

PARTS & SERVICE MANUAL

(AIR & 24 VOLT CONTROLLED)
HYDRAULICALLY OPERATED

MODEL "E-24"
CATTLE DEHORNER & HOCK CUTTER

MODEL "E-24/HHD"
HOG HEAD DROPPER & NECK BREAKER

MODEL "E-24/LD" LOIN PULLER

MODEL "E-23"
SHEEP & GOAT HORN CUTTER

USDA APPROVED

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BEST & DONOVAN

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E-23" & "E-24" SERIES CUTTERS SPECIFICATION SHEET

CUTTER NAME	WEIGHT	BALANCER	OVERALL LENGTH	BLADES	BLADE OPENING
MODEL "E-24/HHD" HOG HEAD DROPPER & NECK BREAKER	38.5 lbs. (17.48 Kilos.)	6342500	42 1/2" (1079.50mm)	9762700	8 3/4" CAPACITY (225.25mm)
MODEL "E-24/LD" LOIN DROPPER	49 lbs. (22.25 Kilos.)	6342600	49 " (1248.52mm)	9760350	9" (228.60mm) WIDE 17" (431.80mm) DEEP
MODEL "E-24" HOCK CUTTER	38.5 lbs. (17.48 Kilos.)	6342500	26" (66.20mm)	9750360	4" (101.60mm) WIDE 7" (177.80mm) DEEP
MODEL "E-23" SHEEP & GOAT HORN CUTTER	35.5 lbs. (16.18 Kilos.)	6342500	22 3/8" (570mm)	9750260	HORNS TO 4 3/8" dia. (111mm)
HYDRAULIC POWER UNITS DUAL HANDLE - 24 VOLT CONTROI DUAL HANDLE - AIR SIGNAL CONT			PART NO. 9710002 9710004		

INSTALLATION INSTRUCTIONS

WARNING

ALWAYS DISCONNECT TOOL FROM POWER SOURCE & TURN OFF THE HYDRAULIC UNIT BEFORE ATTEMPTING TO PERFORM ANY REPAIRS, MAKING ADJUSTMENTS, CLEANING, TOUCH-UP OR SHARPENING BLADES.

INSTALLATION OF CUTTER IN REFERENCE TO THE MAIN RAIL

<u>CAUTION</u>: READ INSTRUCTIONS AND REFER TO THE DIAGRAM IN THIS MANUAL FOR CUTTER INSTALLATION

INSTALL ONE (1) METER OF TRACK RAIL PARALLEL WITH THE DRESSING CHAIN FOR THE COUNTERBALANCER.

A 6342500 OR 6342600 COUNTERBALANCER IS RECOMMENDED FOR PROPER INSTALLATION OF THIS TOOL.

NOTE: REFER TO THE SPECIFICATION PAGE TO IDENTIFY THE COUNTERBALANCER THAT IS RIGHT FOR YOUR APPLICATION.

NOTE: IT IS RECOMMENDED TO ATTACH A SAFETY CHAIN BETWEEN THE COUNTER-BALANCER AND THE TRACK RAIL.

ADJUST THE COUNTERBALANCER TO ALLOW THE CUTTER UNIT TO HANG AT REST AT THE ANIMALS AREA THAT IS BEING WORKED ON OR JUST ABOVE THE OPERATORS WAIST.

INSTALLATION OF HYDRAULIC POWER UNIT WITH 24 VOLT CONTROL CIRCUIT

REFER TO THE MANUALS SHIPPED WITH THE HYDRAULIC POWER UNIT WHEN SHIPPED FOR MORE DETAILED INSTALLATION INSTRUCTIONS.

THE HYDRAULIC POWER UNIT IS MOST ADVANTAGEOUS WHEN INSTALLED ABOVE THE WORKING AREA OF THE CUTTER UNIT.

INSTALLATIONS SHOULD BE DONE BY A HYDRAULIC & PIPE FITTING TECHNICIAN TO MAKE SURE ALL HARD PIPING, HOSES, FITTINGS AND HANGERS ARE CORRECT FOR THE PRESSURES BEING USED.

ADD THE HYDRAULIC OIL TO THE RESERVOIR. MAKE SURE THAT THE OIL IS FILTERED THROUGH A MINIMUM OF 10 MICRON FILTER BEFORE ADDING TO THE SYSTEM. FILTERING THE OIL EVEN WHEN ADDING A SMALL AMOUNT WILL BENEFIT THE UNIT TOWARDS A LONGER OPERATING LIFE.

NOTE: OIL LEVEL SHOULD BE CHECKED PERIODICALLY TO MAINTAIN AT LEAST A HALF OF SIGHT GLASS IN THE RESERVOIR ..

<u>CAUTION</u>: DO NOT READJUST ANY PRESSURE SETTINGS. THESE ARE PRE-5ET AT THE FACTORY.

MAXIMUM PRESSURE RECOMMENDED IN CLOSED POSITION IS 2000 P.S.I & 600 P.S.I IN THE OPEN POSITION.

NOTE: MAKE SURE THAT THE LOCKING NUT ON THE PRESSURE ADJUSTING SCREW STAYS TIGHTEN DOWN.

ATTACHING POWER SOURCES TO CUTTER UNIT

WARNING

KEEP ALL BODY PARTS AWAY FROM THE BLADES AT ALL TIMES WHEN INSTALLING OR TEST THE CUTTER WHEN THE POWER SOURCES ARE ENGAGED.

CAUTION: KEEP ALL DISCONNECTS IN THE OFF POSITION WHILE FIRST HOOKING UP THE CUTTER UNIT TO ITS POWER SOURCES.

NOTE: BEFORE ACTIVATING THE CUTTER **UNIT**, **MAKE** SURE THAT THE HYDRAULIC PUMP IS TURNING IN THE CORRECT DIRECTION ACCORDING TO ITS INSTRUCTIONS.

ATTACH HOSES TO THE CUTTER UNIT. THE HOSES SHOULD BE MATCHED BY THEIR COUPLINGS FOR THE CORRECT FLOW IF THE SYSTEM IS PURCHASED FROM BEST & DONOVAN. IF AFTER STARTING THE UNIT THE BLADES DO NOT OPERATE IN THE CORRECT DIRECTION, REVERSE THE HOSES BY CHANGING ONE END OF THE COUPLING PAIR.

KEEP ALL OBJECTS & BODY PARTS OUT OF THE WAY OF THE CUTTER.

NOTE: CONTROL CIRCUIT MUS $m{t}$ BE 24 VOLTS, ANYTHING ABOVE THIS WILL DAMAGE THE SYSTEM AND THE TRIGGERS WILL HAVE TO BE REPLACED.

PLUG THE HANDLE ELECTRIC CONNECTOR INTO THE CONNECTOR FROM THE MOTOR STARTER CONTROL CIRCUIT.

CONNECTION OF POWER SOURCES CONTINUED

TURN ON THE HYDRAULIC UNIT. IF THE BLADES CLOSE RIGHT AWAY, REVERSE THE HOSES AND TRY AGAIN.

TEST THE CUTTER BY ENGAGING THE TRIGGERS. THE CUTTER MAY NOT CLOSE THE FIRST TIME THE TRIGGERS ARE ENGAGED IF THE HOSES FROM THE HYDRAULIC UNIT AND THE CUTTER WERE FILLED WITH HYDRAULIC FLUID AND BLED TO RELIEVE THE AIR FROM THE SYSTEM. THE BEST & DONOVAN HYDRAULIC UNIT IS BUILT WITH AN INTERNAL BLEEDER IN THE TANK TO RELIEVE THE AIR FROM THE SYSTEM. THE TRIGGERS MAY HAVE TO BE ENGAGED A FEW TIME TO GET THE CORRECT FLOW TO THE UNIT.

AIR CONTROL CIRCUIT INSTALLATION

TIIE MOST IMPORTANT NOTE FOR THE HOOK-UP OF THE CUTTER HYDRAULIC UNIT IS THAT MAXIMUM OPERATION IS OBTAINED WITH 90 PSI. OF CLEAN, SLIGHTLY LUBRICATED AIR

IT IS RECOMMENDED THAT A FILTER, REGULATOR, LUBRICATOR UNIT BE INSTALLED IN THE AIR LINE BEFORE ATTACHING TO THE HYDRAULIC UNIT. THE LUBRICATOR SHOULD NOT BE SET FOR MORE THAN 3 DROPS PER MINUTE. IT IS RECOMMENDED THAT A 10 WEIGHT SPINDLE OIL BE USED IN THE LUBRICATOR.

"E-24" HOCK CUTTER & "E-23" HORN CUTTER: THE MAIN AIR SIGNAL FROM THE HYDRAULIC UNIT IS CONNECTED TO THE REAR BARBED END OF PISTOL GRIP TRIGGER SWITCH. THE AIR SIGNAL THEN PASSES THROUGH THE SWITCH TO THE SIDE HANDLE TRIGGER SWITCH AND THEN BACK TO THE HYDRAULIC UNIT DIRECTIONAL VALVE COMPLETING THE CIRCUIT.

"E-24" HOG HEAD DROPPER & "E-24" LOIN DROPPER: THE MAIN AIR SIGNAL FROM THE HYDRAULIC UNIT IS CONNECTED TO THE REAR HANDLE TRIGGER SWITCH. THE AIR SIGNAL THEN PASSES THROUGH THE SWITCH TO THE SIDE HANDLE TRIGGER SWITCH AND THEN BACK TO THE HYDRAULIC UNIT DIRECTIONAL VALVE COMPLETING THE CIRCUIT.

ROUTINE CARE

WARNING

ALWAYS DISCONNECT TOOL FROM POWER SOURCE & TURN OFF THE HYDRAULIC UNIT BEFORE ATTEMPTING TO PERFORM ANY REPAIRS, MAKING ADJUSTMENTS, CLEANING, TOUCH-UP OF SHARPENING BLADES.

IMPORTANT NOTE

MAKE SURE THAT THE LOCK NUT FOR THE BLADE PIVOT BOLTS ARE TIGHT. IF NOT, THE BLADES COULD BE FORCED SIDEWAYS WHICH EFFECTS MECHANICAL ADVANTAGE AND WILL CAUSE PREMATURE WEARING OF THE BLADE LINK PARTS & POSSIBLE BLADE BREAKAGE.

- 1. WASH CUTTER UNIT EVERY NIGHT TO MEET AND EXCEED STANDARDS.
- 2. LUBRICATE PIVOT POINTS & CHECK BLADES FOR WEAR OR DAMAGE NIGHTLY.
- 3. ONCE PER WEEK. REMOVE BLADES FROM CLEVIS, CLEAN & APPLY FOOD GRADE GREASE B&D PART# (2111200) BETWEEN' THE BLADE WORKING FACES, CLEVIS WEAR PLATE FACES, YOKE PIN & BLADE PIVOT LINKS.

ROUTINE CARE CONTINUED

NOTE: INSPECT FOR WEAR AT THE PIVOT POINTS. REPLACE THE BLADE BUSHINGS AND PIVOT PINS WHEN EXCESS WEAR OCCURS.

NOTE: WHILE THE BLADES ARE OUT OF THE CLEVIS, CHECK TO MAKE SURE THE YOKE IS TIGHT INTO THE PISTON SHAFT.

SHARPENING OF BLADE SET

BLADES ARE A MATCHED SET WHEN SHARPENED BY THE MANUFACTURER.

"E-23" PINCER BLADES - PAIR

IF THE BLADES ARE CHIPPED ON THE CUTTING EDGE OR TOO BLUNT TO SHARPEN BY HAND WITH A SHARPENING STONE OR STEEL, SEND THEM OUT TO BE PROFESSIONALLY SHARPENED. THAT SHARPENING WILL LAST THE LONGEST AND WON'T CHANGE THE ANGLE OF THE FACE ON THE BLADE.

NOTE : DO NOT CHANGE THE ANGLE OR BEVEL OF THE BLADE FACE FOR ANY REASON

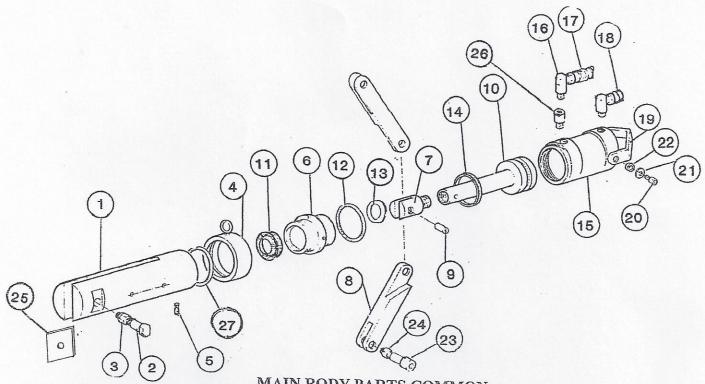
BLADE SETS & COMPLETE SUB ASSEMBLIES

2 23 THYCLK BUADLO TAIK	9730260
"E-24" HOCK CUTTER BLADES - PAIR	9750360
"E-24" HOG HEAD DROPPER BLADES - PAIR	9752700
"E-24" LOIN DROPPER BLADES - PAIR	9760350
HYDRAULIC CYLINDER UNIT	0770650
	9752650
(REFER TO MAIN BODY PARTS PAGE)	
HYDRAULIC CYLINDER REBUILD KIT	9752550
(INCLUDES 9750700, 9751000, 9751100 & 9750700)	
ARM SUPPORT ASSEMBLY	9754050
(USED ON HOCK CUTTER & HORN CUTTER)	
PISTOL GRIP HANDLE ASSEMBLY - AIR OPERATED	9756155
(USED ON HOCK CUTTER & HORN CUTTER)	2730133
(OBED ON HOCK COTTER WHOM COTTER)	
PISTOL GRIP HANDLE ASSEMBLY - 24 VOLTTRIGGER	9756655
(USED ON HOCK CUTTER & HORN CUTTER)	
6" ELECTRIC MODULAR HANDLE COMPLETE	6240055
9" ELECTRIC MODULAR HANDLE COMPLETE	6240065
12" ELECTRIC MODULAR HANDLE COMPLETE	6240075
6" AIR OPERATED MODULAR HANDLE COMPLETE	9753655
9" AIR OPERATED MODULAR HANDLE COMPLETE	9753755
12" AIR OPERATED MODULAR HANDLE COMPLETE	9753855

(REFER TO HANDLE DIAGRAM PAGE FOR DETAILED PART INFORMATION)

"E-23" & "E-24" HORN & HOCK CUTTER CONVERSION KIT # 9756659 TO SWITCH FROM AIR CONTROL TO 24 VOLT CONTROL

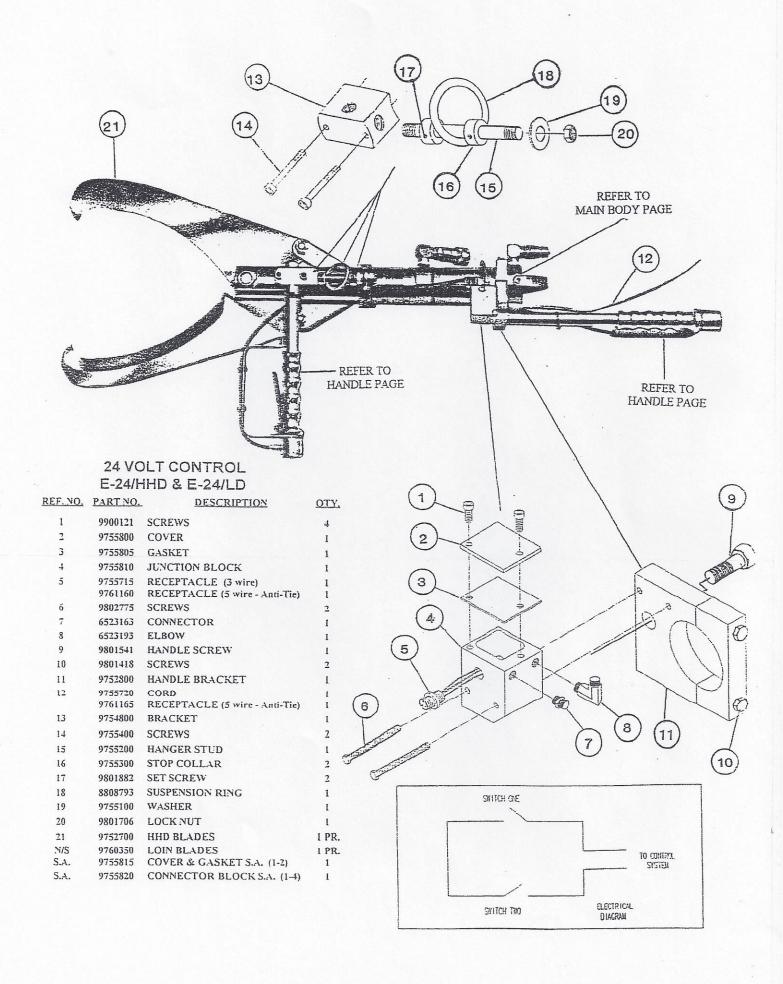
PART NO. 9756659 - CONTAINS: 6" ELECTRIC HANDLE COMPLETE #6240055, PISTOL GRIP HANDLE COMPLETE #9756655, SWITCH JUNCTION BOX # 9755755 & JUNCTION BOX BRACKET #9752800.



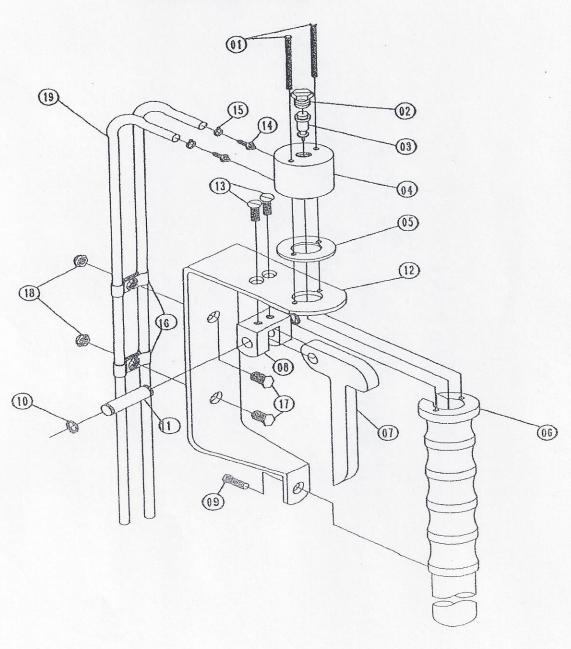
MAIN BODY PARTS COMMON TO ALL FOUR CUTTERS

	TC	ALL FOUR CUTTERS	
REF. NO.	PART NO.	DESCRIPTION	OTY.
1	9751900	CLEVIS TUBE	
2	9751400	BLADE PIVOT BOLT	1
3	9751500	STOPNUT	1
4	9751300	HANGER RING	1
5	9751800	STOP PIN	1
6	9751200	CYLINDER HEAD	1
.7	9750800	YOKE	1
8	9750900	CAM LINKS	2
9	9752300	YOKE PIN	1
10	9750600	PISTON & ROD	1
11	9752000	ROD SCRAPER SEAL	1 *
12	9751100	O - RING	1 *
13	9751000	O - RING & BACKUP SEAL	1 *
14	9750700	PISTON SEAL	1 *
15	9750500	CYLINDER	1
16	9750400	ELBOWS	2
17	9739931	HYDRAULIC COUPLING	2
		(FEMALE END ON CUTTER)	
18	9739929	HYDRAULIC COUPLING	2
19		(MALE END ON CUTTER)	
20	9752670	VERTICAL HANGER	1
21	9801296 9801986	SCREW	2
22	9752675	WASHER	2
23	9752200	HANGER BUSHING	2
24		CAM STUD	2
	9752100	CAM STUD NUT	2
25	9751970	CLEVIS TUBE WEAR PLATES	2
26	9739980	HYDRAULIC ELBOW EXTENSION	1
	(EXTENSION U	SED WITH ELECTRIC "E-24" HOCK CUTTER)	
27	9750510	.010 SHIM FOR CLEVIS ADJUSTMENT	A/N
	9750520	.020 SHIM FOR CLEVIS ADJUSTMENT	A/N
* DENOTES	9752550	SEAL KIT (11, 12, 13, & 14)	
	9752650	HYDRAULIC CYLINDER COMPLETE	
		(INCLUDES 11, 6, 12, 13, 14, 10, & 15)	
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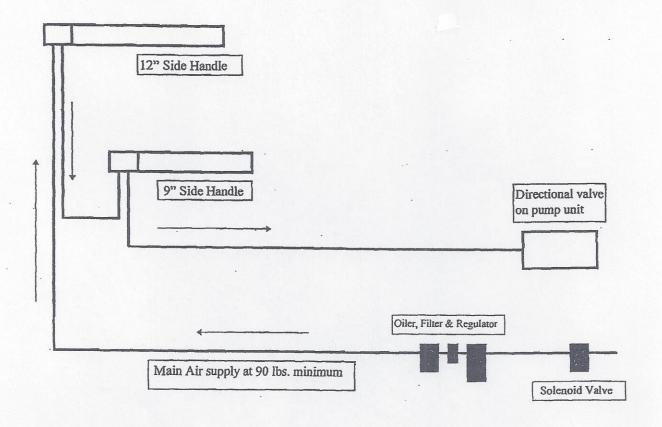
NOTE - HYDRAULIC QUICK DISCONNECTS NEED TO BE ALTERNATE ON TOOL SO THAT THE PRESSURF & RETURN LINES CAN BE DISTINGUISHABLE.



AIR OPERATED 6", 9" & 12" MODULAR HANDLE PART LISTING



"E-24" HEAD & LOIN DROPPER CONTROL AIR SIGNAL INSTALLATION

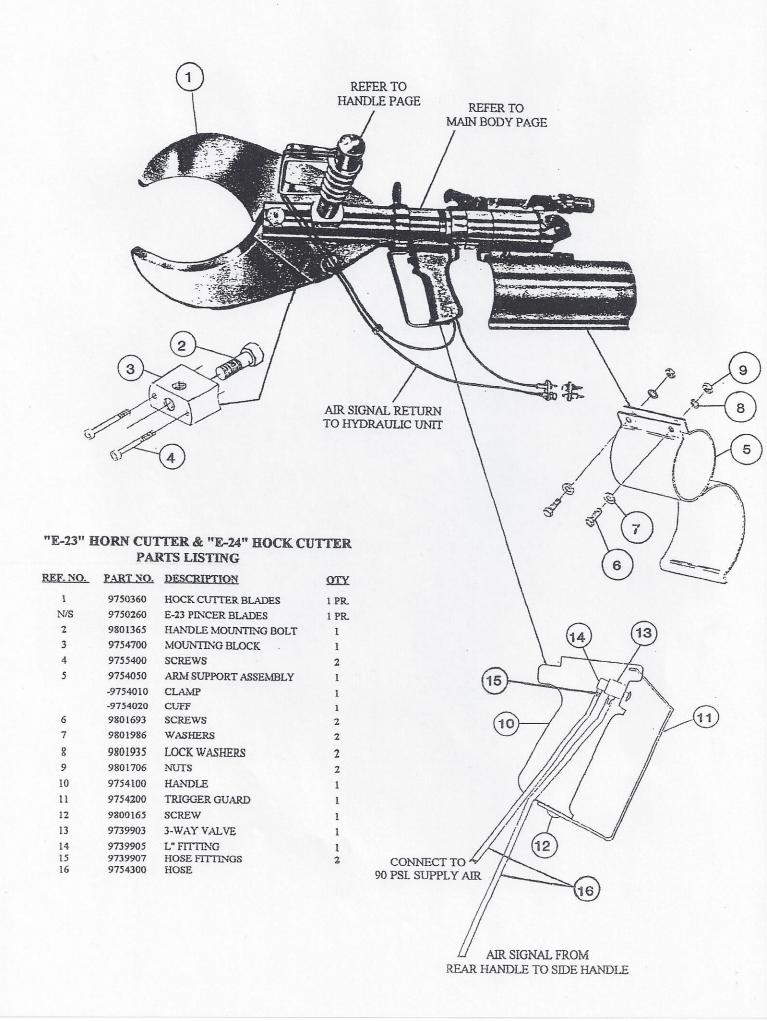


INSTRUCTIONS FOR PNEUMATIC INSTALLATION

MAIN AIR SUPPLY MUST BE CONNECTED TO THE OUTSIDE PORT FOR THE TRIGGER VALVE ON EACH HANDLE FOR THE CONTROL CIRCUIT TO WORK CORRECTLY.

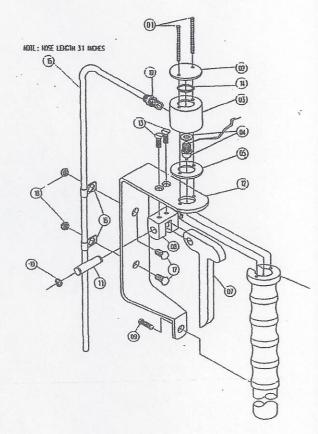
SOLENOID VALVE - INSTALL THE ELECTRIC SOLENOID VALVE IN THE MAIN AIR SUPPLY SO THAT AIR PASSES TO THE TOOL ONLY WHEN THE START BUTTON AT THE OPERATORS STATION IS DEPRESSED.

LUBRICATOR, FILTER & REGULATOR - SHOULD BE INSTALLTED TO KEEP THE AIR DRY OF MOISTURE. LUBRICATOR SHOULD BE SET FOR 1 TO 2 DROPS PER MINUTE. USE 10 WEIGHT U.S.D.A. APPROVED MINERAL OIL FOR LUBRICATION.



24 VOLT CONTROL 6", 9" & 12" MODULAR HANDLE PARTS LISTING

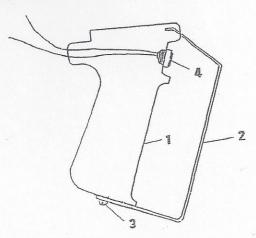
6240055		RIC MODULAR HANDLE ASSY. COM	
6240065	9" ELECTRIC MODULAR HANDLE ASSY. COMPLETE		
6240075	12" ELECTRIC MODULAR HANDLE ASSY. COMPLETE		
REF. NO.	PART NO.	DESCRIPTION	QTY.
1	9802769	HEX HEAD CAP SCREW	2
2	9753532	COVER PLATE	1
3	9753530	SWITCH HOUSING	1
4	9753555	SWITCH	1
- 5	9753528	SPACER	1
6	9753506	6" MODULAR HANDLE	1
	9753509	9" MODULAR HANDLE	1
	9753512	12 " MODULAR HANDLE	1
7	9753541	LEVER	1
8	9753543	PIVOT BRACKET	1
9	9801408	HEX HEAD CAP SCREW	1
10	1208193	RETAINING RING	2
11	6044500	PIN	1
12	9753547	FINGER GUARD	1
13	9800396	SLOTTED FLAT HEAD SCREW	2
14	9753534	O-RING	1
15	6523391	1/4" O.D. HOSE	
16	6288025	WIRE CLIPS	2
17	9802763	HEX HEAD CAP SCREWS	2
18	9801750	STOP NUTS	2
19	6523193	MALE CONNECTOR	1
PARTI	AL ASSEMB	LY KIT AVAILABLE - INCLUDES ITE	MS 1 - 14
	6240050	6" MODULAR HANDLE	



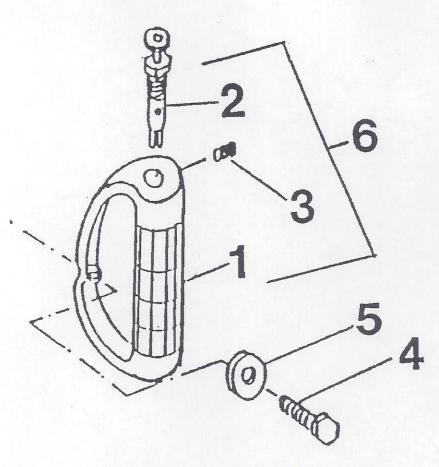
9" MODULAR HANDLE 6240060 6240070 12" MODULAR HANDLE

9756655 "E-24" PISTOL GRIP HANDLE ASSEMBLY WITH 24 VOLT SWITCH

REF. NO.	PART NO.	DESCRIPTION	QTY.
1	9754100	HANDLE	1
2	9754200	TRIGGER GUARD	1
3	9800165	SCREW	1
4	9753555	24 VOLT SWITCH	1
N/S	6523391	1/4" O.D. POLY HOSE	1 ft.



DUAL CONTROL SIDE HANDLE FOR E-23 & E-24 HOCK CUTTER



REF.NO.	PARTNO.	DESCRIPTION	QTY.
1	9759085	SIDE HANDLE ONLY	1
2	9749805	TRIGGER VALVE	1
3	9801878	VALVE SET SCREW	1
4	9749810	8mm X 20mm MOUNTING SCREW	1
5	9749815	8mm MOUNTING BOLT WASHER	1
6	9749820	SIDE HANDLE COMPLETE (1-3)	

WARRANTY

Best & Donovan warrants the machine against defective parts & workmanship for SL, {30} Days from date of factory shipment. In the fulfillment of its warranty, the sale obligation of Seller shall be to repair or replace, at its option EO.B. its factory, shipping charges prepaid, and which after inspection by Seller are found to be defective. Buyer shall notify Seiler of defect in writing, promptly upon discovery, within the warranty-period This warranty does not cover defects caused by corrosion or normal deterioration. It does not extend to consequential damage, loss or delay associated with a warranty defect and it does not cover any costs of labor, travel or other expenses associated with the repair or replacement of defective parts. Seller assumes no liability for product loss or other claims whatsoever arising out of the use or application of the machine in Meat Slaughtering Processing operations, whether the machine is used alone or in conjoint use with other Meat Slaughtering/Processing Machines or Processes.

This warranty is voided if repairs, replacements or alterations are made by others without prior authorization by Seller. Notwithstanding the foregoing, Seller's warranty obligations with respect to any items not manufactured by Seller shall not exceed the obligations undertaken by the manufacturer there of under express warranty to the Seller. This express warranty is in lieu of all other warranties of fitness of the machine for any particular purpose.

SERVICE INFORMATION AND PREVENTATIVE MAINTENANCE SCHEDULE FOR BEST & DONOVAN

BEST & DONOVAN REALIZES THAT THERE MAY BE MANY DIFFERENT APPROACHES TO PROPER :MAINTENANCE, ASSEMBLY, DISASSEMBLY, AND ADJUSTMENT PROCEDURES. THE FOLLOWING PROCEDURES SHOULD BE USED AS A GUIDELINE AND WHETHER ACCEPTED OR USED. IN THEIR ENTIRETY OR PARTIALLY, IS NOT A SUBSTITUTE FOR PROPER MECHANICAL ABILITY AND/OR KNOWLEDGE.

ONLY PERSONNEL WITH PROPER MECHANICAL AND TECHNICAL SKILLS
SHOULD ATTEMPT ANY SERVICE PROCEDURES.

THE FOLLOWING SERVICE INFORMATION WILL DESCRIBE IMPORTANT NOTATIONS REQUIRING SPECIAL ATTENTION BY THE TECHNICIAN(S) PERFORMING SERVICE TASKS. THEY ARE: WARNING, CAUTION, and NOTE.

WARNING: WILL DESCRIBE CONDITIONS THAT EXIST OR POTENTIALL Y EXIST THAT CAN CAUSE INJURY OR DEATH.

CAUTION: WILL DESCRIBE CONDITIONS THAT EXIST OR POTENTIALLY EXIST THAT CAN CAUSE INJURY OR EQUIPMENT FAILURE.

NOTE:

WILL DESCRIBE A SPECIFIC HELPFUL

PROCEDURE.