planned. The first will have to do with the environmental impact of aquatic weed control and the second will summarize the current status of this type weed problem in the southeastern United States.

Featured on the first symposium will be Howard Zeller, Environmental Protection Agency, headquartered at Atlanta, Ga. Robert Blackburn, Agricultural Research Service, Ft. Lauderdale, Fla., is also scheduled for this section.

Oil-Dri Flies For Patent To Pelletize Clay Waste

A new process to pelletize fine particles of absorbent clay is being researched by Oil-Dri Corporation, Chicago.

A patent for the process has been filed for by Rudolph Valenta on behalf of the company. Valenta is vicepresident of production and development for Oil-Dri.

The clay particles, now a by-product waste material at the company, are being tested for a number of uses, notably as a decorative ground cover and as a carrier for pesticides.

City Ordinances Needed For Urban Tree Protection

Urban tree root systems often suffer severe damage during construction and need to be protected. This is the thinking of Dr. Carl E. Whitcomb, ornamental horticulturist at the University of Florida. He is advocating city ordinances to protect trees and the root systems that support them. Otherwise, he believes, they will end up dying.

Despite the fact that many developers and cities proudly proclaim they have "saved the trees", many root systems are severely damaged during construction, he has stated.

Speaking at a shortcourse on urban forest management recently before 48 city planners and other officials, Dr. Whitcomb pointed to the city of Atlanta, Ga., which has a tough new landscape ordinance to protect trees and their root systems. Trees in Atlanta, he said, cannot be removed without city authorization, and root systems must be protected.

He stressed that urban trees must endure more environmental stress. "Once root systems are damaged. trees become more vulnerable to insects, disease, and stress, especially during drought periods. Such damage usually means the beginning of the end," he said.

Added to the problem of root damage are 90 to 110 degree (Fahrenheit) soil temperatures which can stop root growth and hasten death. Trees growing in narrow areas adjacent to parking lots or between sidewalks and streets are affected by this type of heat stress generated by the paving.

Because as much as 80 percent of a tree's root system is in the upper ten inches of soil, it is particularly susceptible to damage from roto-tilling or soil compaction which cuts off oxygen.

Whitcomb also questioned the widespread practice of building sidewalks in a straight line if tree roots must be cut for the right of way. Instead, he said, sidewalks should be built around trees to protect roots.

He said young trees that have been planted in confined growing areas will usually adjust to these conditions, resulting a healthy but dwarfed plant.

Finally, the ornamental horticulturist warned that too much urban land is being turned into an asphalt jungle which causes flooding and restricts the regeneration of the natural water supply.

Most downtown areas are essentially 100 percent covered with some type of impervious paving, except for a few token plantings. Apartment complexes cover about sixty percent of the soil.

Even suburban sub-divisions, widely touted by developers for their "unspoiled natural beauty," cover 35 to 40 percent of the land with some sort of paving, adding to the water re-charge and runoff problem.

Association Solicits Landscape Design Project Entries

Entries for the National Landscape Association award program must be submitted by Nov. 15.

Landscape design professionals may submit material on projects, complete with drawings, photographs, etc. to association headquarters, 832 Southern Building, Washington, D. C. 20005. Entry forms are also available from this office.

Awards will be presented at the group's annual convention at the Royal Sonesta Hotel, New Orleans, La., in February, 1972.

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SOD INDUSTRY SECTION

WHY WE DEVELOPED THE BIG ROLL SYSTEM'

By MARTIN BECK BECK MANUFACTURING CO., Auburn, Ala.



Big rolls can be loaded 2 or 3 at a time with a fork lift. They can be stacked 2 or more layers high on a truck.

The total installed cost of sod is often the figure that determines whether a lawn is seeded or sodded. We, like most other sod growers, have always tried to keep our equipment up to date and to keep our costs down so we could grow quality sod at a competitive price. We always relied on service to our customers as a major part of our sales effort. It seemed that there was a considerable amount of equipment available to the sod producer, but almost none that would reduce the back-breaking labor of laying sod on the job. If we could help our customers lay sod more economically, they would get more jobs and we would sell more sod.

Following that line of thought, and considering all the various sizes and shapes that sod was cut, it seemed that a large roll offered the best overall chance of success for a completely mechanized harvesting and laying system. Sod had been produced in every conceivable size that a man could handle. We would produce it in a size that a man could **not** handle! That would mean that machines, not men, would be doing all the hard work.

Early tests of the basic idea showed that sod could be rolled into rather large rolls, then unrolled with a tractor. However, development of the hardware needed to turn this into a practical method of harvesting, loading and laying sod was slow. We finally settled on a four foot roll width which, loaded end to end, fully utilized a truck bed width and yielded a roll of a size easily handled with a typical landscaping tractor. Three 16 inch wide cutters were selected to provide a



2. Starting a big roll is easy.



3. Unloading big rolls with a boom.

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POST OFFICE BOX 6049 DULUTH, MINNESOTA 55802 FIRST CLASS PERMIT NO. 665 DULUTH, MINNESOTA machine that would follow irregular ground contours with minimum mechanical complexity.

Our pilot model was completed about one week before the 1970 American Sod Producers Association show in Illinois, and we left for the show without knowing whether it would work with bluegrass or not. As it turned out, the system worked perfectly, although the equipment was not fully perfected and we were inexperienced in its use. We have since greatly improved both the harvesting and the laying equipment as well as the methods of its use. Loading and unloading are easily accomplished with either a fork lift of a boom.

We have adopted wax coated, cardboard tubes 4 inches in diameter, and costing \$.30, as being most economical for our operation. Aluminum or steel tubing can also be used, although they are somewhat more expensive. It is possible to cut the cardboard tubes into 16" lengths and use a removable metal sleeve to hold them together during harvesting and handling. The sleeve is removed at the job site, and the resulting 16 inch wide rolls of about 7 or 8 yards each can be moved about and laid by one man using a small hand truck device. However, the basic system is so versatile and satisfactory that we are not using the hand trucks at this time. We also experimented with a number of other handling devices, but found them to be largely unnecessary.

Two of our main worries in the beginning were broken sod strips in harvesting, and obstructions such as trees and ditches in the laying process. Both were quickly found to be unimportant. Broken strips, such as might occur at a weak point in the sod, can be wound up with no loss of sod. Obstructions are simply bypassed with the tractor during laying, and the sod is pulled into place with a rake. This goes very fast, and permits laying sod on fairly wooded lots. On small lots, we suggest laying the largest areas with a tractor first, then using the end pieces to patch and fill in irregular areas. Two men can carry and lay a small part of a roll, or one man can cut it into strips of the desired size with a sod knife.

Very steep slopes and ground too soft to drive on with a tractor are not suitable for laying with present equipment. However, a winch type device for unrolling the sod on a slope and a light weight, high-flotation tractor for soft areas could be produced if the demand develops.

This is our first full year to use the big roll system. Some of our customers were skeptical at first, but all were enthusiastic after they tried it, and want to use big rolls whenever they can. I know of several large orders we have gotten because of the economies in laying sod by this method. Big roll systems are in use in Kansas, Illinois, Ohio, Maryland, and Rhode Island. These sod growers have all reported excellent results. In general, the first people to see the advantages are the growers who also lay their own sod.

We have a number of garden center customers who sell sod in blocks, and of course the big roll system is not practical for that trade. We will always have to cut sod in blocks for these people, and for that purpose we have built a cross cutter attachment for our 3gang cutter that can cut the strips to any desired length. We have placed a number of these in Florida and other states. This makes it possible to cut big rolls, blocks, folded slabs or small rolls with the same machine.

In the planning state for next Spring is an elevating harvester that

Gather more green

Dominate the active, affluent commercial turf grass and grounds maintenance markets in the No. 1 national monthly publication, WEEDS TREES and TURF. WT&T is first with the news and the ideas, first in editorial coverage and vitality, first in circulation. 33,555 BPA audited. All at lowest cost per thousand.

Because it is specifically pointed to course maintenance and not to the pro shop, WEEDS TREES and TURF reaches more golf course superintendents than any other publication, including those with "Golf" in their names.

- We reach every park superintendent
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 These make up the umbrella of buying influences for inputs in the commercial weeds, trees and turf market.

Schedule all your product advertising in WEEDS TREES and TURF. Gather more green!

WEEDS TREES and TURF A Harvest Publication,

Subsidiary of Harcourt Brace Jovanovich, Inc., 9800 Detroit Avenue, Cleveland, Ohio 44102 will permit economical pallet stacking of blocks, folded slabs or small rolls. This elevator will be an attachment for the present cutter.

Following are statements made by some of the users of our Beck Sod-O-Matic: Bob Miller, Rogers & Miller Sod and Landscape Service, Spring Hill, Kan.: I am way ahead justing getting it on the ground, not counting the savings in placing the sod; Brian Bouchard, Kingston Turf Farms, West Kingston, R. I.: Crews can harvest and lay sod hour after hour without fatigue; Joe Wolf, Triangle Sod Farms, Inc., Ft. Lauderdale, Fla.: In this highly competitive market we are in a much better position; Tom Gerdes, Gerdes Turf Farms, Xenia, O.: It is the coming thing; Roy W. Georg, Roy W. Georg Landscape Service, Severn, Md.: Good labor saver, also quicker, easier, and a better looking job; Bill Wandell, Sod Now, Inc., Urbana, Ill.: It has saved our hide this year. We have gotten jobs we would not have otherwise; Mac Broward, Broward Sod Company, Ft. Lauderdale, Fla.: After using the Sod-O-Matic using anything else makes me unhappy; Ray Christopherson, Northern Turf Supply Company, Eau Claire, Wis.: The Sod-O-Matic is the most flexible Sod Harvesting System we have seen. It is the first system that has considered the landscaper and sod layers problems; Bill Smith, Farm & Garden Supply Company, Oklahoma City, Okla.: The Turf Harvester will cut labor cost at least 25% and will easily pay for itself the first year.



4. Once a roll is started, it rolls up by itself.



5. Cross cut attachment can be made to cut any length.







Trees, sidewalks and ditches presented no problem on this job which was laid by an inexperienced crew.



Sod cutter blade repair kit, (photo) was developed by Beck Zoysia & Nursery Co. to reduce the cost of replacing sod cutter blades. When a blade becomes badly worn, the sides are ground down and the repair kit is welded in place. Grinding to remove excess weld material yields a blade that can be used almost as long as a new one. The rebuilding process can be done 2 or 3 times before the bottom blade wears too thin to support the side blades. A hardenable carbon steel is used. It is fairly hard as supplied, but can be heated with a welding torch and water quenched for maximum hardness.



- Helicopter Association of America western operators management seminar at the Marriott Inn, Belmont, Calif., Oct. 19-23.
- Lawn and Ornamental Seminar, Florida Horticultural Sprayman's Assn., Pier 66, Ft. Lauderdale, Fla., Oct. 29-30.
- Missouri Turfgrass Conference in the Memorial Union, University of Missouri, Columbia. Nov. 3-4.
- Wisconsin Golf Turf Symposium at the Pfister Hotel, Milwaukee, Nov. 4-5.
- Lawn & Garden Distributors Assn., Annual Convention, Sheraton O'Hare Motor Motel, O'Hare Airport, Chicago, Ill., Nov. 4-5.
- Kentucky Plant Food Council, Annual Meeting, The Executive Inn, Louisville, Ky., Nov. 10-11.
- National Institute on Park and Grounds Maintenance, Park Maintenance, Sheraton-Schroeder Hotel, Milwaukee, Wis., Nov. 15-18.
- Colorado Crop Protection Institute, Colorado State University, Ft. Collins, Nov. 17-18.
- Arizona Parks and Recreation Conference, annual meeting, Holiday Inn, Tempe, Ariz., Nov. 17-19.
- Metropolitan Shade Tree Conference, 300 N. Park Drive, Arlington, Va., Nov. 18.
- National Agricultural Aviation Association, Fifth Annual Conference, Fairmont Hotel, Dallas, Tex. Dec. 5-9.
- Texas Turfgrass Conference, Texas A&M University, College Station, Tex., Dec. 6-7.
- North Central Weed Control Conference, 26th Meeting, Muelebach Hotel, Kansas City, Mo., Dec. 7-9.
- Ohio Turfgrass Conference and Show, Cincinnati Convention Center, Dec. 7, 8, 9.
- Northeastern Weed Science Society, 1972 Convention, Hotel Commodore, New York, N. Y. Jan. 5-7.
- Georgia Golf Course Superintendents Association, Annual Meeting, Augusta Golf Clubs and Holiday Inn, Augusta, Ga., Jan. 9-11.
- Western Association of Nurserymen, 82nd Annual Meeting, Plaza Inn, Kansas City, Mo., Jan. 9-11.
- Mid-Atlantic Golf Course Superintendents, Annual Conference, Holiday Inn Downtown, Baltimore, Md., Jan. 10-11.
- New Hampshire Turf Seminar, University of New Hampshire, Durham, Jan. 13-14.
- Southern Weed Science Society, Annual Meeting, Statler Hilton Hotel, Dallas, Tex., Jan. 18-20.



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GRID INSECT KILLER: Hub States Corporation, Indianapolis, Ind.

Lectro-Lur, a new low cost electrically charged grid type insect killer attracts bugs with black light. To insects the black light appears many times brighter than brightly lit signs or buildings. Once insects come into contact with the electric grid they are killed. Unit contains no moving parts, is weather proof, totally safe and operates for less than 2ϕ per day. For more details, circle (701) on the reply card.



ELECTRIC FENCE POSTS: Spannar, Inc., Grandy, Minn.

Metal fence posts feature for fast, easy soil penetration. Easy installation, strength and low cost makes posts ideal for uses without electrical hook-up. Available in three models: No. 600 plate type, 54" arrow rebar, features pointed prong and sturdy triangular 15 gauge steel foot and anchor plate positioned to allow standard 40" above ground exposure. Ruggedly constructed, post is threaded through the anchor plate and then stamp formed to secure the plate into locked position. The wide plate allows step to push into soil with either foot or both feet in hard ground. Dip coated aluminum. Model 604 is 48" in length with smooth steel post. All posts are 3%" diameter reinforcement rod and are available with porcelain insulators if desired. For more details, circle (703) on the reply card.



PLASTIC SIPHON PUMPS: Unique Distributors, Burbank, Calif.

Fast starting, large volume flow polyethylene siphon pumps eliminate manual pumping of 1, 5 and 55 gallon containers. Model HD-76 will pump water at the rate of 1¼ gallons per minute. Model HD-111 will pump water at the rate of 2 gallons per minute. Can be used for soldering fluxes, flux removers, commercial solvents and other liquids, except concentrated acids, iodine and silver nitrate. Flow stopped instantly by opening vent. No leakage problem with fully enclosed liquid chamber. Model HD-76, \$2.95 each; Model HD-111, \$9.95 each. For more details, circle (702) on the reply card.



CRANKPIN BEARING, Hypro Div., Lear Siegler, Inc., New Brighton, Minn.

New crankpin bearing design permits longer intervals between greasing in Hypro Series 5200 and 5300 pumps. Design reduces lubrication to 100-hour intervals as contrasted to a "daily greasing schedule" in prior models. Offset in a stainless steel shaft and drives pump's twin pistons. Regular shaft bearings are factory lubricated and do not require a regular greasing schedule. Other pump parts are lubricated by the liquid passing through it. Pumps are available in a choice of materials to suit the customer's needs: economical cast iron for regular pumping service, nickel-plated cast iron for extra resistance to corrosion and erosion. Series 5300 pumps are also available in bronze for application of aluminum brighteners and other acid cleaning solutions. For more details, circle (704) on the reply card.