

# CLASS IV HYDRAULIC CATTLE DEHORNER

INSTALLATION

OPERATION

MAINTENANCE

PARTS LIST

USDA  
APPROVED



FOR MORE INFORMATION, CONTACT:

**BEST & DONOVAN**

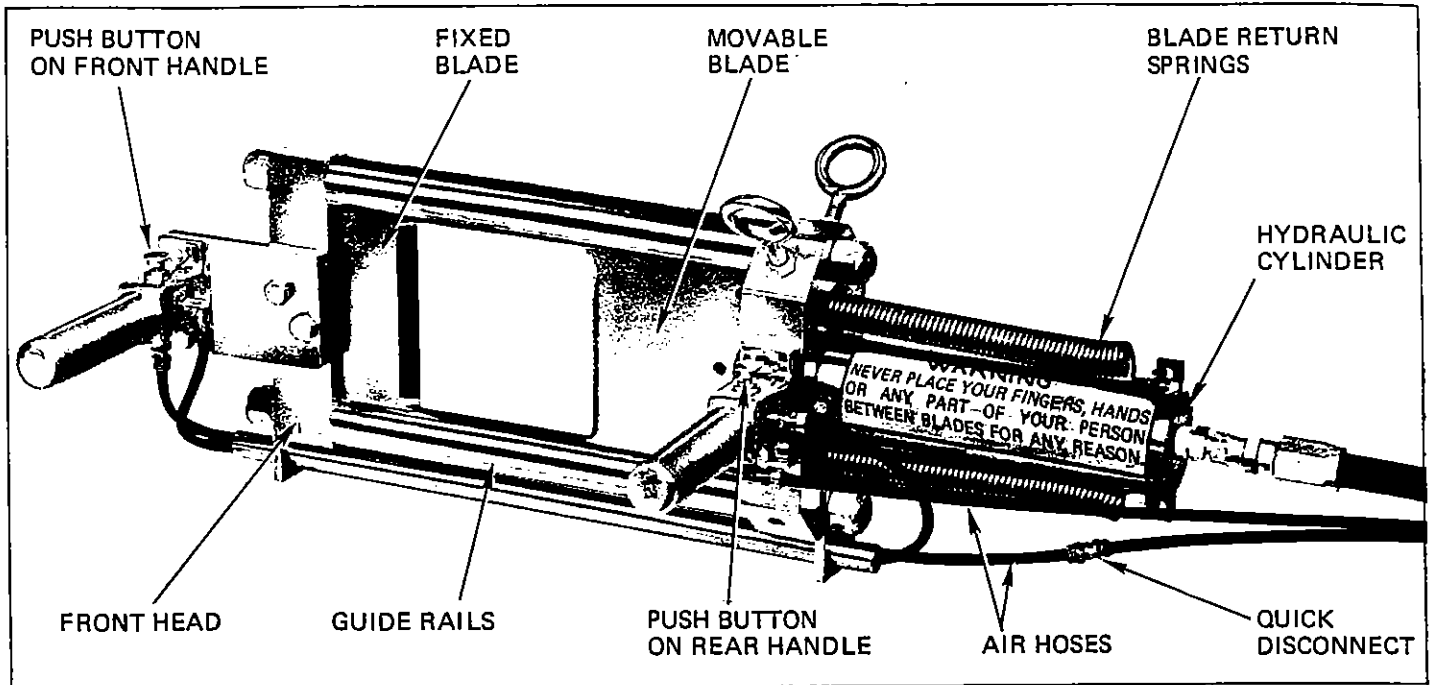
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# CLASS IV DEHORNER



## DESCRIPTION AND USE

The Best & Donovan Class IV Dehorner is composed of two units — the hand operated cutting device or dehorner, and the hydraulic unit which develops the power to operate the cutting unit. These are connected by lengths of air hose and hydraulic line to accommodate the physical requirements of the installation.

The dehorner is a top quality cutting device built to rigid standards of the industry. Its metal components are made of either high grade stainless steel or corrosion resistant materials to allow repeated system cleaning and sanitizing. It is designed to perform the dehorning operation in the bleeding area, on the rail, (or utilizing a head rack) under continuous use with minimum down-time for normal maintenance and cleaning. Its rugged design assures dependable service removing hard animal horns under peak load conditions.

The dehorner is a hand operated cutting device, weighing approximately thirty (30) pounds. Two eyebolts, located at the balance point of the unit, allows for overhead suspension thus eliminating the need for continuous support by the operator. This allows his efforts and concentration to be conserved for fast handling, and accurate placement for close-to-the-skull dehorning.

The dehorner is equipped with two sharp, tool-steel blades designed and constructed for efficient operation and durability. One blade is stationary at the front end of the unit and the other is a moving blade which traverses within slots of the guide rails. Both blades are made of top quality tool steel, are beveled and hardened to retain their sharp edge and cutting quality.

In the dehorning operation the animal horn is positioned between the open blades and then the unit is activated. When activated the movable blade traverses along the slots in the

guiderails and closes against the stationary blade and in so doing cuts off the horn. For speed and efficiency of operation high hydraulic pressure (6000 p.s.i.) is utilized. Stainless steel springs return the movable blade to the open position when pressure is released after dehorning is completed. As is true with any device with cutting blades precaution must be observed in handling the unit. Operators and maintenance personnel must be alert at all times and must be ever mindful that the dehorner is a device designed for cutting. It must be handled and regarded with respect to prevent the possibility of injury.

Dual handles, each equipped with a push button control are designed into the dehorner to provide operator protection. Both push buttons must be depressed in order for the hydraulic unit to function and build pressure to move the cutting blade. If either one of the push buttons is released, hydraulic pressure is removed and the movement of the blade stops. Relief valves and by-pass valves in the hydraulic unit prevent pressure build-up when both push buttons are not depressed.

It is recommended that the air/oil hydraulic system which powers the dehorner be situated overhead where periodic maintenance can be given with least inconvenience. Being completely air operated this unit is free from the possibility of electrical shorting or shocking which is a highly desirable protective feature, particularly in moist environments.

A complete uninterrupted cutting cycle, performing a dehorning operation, takes approximately five seconds. The hydraulic unit causes the blade to close with a pulsating action rather than a swift continuous stroke motion. This enables the operator to have better control over the unit and prevents heavy impacts which could make the unit difficult to hold.

# INSTALLATION INSTRUCTIONS

## IMPORTANT

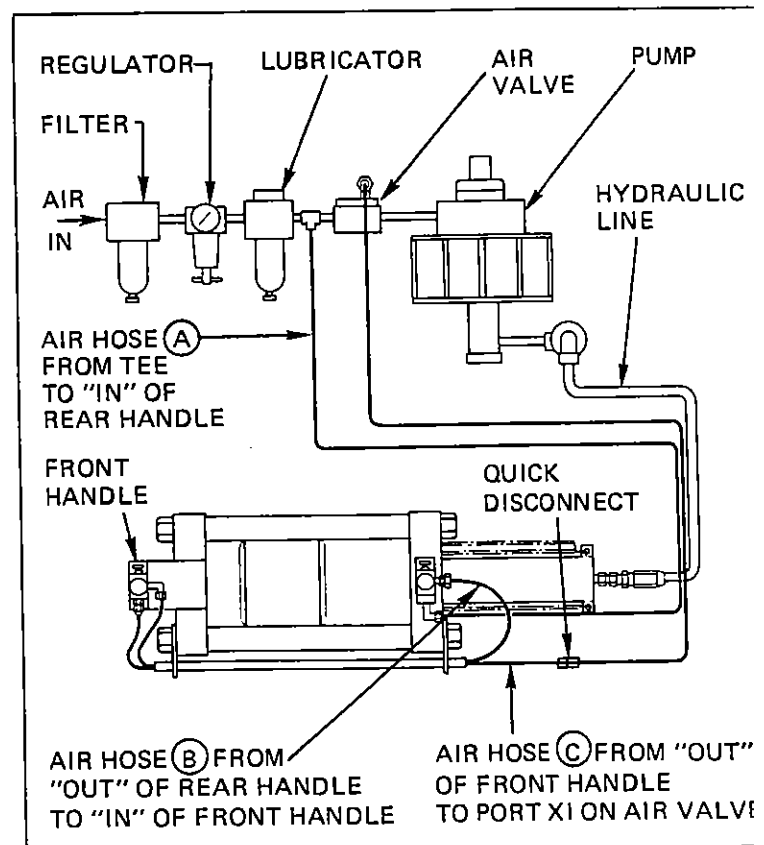
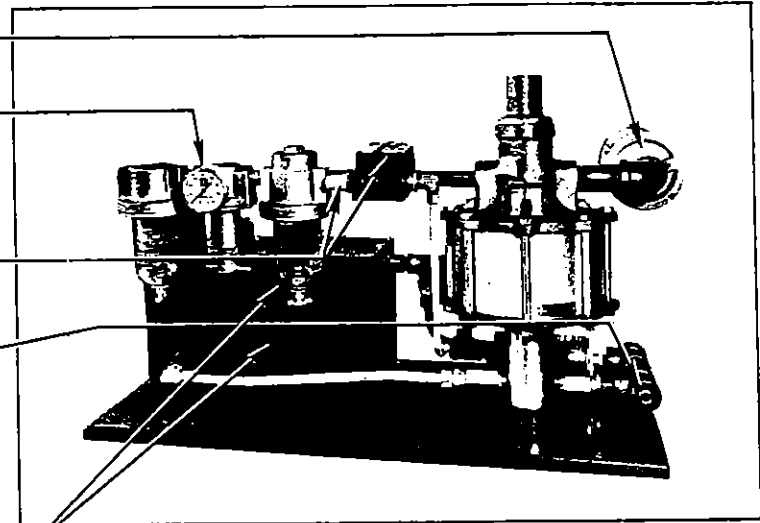
Inspect your Best & Donovan Class IV Hydraulic Dehorner for possible damage as soon as you receive it. If you discover any damage, notify carrier's agent at once and request him to inspect the damage, also notify Best & Donovan. Also check the packing list against the contents to be sure you have all parts. If no damage is found, place the hydraulic unit and Dehorner on a table or bench for connection of hoses, filling of reservoirs and test operation before placing it in service on the "kill" floor.

**NOTE:** Carefully read the following instructions before attempting to assemble and operate Dehorner.

- 1 Remove plastic plug from pump and install muffler.
- 2 Remove 1/8 pipe plug from the regulator and install a 0-125 air pressure gage. Do not remove "snubber" from the gage.
- 3 Remove plastic plugs from the tee between the lubricator and air valve and from position XI on the air valve. Install a 90° brass fitting in each location.
- 4 Remove 3/8 pipe plug from pipe tee at the lower right side of the pump, install a steel fitting and attach hose.
- 5 Fill both the 2 gallon oil reservoir and the air lubricating unit with turbine #9, Gargoyle DTE light weight, or any good grade oil with equivalent properties.
- 6 Attach hydraulic hose to the steel fitting on the Dehorner cylinder.
- 7 Connect one end of an air hose (A) to (refer to schematic) 90° brass fitting at tee and the other end to the "in" fitting on the rear handle of the Dehorner. Another line (B) runs from the "out" on the rear handle through a tube attached to side of Dehorner to "in" port of front handle. Connect a third air hose (C) and quick disconnect from "out" of front handle (run through tube) to port XI on air valve. All hose connections are now complete.

**NOTE:** Top out the oil reservoir if the oil level cannot be seen on depth gage of reservoir during cycling of Dehorner. The oil-air mist adjustment on the lubricator is factory pre-set and requires no further adjustment.

- 8 The unit is ready for test operation when the pressurized air supply is connected to the "air in" port of the hydraulic unit's filter. Minimum air pressure required for proper operation is 100 psi.



## INSTALLATION (cont.)

- 9 Refer to the installation and operating instruction sheet on the hydraulic pump (SC Hydraulic Eng. Corp.) (supplied with the unit) for proper instructions on starting the pump.
- 10 The Dehorner is designed with dual controls, one push button on each handle. Both must be depressed to actuate the Dehorner, releasing either button will cause the movable blade to retract. The control buttons operate the pump, valve and Dehorner.

### WARNING

This unit is designed to cut off any object placed between its blades. **NEVER PLACE your FINGERS, HANDS or any part of your person between blades for any reason.**

- 11 Cycle the Dehorner several times to purge the hydraulic system of air. Hold the Dehorner below hydraulic unit during cycling to purge air.

### CAUTION

If pump does not prime promptly when started, release push buttons and check all air and hydraulic connections. Operating the pump dry could damage the hydraulic piston and cylinder.

- 12 Now that the hydraulic unit and Dehorner have been connected, test operated and purged of air, it can be placed in service on the kill floor.
- 13 Install the hydraulic unit in a convenient overhead location which is remote from excessive moisture and dirt, approximately 8 to 10 feet from the floor as more height may restrict returning time of movable blade.
- 14 Suspend the Dehorner from a model 40-J overhead spiral spring counterbalance, 30 to 45 pound capacity (B&D part no. 6339400).
- 15 Provide a means such as a wall mounted bracket for holding the Dehorner out of the operators way when it is not being used.
- 16 Provide a water hose and a sterilizer so that the operator may frequently clean and sterilize the Dehorner.

## OPERATOR PRECAUTIONS

1

Be alert at all times. Think safety.

2

Respect your equipment and know how to properly operate it.

3

Do not attempt to operate the Dehorner until you have read and understand the instructions herein.

4

Do not try to defeat the equipment's dual control feature by taping one button closed as it is designed for your protection.

5

Be smart and wear safety glasses. But don't wear watches, bracelets, rings or necklaces. Also don't wear loose fitting clothing or neckties.

6

Also wear proper footwear to eliminate the possibility of slipping.

7

Don't fool around, ANY POWER TOOL can cause death or injury.

8

Never place fingers, hands or any part of your person between blades of Dehorner.

9

If a blade jams, notify supervisor or maintenance department.

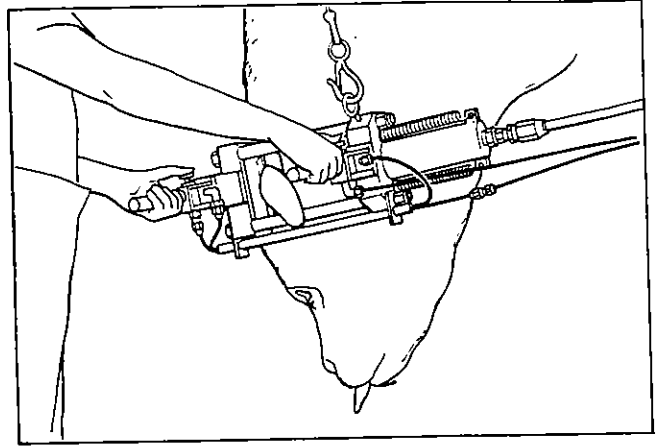
# OPERATING INSTRUCTIONS

## HOLDING THE DEHORNER

The Best & Donovan Class IV Hydraulic Dehorner is designed and equipped with dual controls for your protection. One hand must be placed on each push button control handle and **both** push buttons depressed to actuate the Dehorner. The push buttons should only be depressed to close the movable blade against the fixed blade and dehorn cattle.

The movable blade travels forward, in the slots of the guide rails, producing a "pulsating" type action which is designed to achieve the most effective cutting cycle.

After removing the first horn, release push buttons and the movable blade will retract. Cutting off the next horn may begin any time the operator feels there is ample clearance to place the Dehorner over that horn. It is not necessary to wait until the blade is fully open. The push buttons may be depressed any time during the blade return cycle. When push buttons are pressed the blades will close immediately; it is not necessary to wait until the blade is fully open. The operator should never twist or cock the Dehorner, while



removing the horns, as this action tends to jam or break the blades.

The operator should keep the Dehorner clean and sterilized and should notify his supervisor or the maintenance department whenever the blades begin getting dull, or there is twist in the slots, or the blade is shaving the slots in the guide rails or the blade returns slowly.

## FREEING JAMMED BLADE

### WARNING

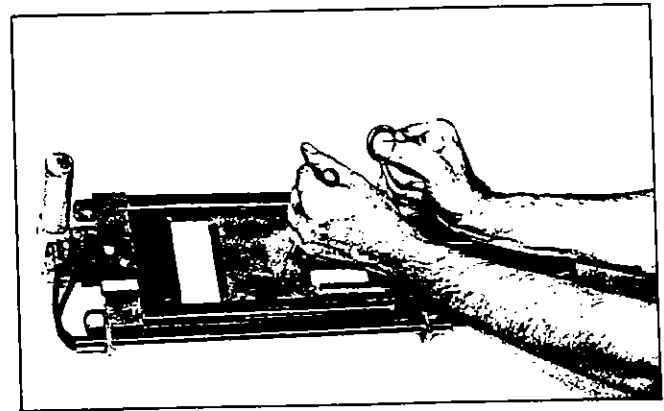
Never place your fingers, hands or any part of your person between blades for any reason.

The movable blade may become jammed for any one or more of the following reasons:

1. The slots in the guide rails are dirty.
2. The extension springs are worn out and are unable to return the blade to its open position.
3. The blade is bound in its slots due to dehorner being damaged — twisted out of square.
4. The hydraulic relief valve or air valve has not released, therefore pressure is still applied to the dehorner's cylinder.

The operator should not attempt to correct any jam other than cleaning of dirty guide rail slots. Clean the guide rails as follows:

- A. Dip the dehorner in a sterilizing tank and attempt to cycle the blades.
- B. If foreign matter has locked the blade in any position, proceed as follows:
  1. Depress both push buttons to close the blades.
  2. Have someone spray both guide rails clean with warm water.
  3. Release push buttons to allow movable blade to return to its open position.
  4. Again spray guide rail slots with warm water.



5. If the movable blade is still locked in any forward position, disconnect air pressure line at quick disconnect, then insert the tool provided in the open hole of the blade and pull it back using this tool only.

### WARNING

NEVER place your hand, fingers, or any part of your person between the blades at any time. Do not attempt to pull blade back by any means other than tool in hole as shown.

6. If you are unable to pull the blade back with the tool (as shown), notify your supervisor or the maintenance department as they will have to correct the jam.

**NOTE:** The force exerted by the movable blade is approximately 14,500 pounds.

# MAINTENANCE PROCEDURES — DEHORNER AND HYDRAULIC UNIT

## GENERAL

Maintenance personnel should gather all maintenance and parts list information on both the Dehorner and its hydraulic unit. They should read and understand all maintenance and servicing instructions then file it where it is easily retrievable.

Follow these enclosed maintenance instructions (SC Hydraulic Engineering Corp.) and service the hydraulic unit components; filter, regulator, lubricator, valve and hydraulic pump as stated.

## WARNING

**Disconnect pressurized air line from hydraulic unit filter and bleed pressure before servicing any pneumatic component. Disconnect hydraulic line to dehorner cylinder before servicing it.**

## BLADE SHARPENING

Keep the Dehorner blades sharp at all times. The leading edge of both blades must be kept straight and square with the slots in the guide rails. The outer corners of the movable blade should be slightly rounded to prevent the blade from damaging the slots in which it travels. The blades bevel should be 30 degrees to its leading edge and the blade stops should always be even.

## BLADE REALIGNMENT

The movable blade should slide freely at all times. If it does not, the Dehorner has probably been bumped out of square. To realign it, backoff the stop nuts (Ref. No. 23 on parts list) on the ends of the guide rails (Ref. No. 9) at the front end of the Dehorner. This allows the blades and rails some freedom. Now lightly retighten the stop nuts, in

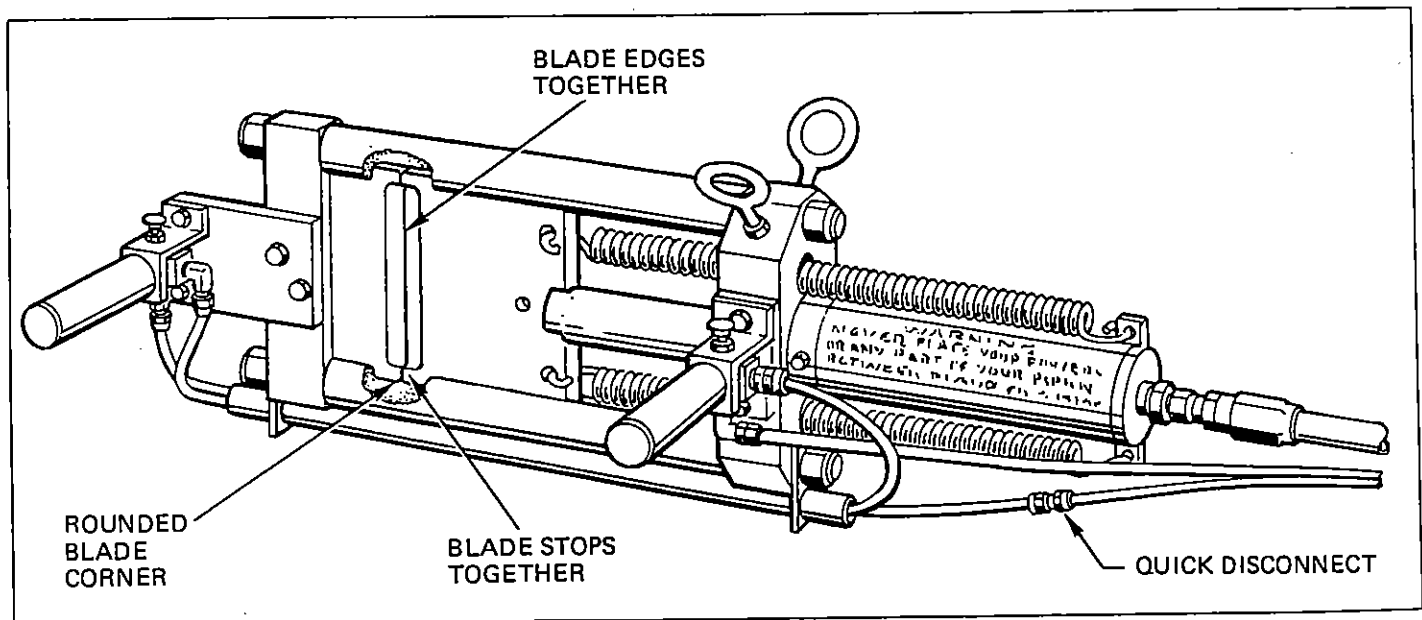
sequence, making sure both blades slide freely (may be necessary to back off set screws (Ref. No. 8) which hold fixed blade in guide rails). It also may be necessary to tap the guide rails "in" or "out." When taping the rails "out", use a piece of 1/4 inch thick steel in the slot on the end of the rail. The Dehorner may also be slightly twisted into alignment using a steel bar. Note: Be sure all stop nuts are tight and both set screws holding fixed blade are tight.

## TO REPLACE BLADES

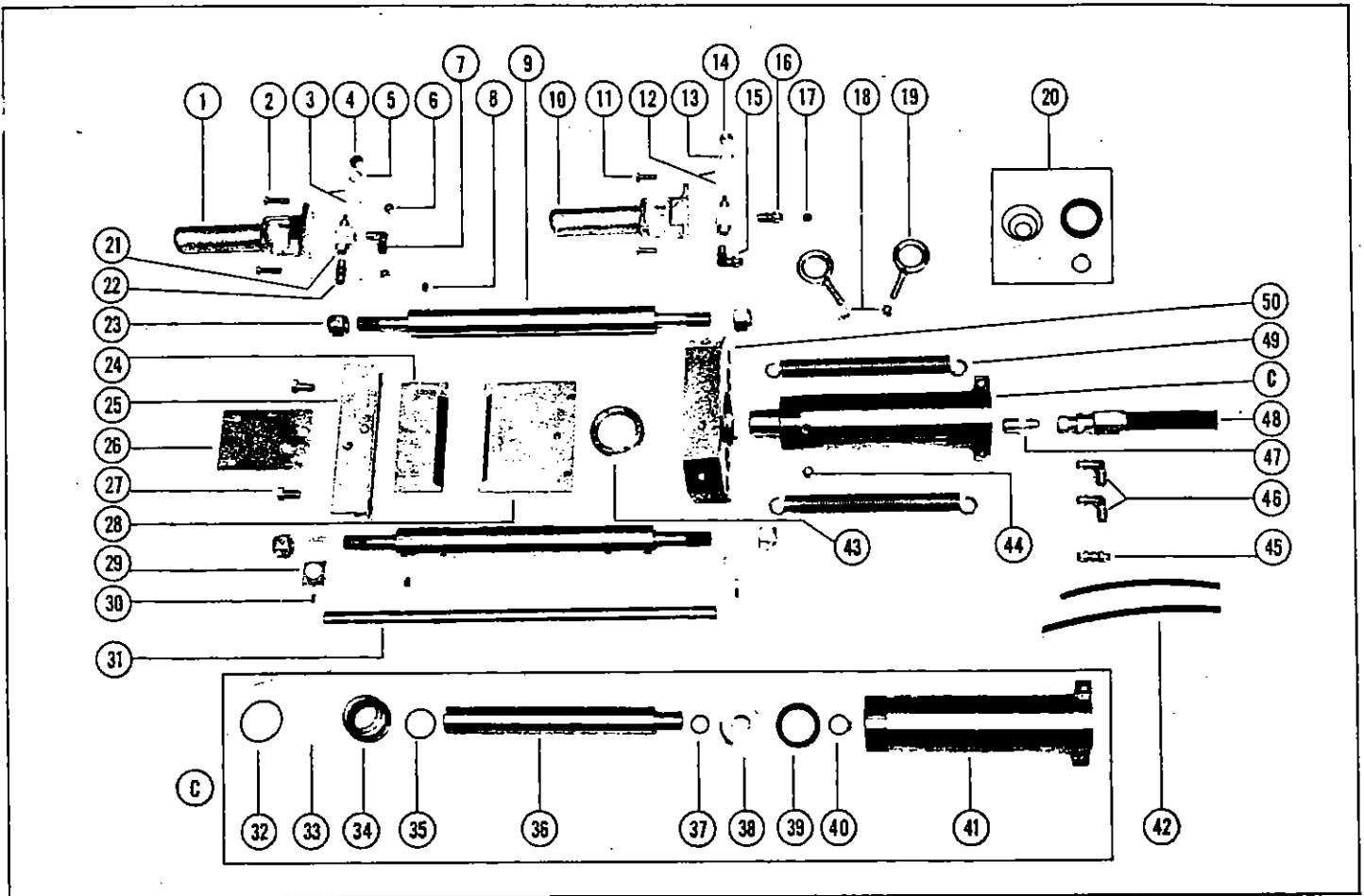
The blades will break only if they do not come together square. This is caused by the Dehorner being racked or by the operator twisting it during a dehorning operation. To replace the blades, remove both stop nuts (Ref. No. 23), and front head (Ref. No. 25) from the Dehorner. Loosen two set screws (Ref. No. 8) and slide fixed blade out of guide rail slots. Remove springs from holes in movable blade and slide it from the guide rail slots. Install new blades, insert front head over ends of guide rails, thread stop nuts on ends of rails and align as stated in the preceding paragraph. Tighten set screws in rails against fixed blade.

The Dehorner and hydraulic unit has been carefully engineered and manufactured by Best & Donovan and should provide efficient and dependable operation for many years. However, if you ever need technical assistance or replacement parts, please contact or write Best & Donovan.

**NOTE: We recommend that you purchase those parts recommended on the parts lists and maintain these parts in stock for servicing requirements.**

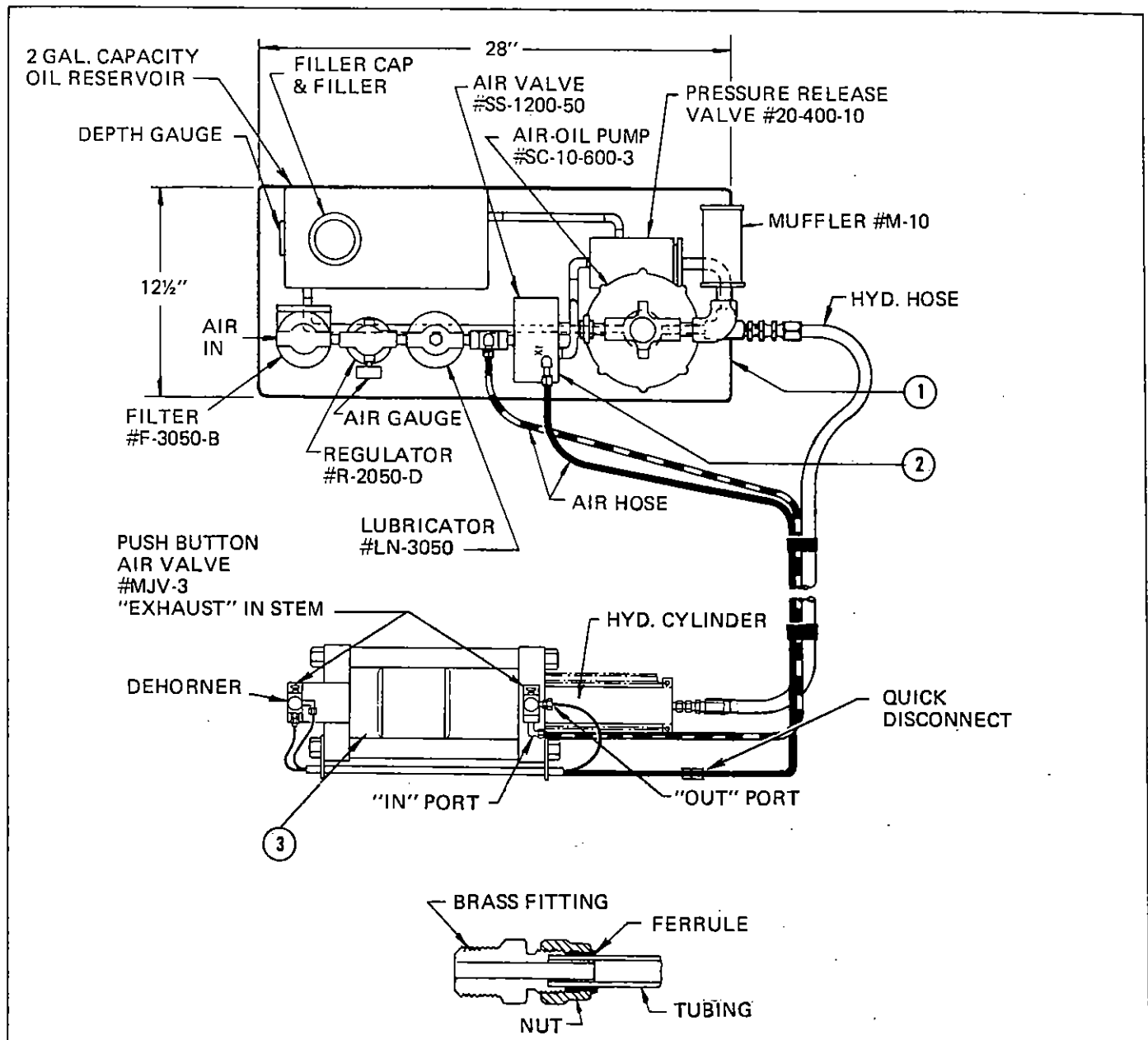


# DEHORNER REPAIR PARTS



Key No.	Part Name	Part No.	Qty.	Rec'd. Spare	Key No.	Part Name	Part No.	Qty.	Rec'd. Spare
1	Front Valve Handle	6521800	1		29	Tube Bracket	6530600	2	
2	Screw	9901494	2		30	Set Screw	9901835	2	
3	Lock Washer	6523493	2		31	Tube	6530500	1	
4	Push Button	6523893	1	2	32	"O" Ring	In Kit 20		
5	Nut	6045100	1		33	Wiper Ring	In Kit 20		
6	Nut	9902308	2		34	Gland	6527900	1	
7	Elbow, 1/8" Male	6524093	1		35	"O" Ring	In Kit 20		
8	Set Screw	9901880	2		36	Piston Rod	6527500	1	
9	Guide Rail	6530300	2	2	37	"O" Ring	In Kit 20		
10	Rear Valve Handle	6521800	1		38	Piston	6527700	1	
11	Screw	9901410	2		39	O U Cup	In Kit 20		
12	Lock Washer	6523493	2		40	Snap Ring	In Kit 20		
13	Nut	6045100	1		41	Cylinder Tube	6527300	1	
14	Push Button	6523893	1		42	Air Hose (order ft. req'd.)	6523393	39 ft.	
15	Elbow, 1/8" Male	6524093	1		43	Lock Nut	6521600	1	
16	Connector, 1/8" Male	6523193	1		44	Breather Vent	6528100	1	
17	Ferrule	6522993	8	8	45	Air Tube Union	6524293	1	
18	Nut	9901680	2		46	Elbow, 1/4" Male	6523593	2	
19	Eye Bolt	6522693	2		47	Hydraulic Hose Fitting	6529700	1	
20	Packing Kit	6529300	1	1	48	Hydraulic Hose Assy.	6340700	1	
21	Air Valve, 3-Way	6523293	2	2	49	Spring Extension	6506600	2	2
22	Connector, 1/8" Male	6523193	1		50	Cylinder Head	6521000	1	
23	Nut, Elastic Stop	9902314	4		C	Cylinder Complete	6520159	1	
24	Fixed Blade - 3/8"	6530100	1	2	51	Blade Unjamming Tool (Not Illustrated)	6530800		
25	Front Head	6530000	1						
26	Front Handle Plate	6530400	1						
27	Screw	9901440	2						
28	Movable Blade - 3/8"	6530200	1	2					

# HYDRAULIC ACCESSORIES & PARTS



### PARTS NOT ILLUSTRATED

Ref. No.	Description	Prime No.	Ref. No.	Description	Prime No.
1	Hydraulic Pump Complete	6500059	4	Air Valve Packing Kit -1	
2	Air Valve Parker Hannifin	6529600		Parker Hannifin	6529693
		6529800		Skinner	6529893
3	Cutter Unit Complete with 3/8" Blades	6500157	5	Hydraulic Pump Packing Kit -1	6529993

### ORDERING REPLACEMENT PARTS

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