

OPERATOR'S AND MAINTENANCE MANUAL

WITH PARTS LISTING

MINI DISC HARROW MODELS

D-10 – 1616 / D-10 – 1618 / D-10 – 1620

D-10 – 2016 / D-10 – 2018 / D-10 – 2020

MODEL NUMBER _____
SERIAL NUMBER _____
DATE OF PURCHASE _____

TO THE PURCHASER:

The care you give your new HARDEE Mini Disc Harrow will greatly determine the satisfaction and service life you will obtain from your new harrow. By observing the instructions and suggestions in this manual, your harrow will serve you for many years.

As an authorized HARDEE Dealer, we stock genuine HARDEE parts, which are manufactured with the same precision and skill as the original equipment. Please use only approved replacement parts. Our factory-trained staff is kept fully informed of the most efficient methods of servicing HARDEE equipment and is ready to assist you.

If you should require additional aid or information, contact us.

Your Authorized HARDEE Dealer

OSHA requires that as a farm employer you should meet certain safety requirements. You should become familiar with and comply with those requirements. Be sure anyone who operates this equipment understands all safety-related items. If this harrow is repainted, be certain that new decals are ordered. Decals pertaining to personal safety must be replaced.

To insure efficient and prompt service, please provide the model number and serial number of your HARDEE Harrow in all correspondence or contacts.

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OPERATING INSTRUCTIONS

Adjustment for Level Disking

It is recommended that the tractor be operated at a speed best suited for soil conditions. High-speed disking will sometimes result in excessive lateral movement of the soil. This may leave an uneven surface behind the disc harrow known as “ridging” and “furrowing”

When disking in a cover crop or where the land is to be reworked, an uneven surface is not objectionable. If the land is to be bare through the winter, furrows and ridges will reduce soil washing. They will help catch and hold moisture, resulting in more water being absorbed by the soil.

Center Ridge

If a ridge of soil is left behind the center of the harrow, decrease the weight on the rear gangs by shortening the upper link (3rd arm), decrease the angle of the rear gangs, or move the gangs farther apart, or do a combination of the three.

Center Furrow

If a furrow is left behind the center of the harrow, increase the weight on the rear gangs by lengthening the upper link (3rd arm), increase the angle of the rear gangs, or move the gangs closer together, or do a combination of the three.

Outer Ridges of Furrows

If ridges or furrows are left behind at the outer ends of the harrows, change the weight on the rear gangs by adjusting the length of the upper link (3rd arm) or change the front gang-cutting angle.

Ground Speed & Adjustments

Where it is necessary to have a level job of disking, the following factors must be considered:

1. Tractor Speed
2. Hitch Adjustment
3. Disc Gang Angle Adjustment
4. Gang Lateral Adjustment

Tractor Speed

Speeds above 5 mph may result in forming of ridges and furrows. The lateral adjustments of the rear gangs will help to overcome this problem.

Operating Procedure

You should never allow soil to “bulldoze” ahead of or flow over the spacer spools. Cutting depth should be controlled to avoid this situation. Maintaining proper cutting depth will have the following advantages:

1. Increase gang-bearing life.
2. Reduce strain on harrow frame and related parts.
3. Reduce load on tractor engine and drive train.
4. Lower fuel consumption due to fewer loads on tractor engine.
5. Reduce wheel slippage and rear tractor tire wear due to lower load.
6. Increase tractors travel speeds due to less rear slippage.

By properly controlling cutting depth, gang-bearing life will be increased with more acres covered per day at a lower cost.

DISC ANGLE ADJUSTMENT

Front and Rear Gangs

WARNING! Lower or block elevated components before servicing or when leaving the machine unattended, elevated component can fall causing serious injury.

Gang Lateral Adjustment

The front and rear gangs are adjustable laterally to compensate for soil conditions and tractor speed. As an initial setting, it is recommended that the front gangs should be adjusted so that bumper washers are centered on harrow frame and clear each other by 3/8 to 1/2 inch; and the rear gangs are approximately 9 inches apart, measured from front edge of disc blades.

Ridging

Make adjustments as needed after the harrow is placed in operation. When a ridge of soil is left behind the center of the harrow, the rear gangs should be set out. Shortening the upper link (3rd arm) can decrease weight on the rear gangs.

Furrowing

When a furrow is formed behind the center of harrow, the rear gangs should be set in. Weight on the rear gangs needs to be increased by lengthening the upper link (3rd arm).

Adjustment

To adjust the front and rear gangs laterally, loosen the bolts securing the gang to the main frame and slide gangs in or out for adjustments needed. It is recommended that the rear gangs should be set in at low tractor speeds (below 5 mph) and set out at high tractor speeds (5 to 6 mph).

STORAGE

Proper storage will add to the life of your disc harrow, and assure its being in good condition for the next session.

The following procedure is recommended:

- Clean off all foreign matter and thoroughly lubricate the harrow.
- Repaint the harrow where the original paint has worn off.
- Coat the disc blades and hydraulic cylinder rods with a good rust preventative.
- Tighten loose bolts and replace any damaged or missing parts.
- Store in a dry place.
- Carefully rotate each gang and check for worn or damaged blades, bent gang shafts, damaged bearings and other parts that may need replacing.

MAINTENANCE

1. Keep all bolts tight

- Check before placing in service.
- Visually inspect all bolts daily.
- Check after first 50 hours or one week's operation.
- Check before and after each session.

2. Do not run with loose disc blades. Keep gang bolts tight!

3. Disc blade, bearing and spool replacement. (Page 7)

- Remove the U-bolt (Item 9) from the Hanger Weldment (Item 24).
- Raise the Harrow and roll the Disc Gang (Item 18) away from the Frame Assembly (Item 19).
- Remove the Hex Nut (Item 4) from the end of the Square Axle (Item 15).
- Slide off the Washers, Blades, Spacers, Hanger Weldments and Spools.
- To replace Bearings remove the bolts that hold the Bearing (Item 14) to the Hanger Weldment (Item 24).

Disc blade, bearing and spool replacement. (Cont.)

- Install all Washers, Blades, Spacers, Hanger Weldments and Spools as shown on page 7.
- Install the Square Axle Hex Nut.
- Install U-bolts.
- Rotate Gang Assembly to be sure it turns freely.

CAUTION!

Never clean, adjust or lubricate a disc that is in motion. Disc blades could cause severe injury.

EXTRA EQUIPMENT

Warning Reflectors

When transporting farm implements on public roads after dusk, it is the responsibility of the operator to provide lighting and reflectors on the rear of the implement in accordance with your state law.

CAUTION!

When transporting machinery over public roads, comply with your local and state laws regarding length, width and lighting.

CAUTION!

Be sure the area is clear of any personnel before safely driving tractor with disc attached.

SMV Emblem

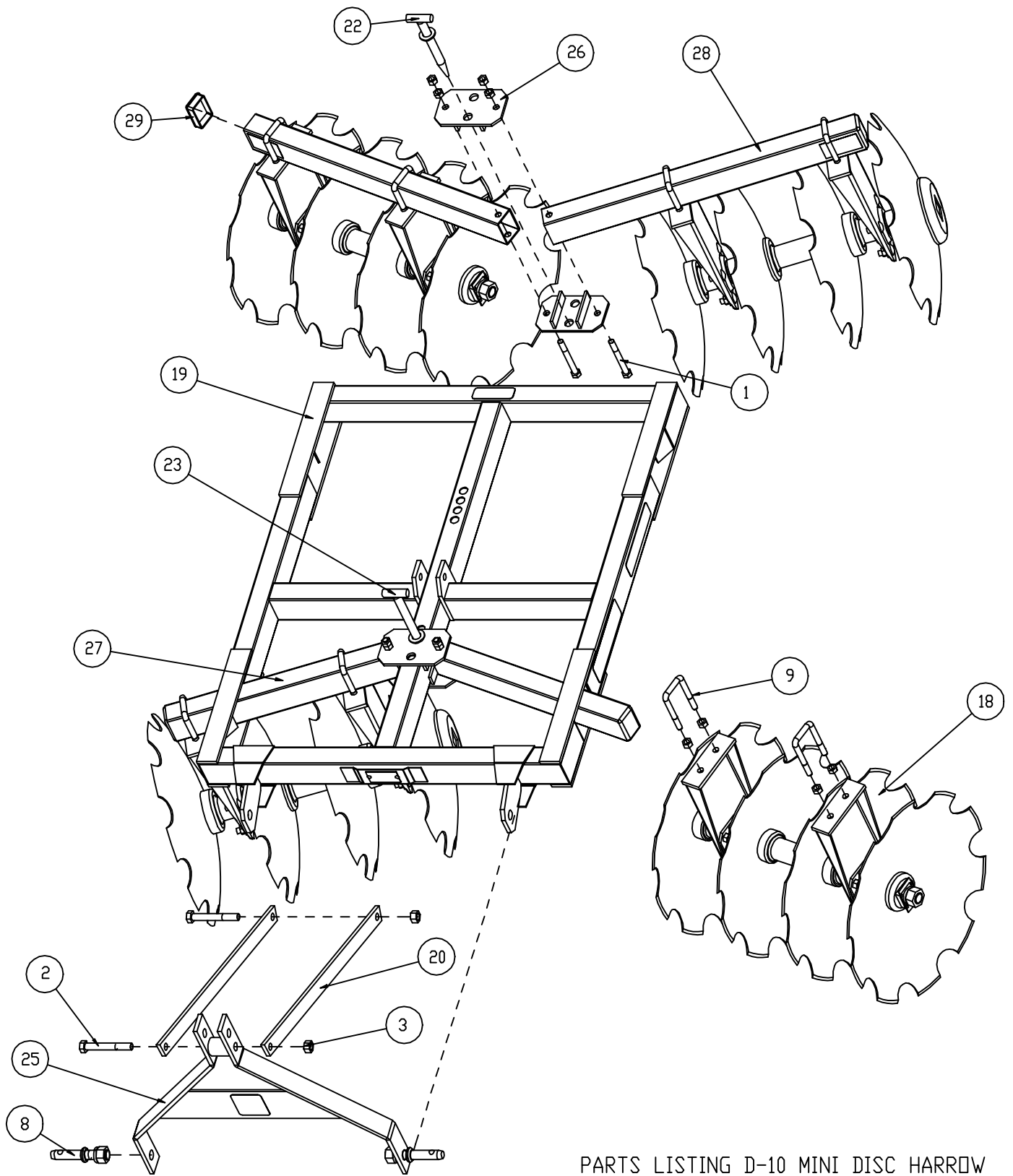
The SMV (Slow Moving Vehicle) emblem is recommended attachment that should be added to your harrow. The SMV emblem can be purchased from your authorized Hardee dealer. Check your state and local laws regarding the placement and use of the SMV emblem.

CAUTION!

Caution, when trailing the disc over public roads, the SMV emblem must be in place for the protection of tractor and motor vehicle operators.

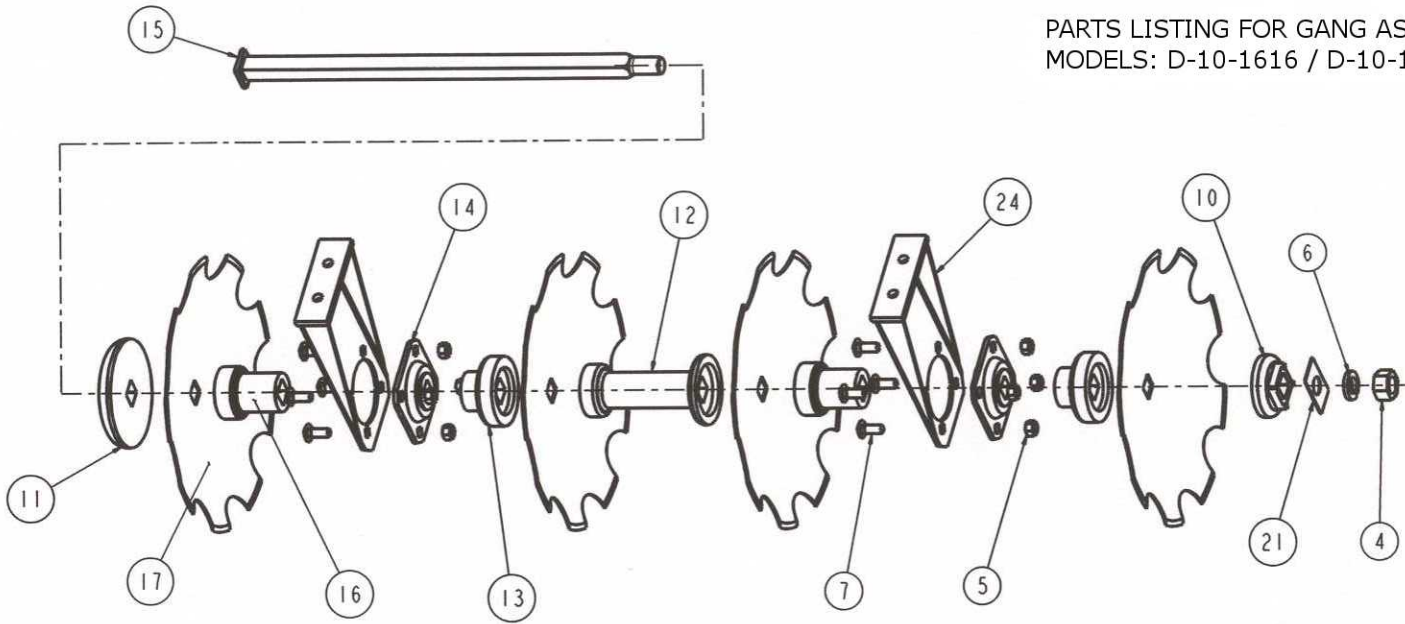
Warning Lamp

Caution, when transporting farm implements on public roads after dusk, it is the responsibility of the operator to provide lighting and reflectors on the rear of the implement in accordance with your state law.

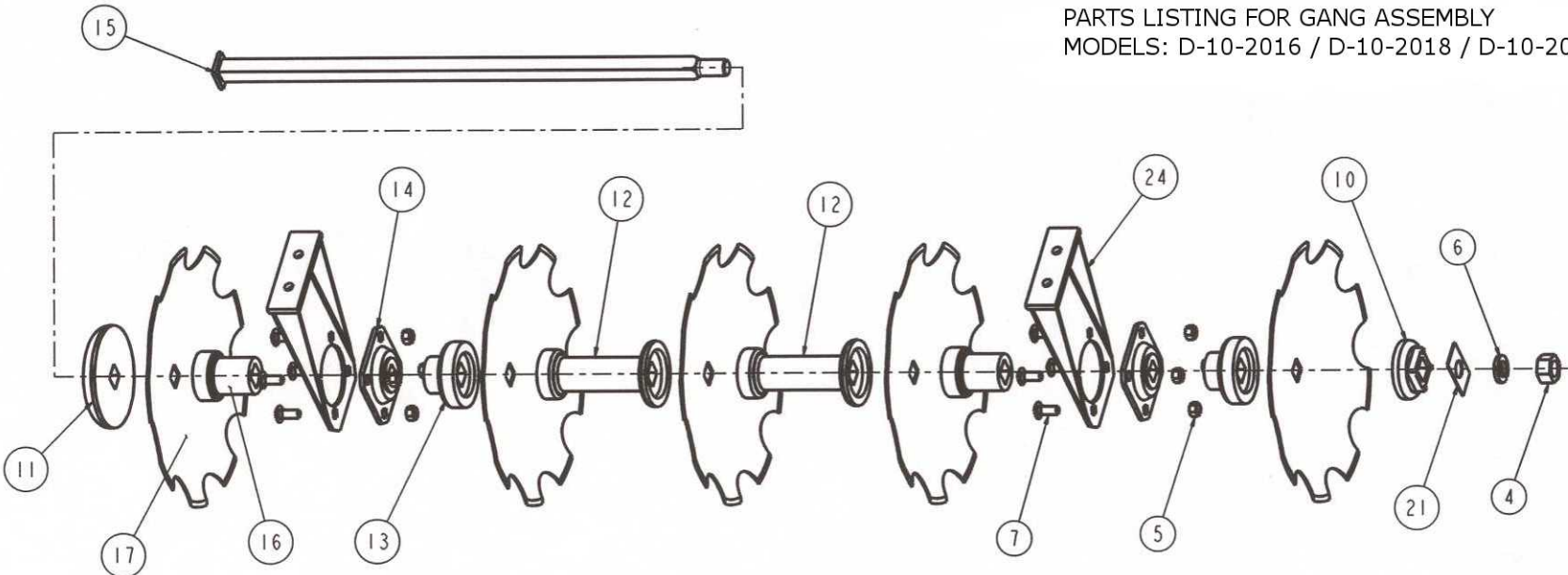


PARTS LISTING D-10 MINI DISC HARROW

MODELS: D-10-1616 / D-10-1618 / D-10-1620
 D-10-2016 / D-10-2018 / D-10-2020



PARTS LISTING FOR GANG ASSEMBLY
 MODELS: D-10-1616 / D-10-1618 / D-10-1620



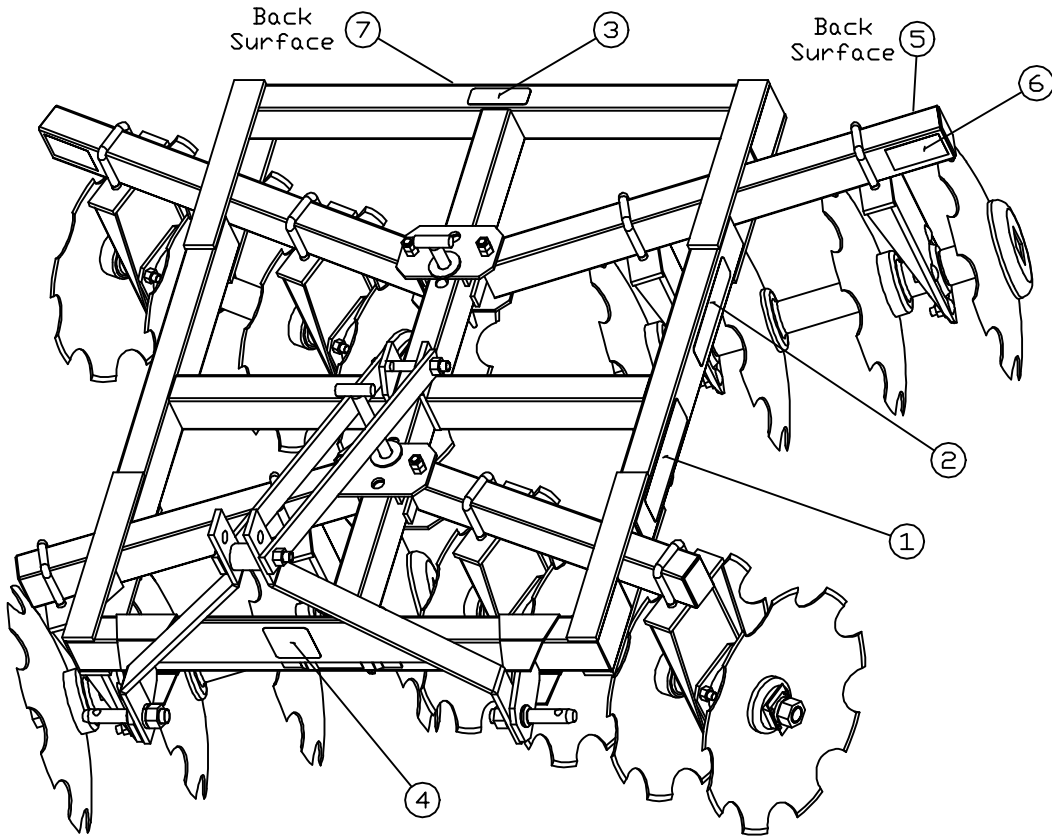
PARTS LISTING FOR GANG ASSEMBLY
 MODELS: D-10-2016 / D-10-2018 / D-10-2020

PARTS LISTING FOR D-10 MINI DISC HARROW

Item	D-10-1616		D-10-1618		D-10-1620		D-10-2016		D-10-2018		D-10-2020		Description
	Part Number	Qty	Part Number	Qty	Part Number	Qty	Part Number	Qty	Part Number	Qty	Part Number	Qty	
1	10078	4	10078	4	10078	4	10078	4	10078	4	10078	4	HEX BOLT (1/2" X 4-1/2" GR. 5 PLATED)
2	10097	2	10097	2	10097	2	10097	2	10097	2	10097	2	HEX BOLT (5/8" X 4 1/2" GR. 5 PLATED)
3	10166	2	10166	2	10166	2	10166	2	10166	2	10166	2	LOCK NUT(5/8" PLATED)
4	10169	4	10169	4	10169	4	10169	4	10169	4	10169	4	HEX NUT (1" PLATED)
5	10176	56	10176	56	10176	56	10176	56	10176	56	10176	56	LOCK NUT (1/2" PLATED)
6	10187	4	10187	4	10187	4	10187	4	10187	4	10187	4	LOCK WASHER (1" PLATED)
7	10274	32	10274	32	10274	32	10274	32	10274	32	10274	32	CARRIAGE BOLT (1/2" X 1-1/4" GR. 5 PLATED)
8	10307	2	10307	2	10307	2	10307	2	10307	2	10307	2	CATEGORY 1 HITCH PIN
9	15963	8	15963	8	15963	8	15963	8	15963	8	15963	8	1/2 X 2 X 4 U-BOLT
10	15200	4	15200	4	15200	4	15200	4	15200	4	15200	4	SMALL WASHER
11	15201	4	15201	4	15201	4	15201	4	15201	4	15201	4	LARGE END CAP
12	15202	4	15202	4	15202	4	15202	8	15202	8	15202	8	7-7/16 PLAIN SPOOL
13	15203	8	15203	8	15203	8	15203	8	15203	8	15203	8	2-3/8" SPACER
14	15204	8	15204	8	15204	8	15204	8	15204	8	15204	8	1" SQ. DISC HARROW BEARING
15	15205	4	15205	4	15205	4	15209	4	15209	4	15209	4	1" SQUARE AXLE
16	15206	8	15206	8	15206	8	15206	8	15206	8	15206	8	3-5/8 SPACER
17	15207	16	15208	16	15496	16	15207	20	15208	20	15496	20	CUTOUT BLADE W/ 1" SQ. HOLE
18	60504	4	60505	4	60562	4	60506	4	60507	4	60563	4	D-10 GANG ASSEMBLY
19	60510	1	60510	1	60510	1	60510	1	60510	1	60510	1	D-10 FRAME ASSEMBLY
20	60522	2	60522	2	60522	2	60522	2	60522	2	60522	2	A FRAME BRACE
21	60525	4	60525	4	60525	4	60525	4	60525	4	60525	4	GANG AXLE NUT RETAINER
22	60527	1	60527	1	60527	1	60527	1	60527	1	60527	1	GANG PIN REAR WELDMENT
23	60530	1	60530	1	60530	1	60530	1	60530	1	60530	1	GANG PIN FRONT WELDMENT
24	60534	8	60534	8	60564	8	60534	8	60534	8	60564	8	D-10 HANGER WELDMENT
25	60536	1	60536	1	60536	1	60536	1	60536	1	60536	1	D-10 A FRAME WELDMENT
26	60539	4	60539	4	60539	4	60539	4	60539	4	60539	4	GANG TIE PLATE WELDMENT
27	60519	2	60519	2	60519	2	60520	2	60520	2	60520	2	GANG BEAM (22" 1616 - 1618) (30" 2016 - 2018)
28	60520	2	60520	2	60520	2	60521	2	60521	2	60521	2	GANG BEAM (30" 1616 - 1618) (35-1/2" 2016 - 2018)
29	15464	4	15464	4	15464	4	15464	4	15464	4	15464	4	TUBING INSERT, 3" X 2" X 10 GAGE

DECAL LISTING

DECAL LISTING



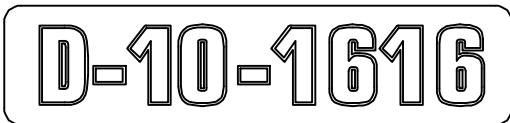
ITEM 1



ITEM 3



ITEM 5 or 6



ITEM 2



ITEM 4



ITEM 7

Item	Part Number	Qty	Description
1	11032	2	Small Hardee Logo Decal
2	15210	2	D-10-1616 Model Decal
2	15211	2	D-10-1618 Model Decal
2	15894	2	D-10-1620 Model Decal
2	15212	2	D-10-2016 Model Decal
2	15213	2	D-10-2018 Model Decal
2	15895	2	D-10-2020 Model Decal
3	11636-ITEM_4	1	Toe Crush Decal (4 X 1.25)
4	11636-ITEM_5	1	Crushing Hazard Decal (3 X 3)
5	15852	2	Red Reflector Decal
6	15853	2	Yellow Reflector Decal
7	11850	1	Web Site Decal

NOTE: Part number 11636 can not be ordered as individual items.

LIMITED WARRANTY

This is to certify that EVH Manufacturing Company warrants this new implement to be free of defects in material and workmanship under normal use and service for a period of 12 months for Standard Use and 90 days for Commercial Use from the original date of delivery to the original purchaser with exceptions of items listed below.

Parts Warranted	Duration
Gearboxes (STANDARD USE)	3 Years from date of delivery
Hydraulic Pump & Motor (STANDARD USE)	3 Years from date of delivery
Gearboxes (COMMERCIAL USE)	90 Days from date of delivery
Hydraulic Pump & Motor (COMMERCIAL USE)	90 Days from date of delivery

Our obligation under this warranty shall be limited to repair or replacement of any part or parts of this implement which in our judgment shows evidence of such defect and provided further that said part or parts shall be removed and returned by the owner at the owner's expense to EVH Manufacturing Company, Loris, SC, through an authorized dealer, transportation prepaid, free and clear of liens or encumbrances. **This warranty shall not include normal wear items.**

Changes or alterations to the implement made without the written authorization of the manufacturer will render this warranty void.

This warranty does not obligate this company to bear any labor costs in replacement of defective parts.

EVH Manufacturing Company reserves the right to make changes or improvements in its equipment at any time, with the express understanding that such changes or improvements do not impose any obligation of the company to install such changes or improvements on implements previously manufactured.

This warranty is void unless registration card is returned to us within thirty (30) days of date of purchase.

EVH Manufacturing Company



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