



ALL THE ANSWERS FROM KUBOTA



When the question is how to work smarter, Kubota gives you multiple choices!

Kubota's new L-35 has performance features that include a GST transmission for clutchless shifting on the go through all 8 forward and reverse speeds, hydrostatic power steering, and a roomy ISO-mounted operator's platform that reduces vibration. An optional hydraulic port offers the versatility to use hydraulic breakers and other tools.

The rugged B-20 offers a liquid-cooled 20 HP diesel engine with hydrostatic transmission, integral power steering, and standard 4WD for greater traction and power.

Both the B-20 and L-35 feature a loader-integrated reinforced frame that withstands rigorous work. Loader operation is simplified with a single-lever control, and the durable backhoe can be attached or detached in just a few minutes without the use of any tools. For even more versatility, a Rear-PTO and 3-point hitch capacity allow you to till, scrape, mow, and more.

When the question is how to work smarter, Kubota responds to your needs with tractors that are at the top of their class!



| Feature | B20 | New L35 |
|----------------------------------|-------|---------|
| Kubota Diesel Engine, (gross HP) | 20 | 35.1 |
| Hydraulic Pump Capacity, (gpm) | 12.7 | 17.3 |
| Loader Lift Capacity, (lbs) | 926 | 1,653 |
| Loader Breakout Force, (lbs) | 1,543 | 2,744 |
| Loader Maximum Lift Height, (in) | 85" | 105.5" |
| Backhoe Digging Depth, (in) | 92.9" | 111.3" |

Kubota



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Financing available through Kubota Credit Corporation

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"Landscapers should follow that as their minimum guideline."

When a piece of equipment is scheduled for its interval maintenance check, manufacturers suggest it should be taken out of the field and serviced according to specifications. They also urge that landscapers use only OEM or OEM-approved parts and fluids.

A preventive maintenance program *does* require an investment: make sure to stock parts that are normally used. Items, such as bearings, seals, filters, belts and oil, should be made available for scheduled maintenance intervals and emergency situations.

Each working day, a designated time should be set aside for basic preventive maintenance. Don't wait for slack time. A lubrication schedule, based on hour-meter readings—daily, weekly or monthly—should be established for all equipment.

The responsibility for each preventive maintenance function should be delegated to either a mechanic or an operator, depending on the size and structure of the landscaping operation.

Operators, working off a daily checklist, should visually check:

- fluid levels;
- air cleaner;
- blower housing;
- hoses and hydraulic lines, making sure they are not frayed nor leaking;
- belts for wear;
- radiator and transmission levels; and
- mower blades for sharpness.

They should also conduct a general clean-up.

"All of these things sound relatively simple," says George Thompson III, director of corporate communications at Briggs & Stratton, Wauwatosa, Wis., "but you'd be surprised at how many landscapers tend to do one and not the other, or don't do all of them regularly."

'3S' approach—John Oldenburg, manager of technical services at Jacobsen-Extron, Racine, Wis., advises operators to incorporate a "3S Approach" in their daily checks—"sight, sound and smell." *Sight*: look for the obvious things that could go wrong. *Sound*: listen to whether the machine is running properly or not. *Smell*: detect odors from burning electrical systems or leaky hydraulic lines.

"If you use those three things, you're going to detect a lot," points out Oldenburg. "Mark them down and give them to the appropriate person in charge of repairs, and get them taken care before it becomes a failure."

Someone—supervisor, head mechanic or technical expert—should be assigned the

EQUIPMENT: DAILY CHECKLIST

DATE _____
UNIT/SERIAL NO. _____
EMPLOYEE _____

ENGINE

- ___ Oil level
- ___ Fuel levels
- ___ Air cleaner
- ___ Blower housing
- ___ Hoses
- ___ Hydraulic lines
- ___ Belts
- ___ Water level (on water-cooled engines)
- ___ Cooling fins (on air-cooled engines)
- ___ Radiator level (riding mowers)
- ___ Transmission level (on riding mowers)

OTHER

- ___ Overall visual inspection
- ___ Blades (on mowers)
- ___ Bolts
- ___ Belts
- ___ Day-end lubrication
- ___ Day-end clean-up

responsibility to oversee the program. His responsibility should include keeping accurate service records.

However, the ultimate responsibility for the program should rest with owner, according to Mark Wagner, engineering manager of Ransomes Inc., Johnson Creek, Wis. "If the owner doesn't place any emphasis on it, the next guy down the line is not going to pay any attention to it."

If you maintain a logbook on every piece of equipment—and you should—it will provide a history of the equipment and all repairs. It can also allow you to look at costs per hour in operation. And if a unit demonstrates a consistent problem, it allows you to create a necessary parts inventory to cover emergency situations.

Notes Paul Scholten, manager of service and technical publications, engine division, the Kohler Co., Kohler, Wis.: "If there is a record of how much expense they put into it, maybe there is a piece of equipment that does the same job and has a lower maintenance cost. Another thing is that, if you have any comebacks for the manufacturers relative to the warranty, you have a permanent record."

As the saying goes: "An ounce of prevention is a pound of cure!"

—The author is a freelance writer based in Cleveland, Ohio. This is his first assignment for *LANDSCAPE MANAGEMENT*.

Preventive engine maintenance

by Tom Brink

■ Your equipment operator's manuals contain tested, proven care and maintenance procedures. Before questioning them, consider these common sense "whys" behind some of these service procedures.

Read the operator's manual. It contains nearly everything you need to know about service. You'll save time and money by reading the manual *before* working on the machine—not *afterward* to see what should have been done, or what must be redone.

Avoid over-servicing. An example of over-servicing is the air filter on diesel engines. When the air filter looks dirty on the outside, that's a sign that it's doing its job. As dirt collects within the outer portion, the air cleaner works even better. Its holes become smaller, preventing smaller particles from passing through. When the holes become clogged, the filter needs replacement. But never clean an air cleaner; always replace it.

Use proper replacements and hardware. For example, when shear bolts (soft, break-away bolts used to attach accessories) break, they free the attachment from the gear box or drive shaft. If the shear bolt is replaced with a hard bolt, the accessory remains attached even when an object becomes trapped. The unit continues to operate, and transfers stress and damage to a more expensive part of the machine.

Another example: a "will-fit" belt probably won't do the job. Even when a belt looks like it fits in the sheave correctly, it may not. If a belt is worn or too small, it will slip. Worn or wrong-sized belts can actually change the shape of the sheave itself.

Sand can also affect the sheave. Small particles grind against the sheave as they move along the belt. This damage may not be apparent when looking at the sheave from above, but can be detected by examining it from the side. A straight-edge placed against the sheave will reveal the "belly" worn in it by the sand particles.

Check the sheaves when belt problems occur, before placing the blame on the belts.

Be careful when washing. Frequent washing is important, especially for equipment exposed to fertilizers and other chemicals that can cause rust.

Wait to wash the machine until after it

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WHAT → DOES WHAT

| | |
|---|---|
| Shaking or batting oil filters. | Crumbles parts of the elements or damages rubber seals. |
| Blowing air through air filters. | Creates holes that allow dirt and dust to pass through them. |
| Using hard bolts for attachments in place of shear bolts. | Can force attachments to continue operating, transferring stress and damage to a more expensive part of the machine. |
| Using the wrong belt. | Can slip or change the shape of the sheave, cutting power output. |
| Using big hoses or power washers to wash equipment, especially when equipment is hot. | Water can leak or be forced into seals and housing cavities, contaminating oil and grease. |
| Not changing oil before storing. | Sludge accumulates in the bottom of the crankcase. |
| Operating the machine in partial choke. | Overfuels the machine and fouls the spark plugs. Cuts efficiency of cooling system, lets carbon deposits build up, fouls spark plugs. |
| Not keeping engine clean. | Can reduce engine cooling capacity and cause engine failure. |
| Using dull blades. | Makes turf look ragged and wastes engine power. |
| Not cleaning underside of mower decks daily—more often in wet conditions. | Alters air flow pattern in the deck, thereby lessening mowing efficiency. |

—T.B.

has cooled. Use a low-pressure hose. After washing, grease all fittings to force out any water that may have accumulated in seal areas and housing cavities.

Use fresh fuel. It should be the fuel specified for the season and the machine; it should be clean and stored in a contamination-free container.

Gauge the amount of pre-mixed fuels needed so that supplies are depleted at the end of the season.

Change oil at recommended intervals. Always use the oil specified for the machine for the conditions.

Change oil before storing the machines. Even changing oil at the beginning of the season may not flush the sludge remaining at the bottom of the crankcase. You may be adding fresh oil to it.

Don't operate in partial choke. Engines are designed to function at wide-open throttle for maximum power and longest engine life.

Keep the engine clean. On air-cooled engines, the build-up of debris can reduce engine cooling capacity and cause engine failure. On liquid-cooled engines the air intake screen and cooling fins must be clean to allow air passage to the radiator.

—Tom Brink is product service coordinator for John Deere's Lawn & Grounds Care Division's Horicon (Wis.) Works.

Preventive maintenance for hand-held equipment

by Pete Fernald

Two-cycle engines

- 1) Maintain good fuel quality.
 - Avoid oxygenated gas whenever possible; if necessary, use MTBE over alcohol.
 - Follow manufacturer's fuel/oil mix ratio recommendations; use only quality oil for two-cycle engines.
 - Drain fuel tank and run carburetor dry before long-term storage (more than 30 days) to reduce potential problems with fuel filters, diaphragms and inlet needles.
- 2) Keep carburetor on spec.
 - See dealer regularly for proper adjustment, thus avoiding poor performance.

- Follow manufacturer's recommendations for appropriate fuel/oil mix ratio, and use quality oil.

3) Attend to the essentials.

- Routinely inspect for debris build-up, particularly on cooling fins and air intake ports.
- Keep all air and fuel filters clean, replacing as necessary.
- Check spark arrestor in muffler for carbon and clogging; keep mounting bolts tightly secured.
- Watch electrical system, checking for bad wiring or out-of-spec spark plug gap; replace plug annually or after 50 to 80 hours of use.

Chain saws

- 1) Don't cut with a dull chain; it causes damage to the bar, sprocket and chain itself.
- 2) Routinely check the depth gauges and lower per manufacturer's recommendation.
- 3) Clean guide bar groove and oil port to assure proper oil transfer.
- 4) Make sure the chain is properly tensioned by following manufacturer's recommendation.
- 5) Ensure the oiler is working; bar-end splatter is a good indicator of proper operation; adjust or repair as necessary.
- 6) Clean clutch drum area (especially around chain brake mechanism), removing oil and chip build-up.
- 7) Check for drive sprocket wear and lubricate clutch drum bearing.

String trimmers

- 1) Grass trimmer maintenance:
 - Routinely clean and apply fresh grease to flex-shaft cables.
 - Watch solid-shaft gear case for signs of leaks; make sure to lubricate at recommended intervals.
 - Routinely inspect blade for integrity, and keep it sharp.
- 2) Hedge trimmer maintenance:
 - Blade sharpness is most important.
 - Maintain proper blade tension following manufacturer's recommendation.
 - Lube blades daily before use.
 - Routinely inspect gearcase and lubricate as needed.

—The author is technical services manager for Shindaiwa, Inc., Tualatin, Ore.

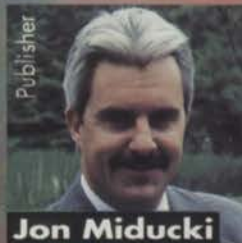
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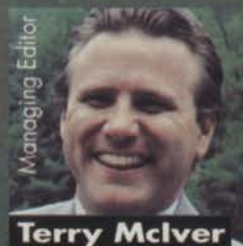
Jon Miducki



Jerry Roche



Ron Hall



Terry McIver

Big or small, trenchers have wide range of landscape uses

■ If you've got trenching to do—whether it's to install irrigation pipes or just to slip lawn edging into place—suppliers to the green industry have the right tool for you. From "major league" trenchers to small, walk-behind units to vibrating pipe pullers, landscape managers can fit the equipment to the task.

For instance, Vermeer's V-3550 is a 45.5 hp riding tractor that can trench up to 12 inches wide, up to 60 inches deep. Also in the large category is Ditch Witch's Model 5110, a 50-hp multi-purpose underground construction machine that can trench and vibratory plow.

On the other end of the spectrum is the Kwik-Trench "Earth Saw," a walk-behind machine with a small disc blade that trenches up to two inches wide to a depth up to eight inches.

In between are various attachments to tractors or skid steer loaders you might already own. Some, like the Bradco Model 612, operate off PTOs. Others, like the Lowe Model 21 and the Yeager-Twose Big K 14, are hydraulically driven.

For more information on any of the equipment listed in the chart accompanying this article, circle the corresponding number on this month's Reader Service Card, and the manufacturers will contact you within weeks.

—Jerry Roche

The Du-AI 1250 comes with a 18-35 hp tractor attachment.



Ditch witch trenchers reach a maximum depth of up to 80 inches.



Lowe's Model 21 has a skid-steer attachment and 13-25 gpm hydraulic drive.



Vermeer's 45.5 hp Deutz-powered rider hydrostatic Lawn Plow is narrow for small entry.



TRENCHERS FOR THE GREEN INDUSTRY

| SUPPLIER | MODEL | DIG WIDTH | DIG DEPTH | TYPE OF MACHINE |
|--------------------------------|----------|------------------|-----------|--|
| Bradco Circle No. 311 | 612 | 6", 8", 10", 12" | to 60" | 20-30 hp tractor PTO attachment |
| | 617 | 6", 8", 10", 12" | to 48" | skid steer attachment; 2-pos. side shaft |
| | 630 | 6", 8", 10", 12" | to 60" | skid steer attachment; multi-pos. side shaft |
| | 650 | 6", 8", 10", 12" | to 60" | skid steer attachment, hydraulic 22-36 gpm |
| Ditch Witch Circle No. 312 | 400sx | 3.5"-12" | to 48" | 40 hp diesel engine vibratory plow |
| | 5110 | 6"-24" | to 80" | 50 hp mechanical drive |
| | 3500 | 6"-12" | to 63" | 35 hp with hydraulic digging chain drive |
| Du-Al Circle No. 313 | 1250 | 4"-12" | to 54" | 18-35 hp tractor attachment; worm gear drive |
| | 1200 | 4"-12" | to 54" | compact tractor PTO attachment |
| Kwik Trench Circle No. 314 | K-T200 | 2" | to 8" | V-belt disc blade drive |
| | K-T1200 | 2"-3" | to 10" | walk-behind unit |
| | K-T2400 | 2", 3", 4" | to 12" | walk-behind unit |
| Lowe Circle No. 315 | 21 | 6"-12" | 36"-60" | skid steer attachment; 13-25 gpm hydraulic |
| Vermeer Circle No. 316 | V-3550 | 5"-12" | 38"-60" | 45.5 hp Deutz-powered rider |
| | LM-40 | 4"-6" | to 42" | hydrostatic Lawn Plow, narrow for small entry |
| Yeager-Twose Circle No. 317 | Big K 14 | 1.5" pipe | to 14" | hydraulic vibrating pipe puller mounts on Yeager-Twose TC Turf Conditioner |

Source: LM phone/mail survey, May, 1994

Kwik Trench models include two walk-behind units.



Three of Bradco's trenchers have skid-steer attachments.

A hydraulic vibrating pipe puller mounts on the Yeager-Twose TC Turf Conditioner.



Trencher applications:

- ✓ irrigation installation
- ✓ landscape edging installation
- ✓ surface root pruning
- ✓ "invisible fence" installation
- ✓ drainage pipes
- ✓ electrical lines in conduit/nightlighting

Some trenching features and attachments available:

- drill pipe racks
- hydraulic leveling systems
- rubber track drives
- backreamers, wing and cone-compaction
- side shifts
- foot pedals with creep overrides
- backfill attachments
- spoil augers
- earth saws
- vibratory plows
- anti-back flex digging chains
- dual-position trench assemblies
- fertilizer, sand and polymer injection
- worm gear drives

Speak with respect

What supervisors say, and how they say it, can affect employee productivity and company profitability.

by Ed and Todd Wandtke

■ In consulting assignments across the country, we have frequently encountered supervisors who are doing more to lose business and employees than to increase retention and morale.

In the following examples, you will read typical supervisor comments to employees. The first alternative weakens morale and lowers employee productivity. The second approach encourages employees.

Employee respect and response is directly influenced by the words that a supervisor uses. As you read the following typical situations, you may be surprised to recognize some of your own actions.

→ Giving instructions

Supervisors need to deal with employees who just don't seem to remember what to do—no matter how many training films they've viewed or how often they've heard directions.

● **Bad:** There is only one way to take the equipment off the truck. I've told you this time and time again.

Better: Let me show you the correct way to take the equipment off the truck to avoid hurting yourself or damaging the equipment.

Rationale: Correcting or changing employee behavior requires that you be positive, persistent, patient and practical. Avoid being vague or generally abstract. Harshness, embarrassment and ridicule do not motivate an individual.

● **Bad:** When are you going to learn how to use the weed wacker in the most efficient way?

Better: Fred, the best way to use the weed wacker is with a two-step motion. Here, let me show you.

Rationale: Degrading employees seldom brings out the best in performance. Taking the time to become personally involved with the employee's training lets him or her know that you care about his/her success.

→ Disciplinary problems

Delivering disciplinary action is hard for most supervisors.

● **Bad:** You have been late, one or two days a week, for the past three weeks. How are you going to solve this problem?

Better: Being late five times in the past three weeks has caused your crew to work overtime. You have left me no option but to write you up for being tardy. One more time and you will be given the day off with no pay.

Rationale: Learning when an employee is becoming such a problem that formal action is required takes time. Be consistent and establish standards for all supervisors in your company to use.

● **Bad:** Don't forget what we talked about yesterday. I'll be watching you.

A technique to help reduce the pressure on an individual who doesn't work well under pressure is to remove the pressure.

Better: Hi, Tom! Good to see you at work today!

Rationale: In this instance, greet the employee cheerfully, indicating how happy you are to see him or her at work. Keeping morale up after having to discipline an employee is difficult. How you handle the next day is crucial.

→ Performance reviews

An employee evaluation can be a dumping session, or it can be a building block for the employee. How you handle and encourage two-way communication can make a difference.

● **Bad:** Let's go over your evaluation. Here's how I rate you. Do you have any questions?

Better: (Handing the employee the written evaluation): As you can see, you haven't done well. Let me suggest some training. It's essential to the progress of the company, we all need it, and it looks good in your records. I would like to schedule you for the

Dale Carnegie sales course on Tuesday and Thursday evenings. It's a great program. How does that sound to you?

Rationale: Providing an employee a copy of your evaluation demonstrates that you care about his or her future with the company. It will also help identify areas where improvement is needed, without your involvement.

→ Absent-mindedness

Some employees have a problem remembering instructions. Writing them down often proves useless.

● **Bad:** (Looking at a five-inch stack of papers in the "in" basket): Helen, how long will it take to get the billing out today?

Better: Remember, Helen, you are to get the billings out each day as the jobs are completed. That's your main job. Let's go through your basket of papers after you complete the billing.

Rationale: Employees handle pressure and a long list of duties differently. Remove the pressure from an employee who doesn't work well under stress. Pace the work flow to an employee to provide them a level of encouragement and realization that they can achieve the desired results.

→ Company clowns

Here's a tip on how to keep good employees busy and avoid clowning-around time.

● **Bad:** Why are you just standing there? We have a lot of other tasks to perform on this property before we can go.

Better: Let's look at the schedule of what has to be done on this property. Then you'll know what to be working on next.

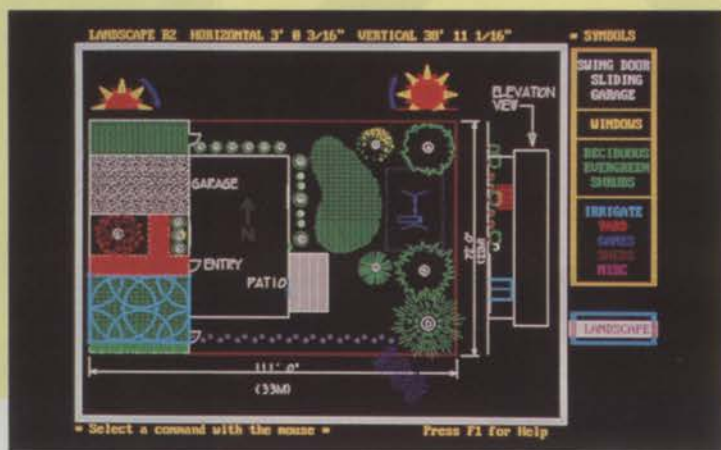
Rationale: Having job activities detailed on the work order will make it easier to assign the next task as work is completed. Keeping low priority assignments readily available for any employee to do will avoid having individuals standing around. Crews need to maintain involvement from everyone.

— For more information about this and other business subjects, write Wandtke & Associates, 2586 Oakstone Dr., Columbus, OH 43231; or phone (614) 891-3111.

Computers help landscapers

conquer the fourth dimension

Computer-aided designs help the client envision his or her dream landscape and see how it will change over the years.



By James E. Guyette

■ The landscape manager who feels at home with a computer will also be much more at home when discussing a client's needs. Not only is computer-aided designing quickly becoming a competitive requirement, but other computer uses such as inventory control are also important.

"One of the biggest changes within the industry is the use of computers," says Dr. George Longnecker, professor of landscape horticulture at the University of West Virginia. "A lot of people really haven't gotten into this yet," he acknowledges, "but the young folks coming into the profession really need to know this."

Students who balk at learning about bytes can chalk up a hard lesson when trying to land a landscaping job, cautions Longnecker, who spoke at the Northeast Ohio Green Industry Educational and Winter Trade Show. "Our alumni are telling us, 'If they don't have a computer background, don't bother sending us a letter or resume,'" he reveals.

"There are so many ways that computers have changed the industry," Longnecker points out. For the astute landscape manager and designer, computers are aiding efforts to conquer the always-pesky fourth dimension.

"The fourth dimension is *time*," he explains. "The computer is going to help us: with a computer we can actually predict that fourth dimension. You take space and time and it equates with *change*."

Booting up—In the landscape industry,

you can plot the normal changes that crop up within a property's design characteristics. Adjustments to drawings can be made and future plant growth can be projected and planned for. "We're dealing very strongly with that dimension."

By using the assorted software programs available, landscape designers can make detailed, lifelike drawings that can be altered with a simple movement of a mouse in response to the customers' reactions.

"You can actually bring in an image of the front of their house or building. You can put in plants and things and show them what it looks like," Longnecker notes.

"They can see what it is they're getting. When the client says, 'That isn't really what I want,' you can change it right then," he points out.

"With a computer you just plug in the changes; changes are cheap," Longnecker reports. "You used to have to go back and redo the drawings," he recalls. "You'd spend all that time, and if they didn't like it you'd get upset. Now, re-drawing is so simple."

Computer drawings allow you to portray the growth patterns of the selected plant materials proposed for the job. "Once a landscape is planted, it's just the beginning and it's going to change." As an example, previously a landscape design might have included certain high-growing species of plantings around a house. "Twelve years later you couldn't see the house," Longnecker observes.

A computer helps you avoid overplanting. "They may look good when they're planted, but five years later you have to rip half of them out," he laments. No more.

"You're now putting the right plant in the right place," he says. If a client wants a certain species to be planted in an area that just happens to be underneath power lines, you can demonstrate what the project will look like years later. The customer will see right away that the treasured evergreens could some day be sparking up a storm. "Those are obvious things that people need to be aware of."

The changing of the seasons can be another matter to discuss with the client. A design that works well in the summer could be doomed when that same scene is viewed under the smothering cover of a winter snow pile or a heavy helping of poisoning road salt.

Getting on line—The landscape manager or designer can better sell the level of his or her professionalism via the computer, too. This can come in handy when dealing with do-it-yourselfers who may not have the proper shopping expertise. "They'll put something in that's not even going to grow there," Longnecker points out. "You're not going to get the right advice from the folks pushing the plants," he adds.

"Usually when they go out and put in several hundred dollars worth of plants (that aren't right for the yard or climate), they realize they need some help." For landscape professionals witnessing this type of spectacle in the making, "You have to get it across to the public that with the *plant* comes the *knowledge*. This is one of the extras you get from the pros," Longnecker explains.

—The author is a freelance writer specializing in the green industry. His office is in South Euclid, Ohio.

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