



Valby Log Grapples

Converting a farm tractor or wheel tractor into a productive forest machine can be successfully accomplished with the installation of a sturdy log grapple. The grapple attachment might require a fairly large tractor with sufficient, installed front weight, but a grapple generally makes a good logging attachment.

BY BILL GOVE

The location for a log grapple attachment has customarily been close to the rear end of the tractor, just as is done with a drawbar. However, I would like to call attention to one manufacturer's variations in grapple design and attachment location that offer some significant advantages. Let's look briefly at two styles of log grapples that are manufactured by Valby, a company in Estonia.

Valby SGR76 Tractor Grapple

I had the opportunity to view a short demonstration of a Valby tractor grapple on the property of Neil Daniels, located in the picturesque hills of Westminster, Vermont. Adjacent to Neil's retirement home is a 200-acre woodlot, full of pine and oak that has been certified as an official Tree Farm. Having a strong connection with the farm where he spent his childhood years, it's understandable that Neil takes care and pride in what he is doing with the land and is selective in the type of machinery used.

One of the priorities in Neil's forest improvement projects is the yearly production of 24 cords of firewood to feed his outdoor furnace. A glance around the outbuildings near his home shows no lack of equipment to work his woodlot. But as the retired owner of a sizable construction company, he can be slightly excused for having on hand a few extra pieces of retired, but still usable, equipment.

To handle the wood harvest, Neil

has a Valby SGR76 tractor grapple, mounted on the back of his 66-hp John Deere tractor that is equipped with a 3-point hitch. The manufacturer recommends the use of a tractor of at least 50 hp for their tractor grapple. The grapple mounts on the end of a short horizontal boom which extends out from the back end of the tractor, a position that allows it to perform in a unique fashion. It attaches easily to the tractor. A mounting stand, convenient for mounting or removing the grapple from the tractor, is provided by the manufacturer.

Safety is an important concern anytime attachments are placed on the rear end of any wheel tractor. With an attachment such as a grapple that hefts additional weight on the rear, sufficient counterweight on the front end is essential. It's been said that with an attachment in place at least 30% of the total weight should be on the front axle to avoid the risk of rollover and to assure proper steering. Viewing the Valby tractor grapple, one can see that this



This close-up of the 3-point hitch shows the weight of the grapple attached in a low position.

concern has added significance, because the grapple is attached on the end of a short boom that extends out from the back, bringing the center of gravity further to the rear.

The remedy for safe operation is, of course, to place added weight on the front end of the tractor, as Neil was careful to do. A common rule of thumb for the safe operation of two-wheel-drive tractors pulling a load is to add 10 pounds of front-end weight for every horsepower of trac-

tor engine power. And further, the use of tire chains to increase traction on slippery surfaces or inclines will probably require additional weight to compensate for the increased force applied to the drive wheels.

One of the features of the Valby tractor grapple that particularly impressed me is the ability to shift the grapple boom from side to side in order to place the grapple over the load to be picked up. A double-acting cylinder mounted on the side of the boom allows it to be shifted 30 degrees to either side. As Neil pointed out, side-shifting the grapple eliminates much of the tractor maneuvering needed to position the grapple over the top of the load.


Another advantage of the side-shifting boom, Neil explained, is the capability for stacking the logs. Depending on the tractor used, smaller material can be piled as high as 4 or 5 feet with the grapple.

The Valby grapple needs two pairs of hydraulic outlets from the

tractor, one pair to operate the jaws of the grapple and the other to work the side-shift cylinder. If the grapple is going to be used to skid material along the ground, the valve on the line to the side-shift cylinder must, of necessity, be capable of a floating position. This flotation allowance is necessary to allow the grapple hinge, which is next to the headboard, to swing in response to the turns of the tractor. If the tractor does not have a floating valve, it is possible to retrofit one.

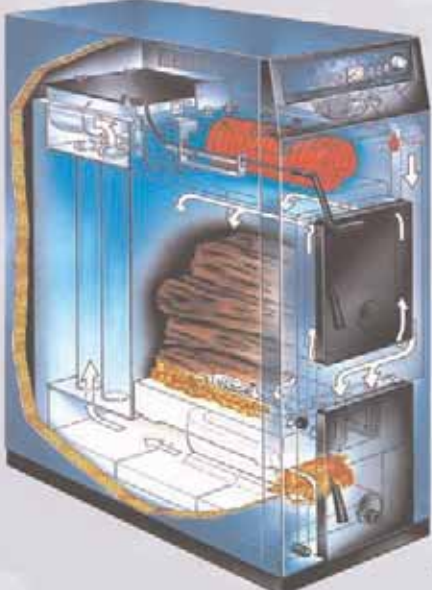
Another alternative for an older tractor that has only one set of hydraulic outlets is the use of Valby's model SGR76ML, which does not include the side-shift capability. With this grapple, the hinge floats free when skidding, but otherwise is locked back in place again with a rope control from the operator's seat.

Another advantage of the Valby log grapple is the ability to keep the skidded material much cleaner, as compared to skidding with a draw-



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VALBY GRAPPLES

bar or a grapple in a lower position. Smaller material can be lifted clear off of the ground; larger material can be held higher on the front end with less surface dragging on the ground.

It's obvious that the strain on a grapple mounted in this outward position can be considerable, but the Valby exhibits a rugged design with a good number of grease fittings. The joints have large diameter pins and bronze bushings. The attachment frame next to the tractor has a sturdy headboard that is handy as a backstop when bunching the stems together. The grapple itself has three jaws, double on one side and single on the other, for a secure triple grip on the log.

As Neil was quick to point out, the grapple has its limitations when working in the woods. There is still the frequent need for a winch and cable unless one is working relatively flat terrain with no difficult spots. There are some locations where a wheel tractor cannot be safely operated—such as on an uphill slope—without the risk of a rollover when the front end can't be kept down or steered properly. It can happen quickly, as some have found to their regret. The center of gravity on a wheel tractor is much different from on a log skidder.

Valby SSGR50 Skid-Steer Grapple

Valby also manufactures a grapple designed for attachment to the front end of a skid-steer. I was able to locate one in use near the ski resort of West Dover, Vermont. The owner demonstrated the practical application of this grapple that has been designed to be suspended from a high position on the frame on front of the machine.

Mike Marcy of Guilford, Vermont, earns his livelihood from clearing land; land-clearing, foundation rebuilds, and stone wall construction. As such, he always has heavy materials to be moved, and he will tell you that his Bobcat with the Valby grapple attached can accom-

Tractor Grapple SGR76

Weight	680 lbs.
Max. grapple opening	76 in.
Cylinder	3 in. inside diameter
Side-shift capability	30 degrees right or left
Cylinder piston	1-15/16 in.
Max. working pressure	2,900 psi
Mounting	3-point hitch, Cat II tractors, 50 hp–100 hp
Price	\$3,290 with hyd. side shift \$2,990 without

Skid-Steer Grapple SSGR50

Max. gripping width	50-3/4 in.
Min. opening	3-1/2 in.
Max. lifting capacity	3,960 lbs.
Width of wider claw	11 in.
Working pressure	2,900 psi.
Jaw material	Weldox 700
Rotator torque	737 ft./lb./2,320 psi
Rotation	unlimited in either direction
Boom length	51 in.
Weight	520 lbs.
Price	\$5,140

For Dealer Name, Contact Distributor:

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Manufacturer's Comments:

On the Skid-Steer Grapple: Valby has many attachments that enable equipment one already owns to be converted to log-loader use. Backhoes, compact excavators, excavators, and skid-steer loaders can be put to log-handling use by adding a kit consisting of a grapple and a rotator. The kit can be tailor-made to fit the requirements of the base machine. The kit can contain a grapple, rotator, quick hitch plate, and a solenoid valve to split a single oil flow to serve both the grapple and the rotator. The nine sizes of grapples available for the kits have max openings between 36 in. and 100 in., with lifting capabilities ranging from 2,200 lbs. to 15,400 lbs., so a large range of base equipment can be converted.

On the Tractor-Mounted Skidding Grapple: Tractor-mounted skidding grapples can be used when the conditions are such that one can access every tree with a tractor. Due to rollover risk, one should load the tractor with front-end weights. It is important for safe maneuverability to choose a tractor grapple that has the hinge close to the 3-point hitch. A hydraulic side shift of the grapple enables one to pick up stems from the side, so one does not have to line up the tractor with the logs. The side shift also enables the operator to stack short wood. In stacking use, one should consider using a hydraulic top link, which increases the stacking height.



The skid-steer grapple is designed to be suspended from a high position on the frame at the front of the machine.

plish a large share of the chores.

Upon arrival, I found Mike clearing a former pasture, now overgrown with small trees. He was using the

grapple to pile brush and small tree stems on the top of a brush fire. Mike obligingly stopped his toils to point out why he likes his grapple.

The Valby skid-steer grapple is equipped with a universal mounting plate for attachment to the skid-steer. Two sets of hydraulic outlets are required, one for the continuous rotator on the grapple, and the other to operate the grapple jaws. If the machine has only one pair of outlets, a grapple is available with a solenoid valve to split the oil flow.

The grapple is made in a boxed design for extra strength and is a bypass type which closes tightly to grip the log on all sides and minimize movement. The grapple cylinder between the jaws is protected by a bel-

ly plate underneath it. The grapple opening on Mike's machine is about 51 inches, the smallest of the three skid-steer models made by Valby.

Mike proudly pointed out a few practical adjustments that he has made to the grapple. He had a local shop install a shock absorber cylin-

der on the side of the boom to cut down on excessive side swing. He also installed a variable reducer box to vary the response rate of the rotator. He wants a fast rotator response when handling logs, but at other times he wants to be able to adjust for slower rotator movement, espe-

cially with stonewall work.

With the versatile functions that Mike expects from his grapple, he has had to make some small changes to the grapple jaws. He sometimes has the need to transfer dirt and small material when doing stone work, and has found it practical to weld a plate across the center opening of each of the grapple jaws. He also welded a one-inch rod along the inside of the base of each jaw as a help in gripping large rocks. Mike moves rocks as heavy as 3,000 pounds.

Both owners spoke quite highly of the quality of the Valby brand and the many practical uses for the grapples. ■

Bill Gove is retired from a forestry career with private industry and with state government as a wood utilization specialist and lives in Williamstown, Vermont. He is a regular contributor and is the author of several books on the history of railroading and logging.



The skid-steer grapple is perfect for piling brush and small tree stems on a brush fire.

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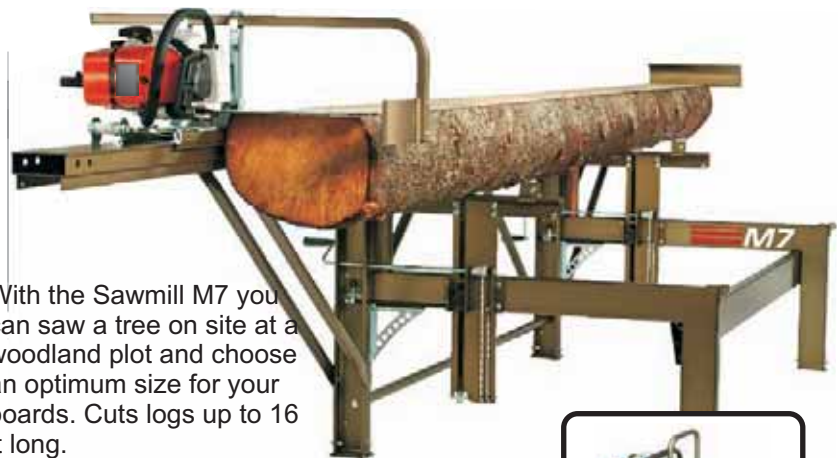
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