

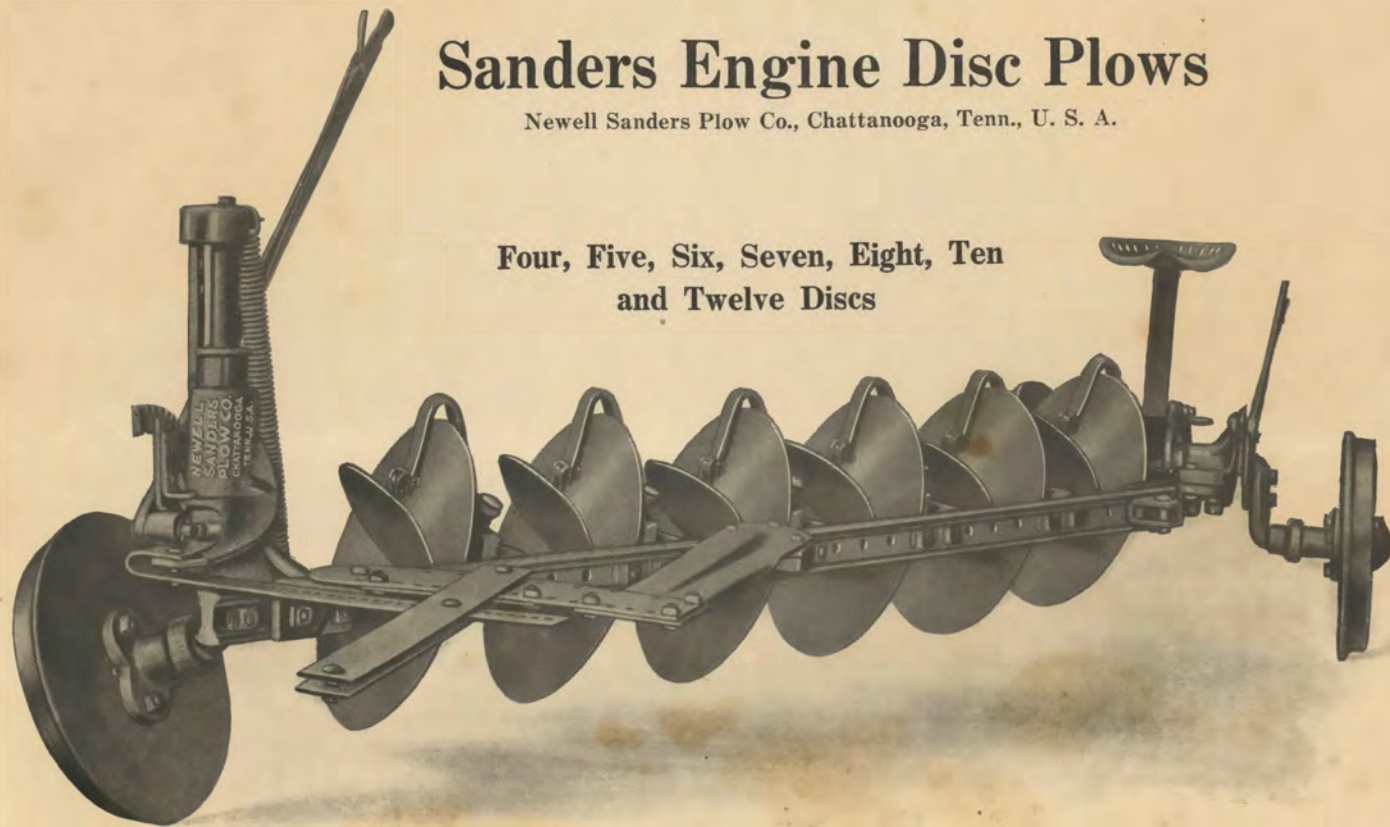
SANDERS DISC PLOWS



Sanders Engine Disc Plows

Newell Sanders Plow Co., Chattanooga, Tenn., U. S. A.

Four, Five, Six, Seven, Eight, Ten
and Twelve Discs



Regular Type and Extra Strong Type

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Disc Plows Are Better Than Moldboard Plows

They are lighter draft, because a rolling motion is easier than a sliding motion. They do not get hung like moldboard plows. They leave the bottom of the furrow loose, so as to absorb the water and allow the roots of the crop to go down. They will plow deep, taking the place of subsoil plows. They pulverize the soil equal to one harrowing. They make a mellow seed bed. They draw everything down and turn under all vines, weeds, stalks and stubble. They will grub all small growth. The plowed land is left level.

They will plow in sticky or hard ground. It never gets too dry to plow with a disc plow. It is not necessary to wait for rain. You can plow, sow and plant at the proper time. There is more certainty of a full crop, and there will always be a better crop.

There will be but little expense for sharpening and repairs are not likely to be needed for a long time. Disc plows will pay for themselves in one year by the saving in repairs and the improvement in crops.

A fourteen-inch moldboard plow has twenty-one inches of cutting edge while a twenty-four inch disc has seventy-five inches of cutting edge. In other words, a single disc has three and one-half times the cutting edge of a single moldboard plow.

They can be turned very much easier than moldboard plows and do not require so much attention. It is not necessary to raise them out of the ground in turning.

Disc plows can be used in many places where it is impossible to use moldboard plows.

Sanders Disc Plows Are Better Than Other Disc Plows

They run lighter and do better work. They are simpler in construction, with nothing to get out of fix. They are stronger and more rigid. They are more easily adjusted to different kinds of work, width of furrows, and sizes of engines. They cost less. They are less expensive to operate. They are better for many reasons that follow in detail.

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Strength of Plows

Engine plows must be strong or when they strike stumps or stones they will break before the engine can be stopped. No plow made up of a great number of pieces and joints will stand engine power. Disc plows that have frames built up with blocks between the beams or frames made up with a number of bars will bend, twist and sag in the middle so that the discs will have different inclinations, which will make the plows run hard, do bad work, and cause frequent breakage of bolts and other parts. SANDERS plows are the only plows made with all the principal parts bolted direct to one solid steel frame and are the only plows strong enough for engine work.

Framework of Sanders Plows

This consists of a main frame which is a solid steel bar made expressly for the purpose, to which is bolted a series of extra strong beams which carry the discs. This method of construction uses the smallest possible number of parts and gives the simplest and strongest frame ever made. This is the most important feature every introduced into the construction of gangs and is found only in SANDERS plows. It is covered by the SANDERS patents. One-inch bolts are used throughout these frames.

Strong Rear Beams

It is sometimes necessary to put extra weight on the rear end of an engine plow. The rear beam must be strong enough to stand this weight in addition to the weight of the driver and the strain of the rear wheel. This is provided for in SANDERS plows by the use of an extra strong rear beam made of a four-inch steel bar which gives the necessary strength and a broad bearing where the beam is attached to the frame.

Adjustability

By means of a series of holes in SANDERS frames the beams can be bolted on at any point along the entire length of the frame so that the discs can be set at the factory or in the field to cut six, eight or ten-inch furrows. By this same means our plows can be easily reduced to a smaller or increased to a larger number of discs.

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Chilled Bearings

SANDERS disc bearings are made of chilled iron which is the only kind of a bearing that will stand such work. They are fitted with compression grease cups and will wear a long time. They are attached to the beams by two one-inch bolts, and will not come loose and cannot get out of proper position as happens with many other kinds of plows.

Scraper Adjustment

SANDERS plows have a universal joint between the scraper arm and scraper standard so that the scraper can be made to touch the disc very lightly and fit it perfectly. When the lower edge of the scraper becomes worn it can be lowered to its original position. It can also be adjusted radially with reference to the center of the disc so that it can be set low down or high up and at all positions fit the curvature of the disc.

Guiding Hitch and Front Lift

SANDERS plows have a guiding hitch for controlling the front furrow wheel, so that they readily follow the engine in turning to the right or left. The connecting bar between the draft bar and controlling arm on the front axle is horizontal at all times, so that the direction of the front wheel is not changed when the front lever is operated, as is the case with all other plows. All parts are made of spring steel and are light, elastic and strong.

By means of a series of holes in the front lever link and a removable pin in the front axle cap, a greater adjustment of the front end of the plow can be had. This is a very helpful feature and is found only in SANDERS plows.

Turning to the Right or Left

On SANDERS plows a stop against the rear axle holds the rear wheel in place and causes the wheel to resist the pressure of the furrows against the discs and at the same time allows the wheel to swing to the left in turning that way. By releasing the latch with the foot the plow can be turned to the right. You can back furrow and can begin either at the outside or the center of the land. You can turn either way without cramping against the engine or raising the discs out of the ground.

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Trailing After the Engine

By changing one bolt on the left-hand swivel quadrant SANDERS plows can be made to trail lengthwise after the engine on the road, through gates and over bridges. All three wheels are adjustable for height, so that the discs can be lifted high off the ground while traveling from one field to another, or on the road.

Discs

SANDERS discs are made of a very superior quality of self-hardening steel. No tempering is needed after being sharpened. A single SANDERS disc has been known to plow as much as seven hundred acres.

Method of Fastening Discs

No bolt heads should be above the surface of the disc to interfere with the scraper, which should extend from near the outer edge across the center of the disc. SANDERS discs are made with a patent countersunk seat by pressing back the center of the disc into the shape of a countersunk head bolt and in which a large bolt is used which gives a perfectly smooth surface over the entire face of the disc. Only one bolt is used and that is at the center of the disc where there is no motion.

Two Sizes of Discs

For the purpose of suiting all conditions SANDERS engine plows are made with discs 24 and 28 inches in diameter. Twenty-four inch is considered the standard size, but SANDERS frames are made so that either size can be used on the same plow.

TWENTY-FOUR INCH PLOWS are for regular work. Each disc will plow a furrow four to ten inches deep and six, eight or ten inches wide. These plows are set up at factory to cut furrows ten inches wide, unless otherwise ordered.

TWENTY-EIGHT INCH PLOWS are for deep work. Each disc will plow a furrow four to twelve inches deep and six, eight or ten inches wide. These plows are set up at factory to cut furrows ten inches wide, unless otherwise ordered.

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Narrow Furrows

Better work can be done, particularly in hard ground and in sod and when plowing deep, by using more discs and cutting narrower furrows. The total power required for any given width of cut by a gang is about the same for narrow as wide furrows, notwithstanding more discs are used.

Number of Discs

Cutting different width of furrows that can be used on each size frame:

		10-in. Furrows	8-in. Furrows	6-in. Furrows
Four	Disc Frames	4	5	6
Five	" "	5	6	8
Six	" "	6	7	10
Eight	" "	8	10	13
Ten	" "	10	12	16
Twelve	" "	12	15	20

Size of Outfits

It is difficult to estimate the number and size of gang plows for engines of different sizes. Heavy sticky land may require twice as much power as average land. When the depth of furrow is doubled the power required will be more than doubled. As engines are usually rated the following sample sizes of outfits cutting furrows ten inches wide are suggested:

For 20 Horse Power Steam Engine	2-Five Disc Gangs
" 40 " " " "	2-Ten " "
" 20 " " Gasoline "	1-Five " "
" 40 " " " "	2-Five " "

Lubrication

The proper oiling of disc plow wheels has been a difficult problem. The best thing so far has been the usual kind of hard oil cups screwed into the side of the wheel boxes. These have been troublesome on account of breaking off, loss of caps and catching the weeds and winding them around the wheel box. The usual style of dust caps fastened to the wheel by bolts has been found unhandy, unsightly and subject to considerable breakage. We have combined the dust cap and hard oil cup by screwing the dust cap on the outer end of the wheel box which makes a hard oil cup of large capacity. It is provided with a simple lock arrangement which prevents its running off while the plow is in action. An occasional turn of the cap so as to make the oil show all the time at the inside end of the box makes both a dry axle and sand in the box impossible.

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Two Types of Plows

To suit all kinds and conditions of soils we make:

Regular Type for plowing where the conditions of soils are not very difficult and where extra weight is not needed.

Extra Strong Type for plowing where the conditions of soils are very difficult and where extra weight is needed.

Reinforced Frames

The frames of the larger gangs of our Regular Type and of all our Extra Strong Type Plows are reinforced with a steel bar, which is fitted into and bolted to the front side of the main frame. With this construction of frames SANDERS plows will withstand any amount of pulling strain that is likely to be exerted by the engine.

Reinforcing Discs

We can furnish at an extra charge reinforcing discs on our Regular Type plows. This consists of an eighteen-inch disc inserted between the regular disc and the disc holder with the two discs riveted together. On our Extra Strong Type the reinforcing discs are part of the regular equipment.

Axles

SANDERS Regular Type engine plows have two-inch axles. Except on gangs of six or more discs the vertical part of the front axle is two and one-half inches in diameter. Our Extra Strong Type plows have two and one-half inch axles all around. All these axles are made in such a way that the plows can be easily raised or lowered.

Wheels and Weights

For SANDERS Regular Type plows one solid rear wheel weighing three hundred pounds and two wheels weighing one hundred and fifty pounds each are furnished. All SANDERS wheels are fitted with removable wheel boxes. Our Extra Strong Type plows have three 300-pound wheels.

For loose and sandy soils we can furnish wide tread wheels with either type plows if ordered that way.

One 100-pound weight is furnished with our Regular Type plows and three 100-pound weights with our Extra Strong Type plows.



DIRECTIONS FOR ENGINE PLOWS

Springs 24 inches in length are used on the front standard between axle cap and steel strap fastened to the base of the standard. Springs 20 inches in length are used on the land side of the plow.

Attach front end of plow to right hand end of engine draw bar with the 5-foot chain furnished with each plow. The draw bar should be about twelve inches from the ground and twelve inches from the plow.

Large gangs should have the rear end attached to the left hand end of the draw bar with a cable of proper length to make the plow draw straight forward.

When more than one gang is used attach the front end of the rear gang to the rear draft straps of the front gang with the chain that is furnished with the rear gang. Then attach the rear end of the rear gang to the left hand end of the draw bar on the engine with a cable. Adjust the chains and cables on the draw bar so as to cause the front disc of each gang to cut the proper width of furrow.

All the time keep all the wheels of the plows running straight forward. If the rear end of the plow inclines too much toward the land use the set screw in the rear axle lock. Do not use the set screw unless it is found necessary.

When traveling on the road adjust the frame with the levers so the discs will clear the ground.

In going through gates and over bridges change the swivel quadrant so that the land wheel will run parallel with the frame and let the plow trail lengthwise.

It is somewhat better to begin in the middle of the land and turn to the right at the corners.

METHOD OF ATTACHING PLOWS TO ENGINE

It is necessary that the engine draw bar should be long enough to extend out behind the drive wheels of the engine in order that the plow or plows may be attached to the engine as shown by the illustration on this page. If the steel draw bar on the engine does not extend out behind the drive wheels it will be necessary to attach a wooden bar to the engine.

We furnish a five-foot chain for the front end of each plow.

If plows have six discs or more or if more than one gang is used in an outfit, cables with chains attached will be necessary as shown by the illustration on this page.

Wooden draw bars and cables if wanted will be charged for extra according to the size and length.

TRIANGULAR HITCHES.

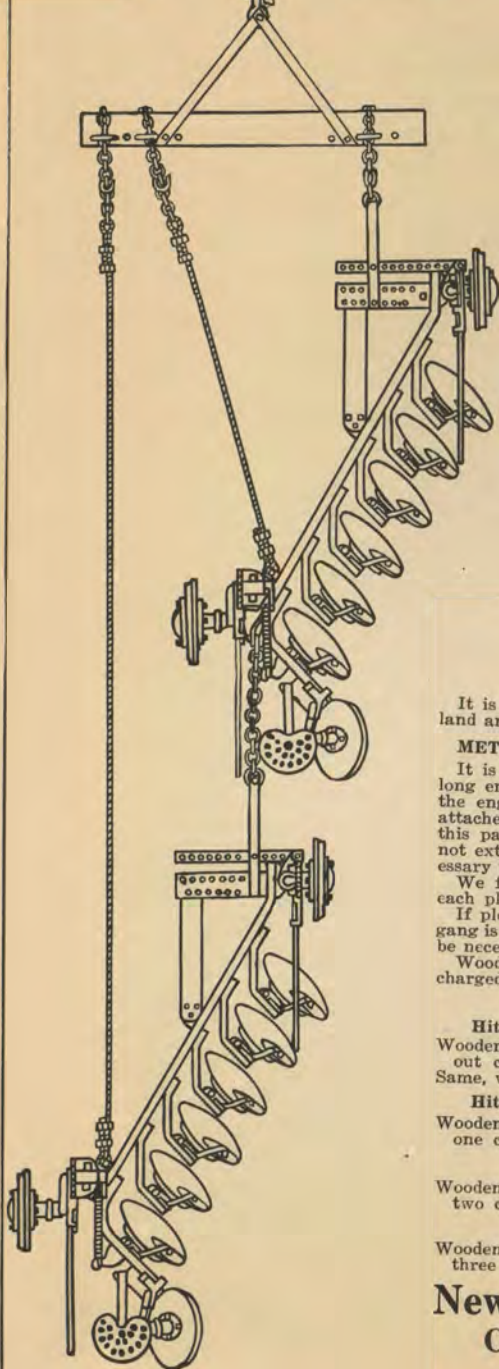
Hitch for Single Gang of Seven or Less Discs:
Wooden Evener Bar, 6 feet long, complete without cable.....
Same, with one cable.....

Hitch for Single Gang of Eight or More Discs:
Wooden Evener Bar, 9 feet long, complete with one cable.....

Hitch for a Two Gang Outfit:
Wooden Evener Bar, 9 feet long, complete with two cables.....

Hitch for a Three Gang Outfit:
Wooden Evener Bar, 9 feet long, complete with three cables.....

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REGULAR TYPE

FITTED WITH 24 INCH DISCS

Four	Disc	Plow,	8	Horse	Power	-----
Five	"	"	10	"	"	-----
Six	"	"	12	"	"	-----
Seven	"	"	14	"	"	-----
Eight	"	"	16	"	"	-----
Ten	"	"	20	"	"	-----
Twelve	"	"	24	"	"	-----

FITTED WITH 28 INCH DISCS

(Instead of 24 Inch Discs)

Four	Disc	Plow,	10	Horse	Power	-----
Five	"	"	12	"	"	-----
Six	"	"	15	"	"	-----
Seven	"	"	18	"	"	-----
Eight	"	"	20	"	"	-----
Ten	"	"	25	"	"	-----
Twelve	"	"	30	"	"	-----

These plows have one 100-pound Wheel Weight for rear Wheel.

EXTRA STRONG TYPE

FITTED WITH 24 INCH DISCS

Four	Disc	Plow,	8	Horse	Power	-----
Five	"	"	10	"	"	-----
Six	"	"	12	"	"	-----
Seven	"	"	14	"	"	-----
Eight	"	"	16	"	"	-----
Ten	"	"	20	"	"	-----
Twelve	"	"	24	"	"	-----

FITTED WITH 28 INCH DISCS

(Instead of 24 Inch Discs)

Four	Disc	Plow,	10	Horse	Power	-----
Five	"	"	12	"	"	-----
Six	"	"	15	"	"	-----
Seven	"	"	18	"	"	-----
Eight	"	"	20	"	"	-----
Ten	"	"	25	"	"	-----
Twelve	"	"	30	"	"	-----

Extra strong type plows have 2½-inch axles, 300-pound wheels, one 100-pound weight for each wheel and are equipped with reinforced discs. On five disc plows and upward the frames are reinforced.

One hitch chain is furnished with each plow. When cables or other connections between engine and plows are wanted, extra charge will be made.

GUARANTEE

We guarantee all our plows to do good work in any kind of fallow land and not to break from defect in material in one year, except discs, which we guarantee against splitting on the edge only.

When claims are made under guarantee the parts must be returned to the agent or to the factory.



PLOWING SCENE

SANDERS DISC PLOWS



NEWELL SANDERS PLOW CO.
CHATTANOOGA, TENNESSEE, U. S. A.