INSTRUCTION MANUAL

FOR THE

UNISUL VOLU-MATIC™ III

INSULATION

BLOWING MACHINE

READ THIS MANUAL THOROUGHLY BEFORE PUTTING YOUR VOLU-MATIC™ III INSULATION BLOWING MACHINE INTO SERVICE!

MANUFACTURED BY:
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WARRANTY		

WHEN ORDERING PARTS OR CORRESPONDING WITH US ABOUT THIS MACHINE, PLEASE GIVE US THE FOLLOWING INFORMATION AS FOLLOWS:

MACHINE MODEL NO. _____

MACHINE SERIAL NO. _____

CHECK THE ACCESSORY KIT INCLUDED WITH NEW DELIVERED MACHINES THAT THE FOLLOWING ITEMS WERE RECEIVED FOR OPERATION.	
QUANTITY	**ITEM DESCRIPTION**
1	125 FOOT LONG REMOTE CONTROL CORD
1	*4 INCH SLEEVE
1	*4 INCH I.D. x 2 FOOT LENGTH RUBBER HOSE
1	*4.5 INCH BLOWER AIR INTAKE FLANGE
1	*4.5 INCH I.D. x 3 FOOT LENGTH CWC HOSE
1	4 INCH O.D. TO 3.5 INCH O.D. REDUCER COUPLER
1	3.5 INCH O.D. TO 3.0 INCH O.D. REDUCER COUPLER
1	3.5 INCH I.D. x 4 INCH LENGTH RUBBER HOSE
4	4 INCH HOSE CLAMP (TWO ARE USED FOR THROUGH WALL CONNECTION AT INSTALLATION)
2	3.5 INCH HOSE CLAMP
2	*4.5 INCH HOSE CLAMP
2	#40 AND #50 CHAIN CONNECTOR LINKS
2	#40 AND #50 CHAIN HALF LINKS
6	SHEAR KEYS
1	1/8”, 5/32”, AND 3/16” ALLEN WRENCH
1	*EXHAUST SYSTEM FOR ENGINE MODELS
1	*ENGINE COOLING AIR INTAKE FLANGE
1	*3 FEET SPIRATUBE HOSE FOR ENGINE COOLING AIR INTAKE FLANGE
2	*HOSE CLAMP FOR SPIRATUBE HOSE
1	*1.25 INCH NON-EXPANSION PILLOW BLOCK BEARING FOR PTO MODEL
1	*1.25 INCH EXPANSION PILLOW BLOCK BEARING FOR PTO MODEL
1	*PTO WARNING LABEL KIT
1	TUBE HIGH TEMPERATURE GREASE FOR PTO PILLOW BLOCK BEARINGS
2	SPANNER WRENCHES FOR PTO PILLOW BLOCK BEARINGS
* THESE ITEMS WILL BE ON THE MACHINE WHEN INSTALLED BY C.M.W.	

VOLU-MATIC™ III INSULATION BLOWING MACHINE

SPECIFICATIONS:

MODELS:

V3KA2C: KOHLER COMMAND GASOLINE ENGINE - 25 HORSEPOWER TWIN CYLINDER AIR COOLED.

V3PTO: POWER TAKE-OFF ON TRUCK.

ALL MACHINES: 18 INCH AIRLOCK FEEDER, AIR VOLUME CONTROL SYSTEM, ELECTRO-MAGNETIC CLUTCHES, SPIRAL BEVEL GEARBOXES, FOUR SPEED TRANSMISSION.

HEIGHT: 73.00 INCHES

LOAD HEIGHT: 60.00 INCHES

WIDTH: 56.38 INCHES

LENGTH: 72.75 INCHES

WEIGHT: 2100 POUNDS

ELECTRICAL: 12 VOLT REMOTE CONTROL

BLOWER VOLUME: 270 CFM @ 2 PSI

BLOWER PRESSURE: 6.0 PSI MAXIMUM

HOSE REQUIREMENT: 3 ½" I.D. MINIMUM x 150' LENGTH MINIMUM - OPEN BLOW
3" I.D. or 2 ½" I.D. MINIMUM x 150' LENGTH MINIMUM - SIDEWALL

HOSE MANUFACTURER: FLEXHAUST UNI-FLEX MARK II RECOMMENDED

MAXIMUM FEED RATES:

CELLULOSE: 70 - 80 POUNDS PER MINUTE @ 2.0 PSI.

FIBERGLASS: 25 - 35 POUNDS PER MINUTE @ 3.5 PSI.

ROCKWOOL: 35 - 55 POUNDS PER MINUTE @ 4.5 PSI.

WARNING: RECOMMENDED HOSE SIZE, TYPE, AND LENGTH MUST BE USED TO ACHIEVE MAXIMUM RESULTS. CERTAINTEED MACHINE WORKS CANNOT GUARANTEE PERFORMANCE OF THE ***VOLU-MATIC III*** MACHINE IF HOSES ARE UNDERSIZED, WORN, DAMAGED, OR HOSES OTHER THAN THOSE WE RECOMMEND ARE USED.

BEFORE YOU RUN THIS MACHINE...

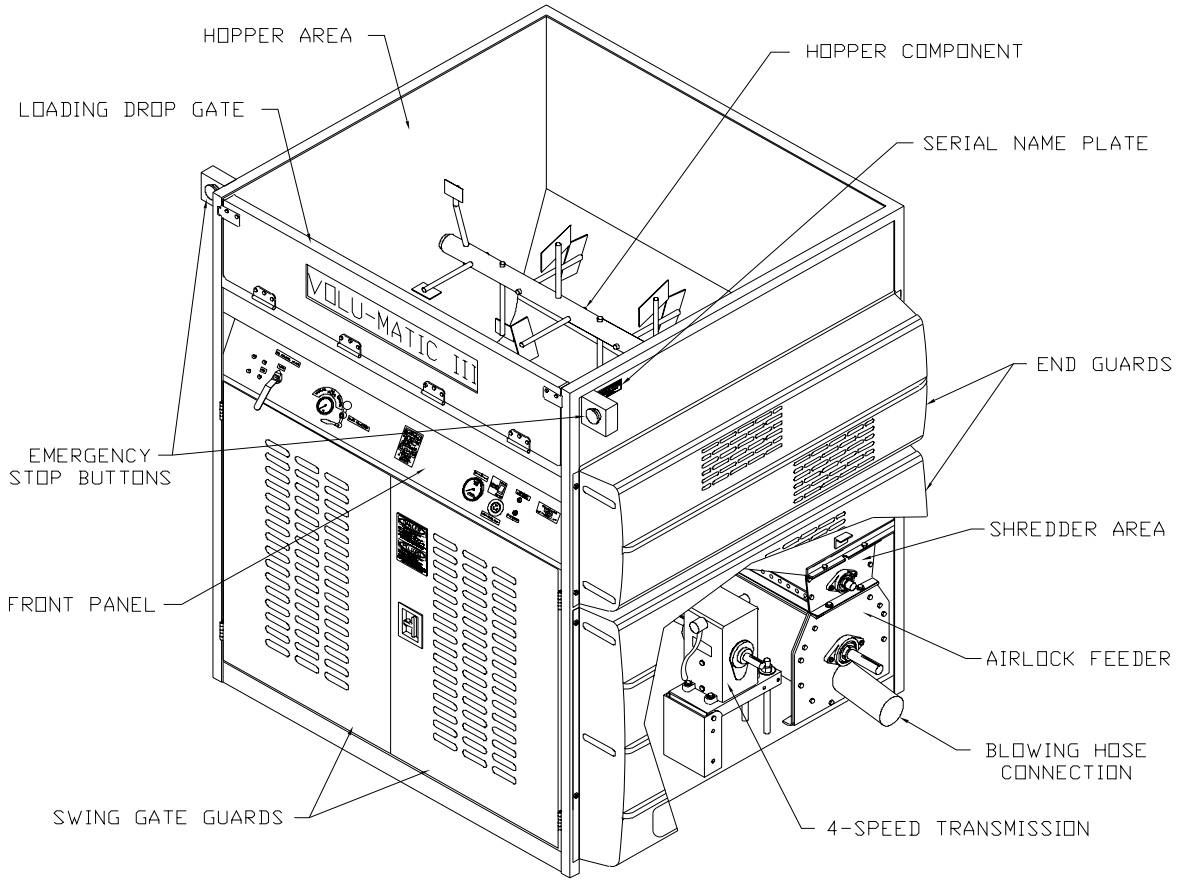
PLEASE STUDY THE REST OF THIS MANUAL.

INTRODUCTION

SEVERAL SAFETY FEATURES ARE ON THE ***VOLU-MATIC III*** MACHINE TO ENSURE OPERATOR SAFETY. STUDY THE SAFETY SECTION THOROUGHLY SO THAT ALL THE FEATURES CONCERNING SAFETY ARE UNDERSTOOD. KEEP ALL THESE FEATURES FUNCTIONAL AND NO PROBLEMS WILL BE EXPERIENCED DURING MACHINE OPERATION.

THIS INTRODUCTION IS PRESENTED TO PROVIDE A BASIC DESCRIPTION OF THE FUNCTION AND PURPOSE OF THE ***VOLU-MATIC III,*** WHICH WILL HELP WITH UNDERSTANDING ALL OF THE ITEMS COVERED IN THE SECTION ON SAFETY.

NOTE: END GUARD CUTAWAY TO SHOW COMPONENTS



THE ***VOLU-MATIC III*** MACHINE IS PRINCIPALLY DESIGNED TO BLOW INSULATING MATERIALS INTO ATTICS OF RESIDENTIAL AND COMMERCIAL BUILDINGS, AND CAN ALSO BE CONFIGURED TO BLOW SIDE WALLS. THE INSULATION MATERIAL MANUFACTURER'S INSTRUCTIONS PREVAIL WHEN IT COMES TO INSTALLING THEIR PRODUCT, SINCE THEY GUARANTEE THE FINAL RESULTS.

THE ***VOLU-MATIC III*** MACHINE IS NORMALLY MOUNTED IN THE BACK OF A CONTRACTOR'S TRUCK AND CAN BE POWERED EITHER BY A SMALL INDUSTRIAL ENGINE OR BY THE TRUCK ENGINE VIA A POWER TAKE OFF (PTO) BOX. THE BELT DRIVEN POWER TRAIN THAT DRIVES ALL MACHINE MECHANISMS, INCLUDES ELECTRO-MAGNETIC CLUTCHES THAT PROVIDE SEPARATE CONTROL OF VARIOUS FUNCTIONS ON THE MACHINE. TO ALLOW THE PERSON INSTALLING THE INSULATION FULL CONTROL OF THE MACHINE, A 12-VOLT ELECTRICAL REMOTE CONTROL SYSTEM IS PROVIDED, WHICH OPERATES EITHER THROUGH THE PROVIDED HARD WIRE REMOTE CORD AND TOGGLE SWITCH, OR WITH AN OPTIONAL RADIO FREQUENCY REMOTE CONTROL UNIT. THE ***VOLU-MATIC III*** CONTROLS PROVIDE INDEPENDENT CONTROL OF BOTH THE AIR THAT BLOWS THE MATERIAL DOWN THE HOSE TO ITS DESTINATION, AND THE MACHINE MECHANISMS THAT CONDITION AND FEED THE INSULATING MATERIAL INTO THAT AIR STREAM. THE MACHINE CAN BE SET AT DIFFERENT SPEED SETTINGS WITH THE TRANSMISSION TO MATCH THE APPLICATORS ABILITY AND/OR MATERIAL CHARACTERISTICS.

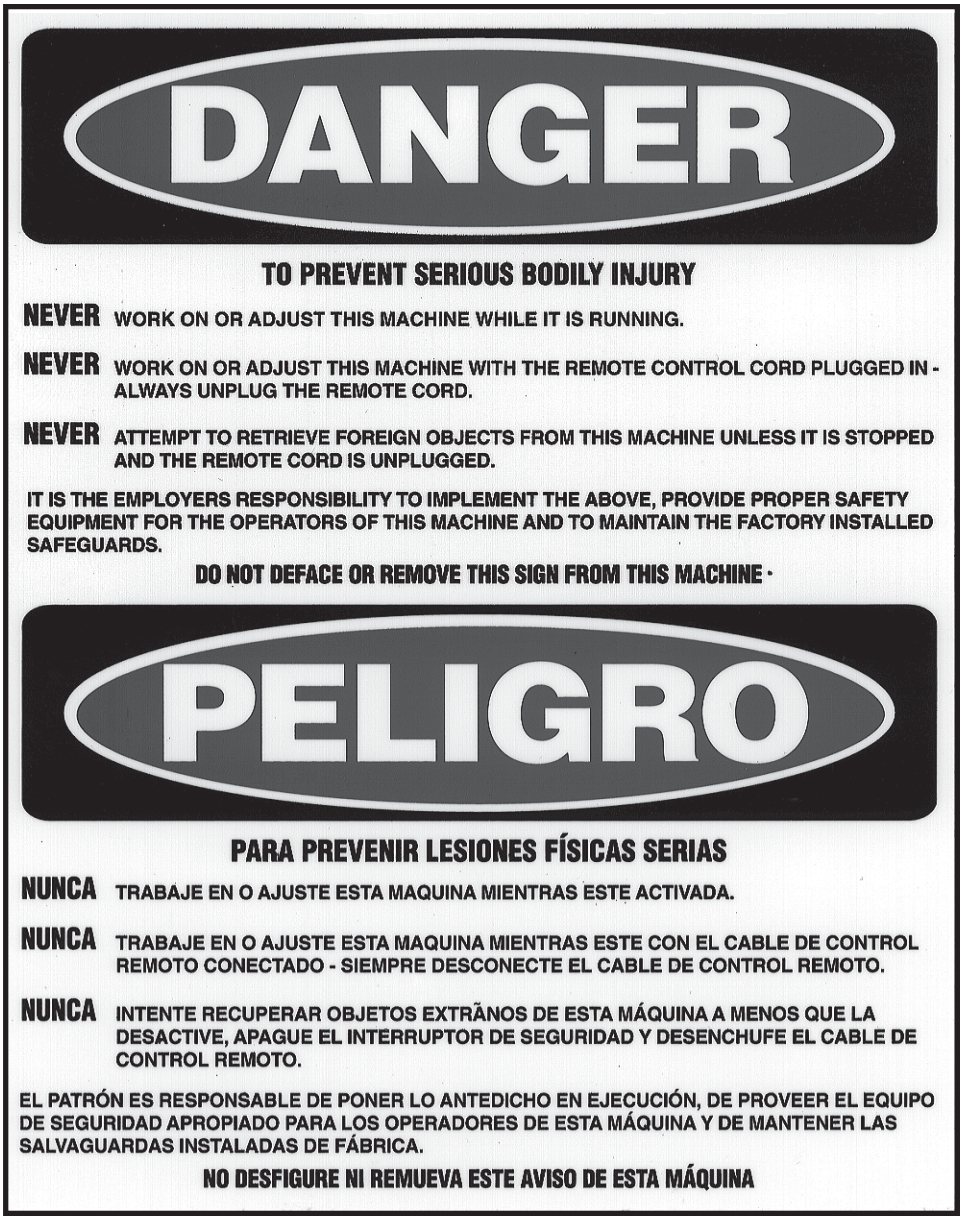
THE 12-VOLT ELECTRICAL CIRCUIT IS POWERED BY THE MACHINE'S SMALL INDUSTRIAL ENGINE, OR BY THE TRUCK BATTERY WHEN IT IS PTO DRIVEN. THE ELECTRICAL CONTROL CIRCUIT IS PROTECTED WITH A 20 AMP CIRCUIT BREAKER. A LIGHT ILLUMINATES WHEN THE MASTER SWITCH IS TURNED ON, INDICATING THAT POWER IS ON FOR BOTH THE BLOWER RELAY AND REMOTE CONTROL RECEPTACLE. WHEN THE REMOTE CORD SWITCH IS MOVED TOWARD THE CORD, POWER IS SENT THROUGH THE EMERGENCY STOP BUTTONS TO THE BLOWER RELAY, CAUSING THE BLOWER CLUTCH TO ENGAGE. WHEN THE REMOTE CORD SWITCH IS MOVED TOWARD THE END OF THE HOUSING, POWER FLOWS TO THE BLOWER AND MECHANISM RELAYS, CAUSING BOTH CLUTCHES TO ENGAGE. THE TOGGLE SWITCH IN THE REMOTE CORD HOUSING IS LABELED TO IDENTIFY THESE MACHINE FUNCTIONS. THE SWITCHES ON THE OPTIONAL RADIO FREQUENCY REMOTE CONTROL UNIT ARE LABELED ON THE TRANSMITTER TO IDENTIFY THESE MACHINE FUNCTIONS.

THE HOPPER AREA WHERE MATERIAL IS DEPOSITED INTO THE MACHINE HAS A JOGGER AND CIRCULATOR TO OPEN AND STIR THE MATERIAL, AND AN AUGER AT THE BOTTOM FOR MATERIAL FEED. MATERIAL EXITS THE AUGER AND IS CONDITIONED BY THE SHREDDER BEFORE ENTERING THE AIRLOCK FEEDER. THE AIRLOCK FEEDER DEPOSITS THE MATERIAL INTO THE AIR STREAM WHERE IT ENTERS THE HOSE AND FLOWS TO THE HOSE EXIT.

ANOTHER FEATURE ON THE ***VOLU-MATIC III*** MACHINE IS A SLIDE GATE THAT WHEN ADJUSTED, CAN LENGTHEN THE TIME THE MATERIAL IS IN THE HOPPER AREA, WHICH CONDITIONS THE MATERIAL. THE SLIDE GATE IS USED TO CONTROL BOTH FEED RATE AND MATERIAL CONDITIONING DURING SIDE WALL APPLICATIONS. AIR VOLUME IS CONTROLLED INDEPENDENTLY WITH A MANUALLY OPERATED VALVE, TO HELP OPTIMIZE MATERIAL COVERAGE.

SAFETY

THE ***VOLU-MATIC III*** INSULATION BLOWING MACHINE HAS FULL GUARDING AND ELECTRICAL DISCONNECTS FOR YOUR SAFETY. EVERY ***VOLU-MATIC III*** MACHINE HAS THIS WARNING DISPLAYED IN A PROMINENT PLACE. **DO NOT REMOVE, MODIFY, OR DEFACE THE WARNING LABEL!**



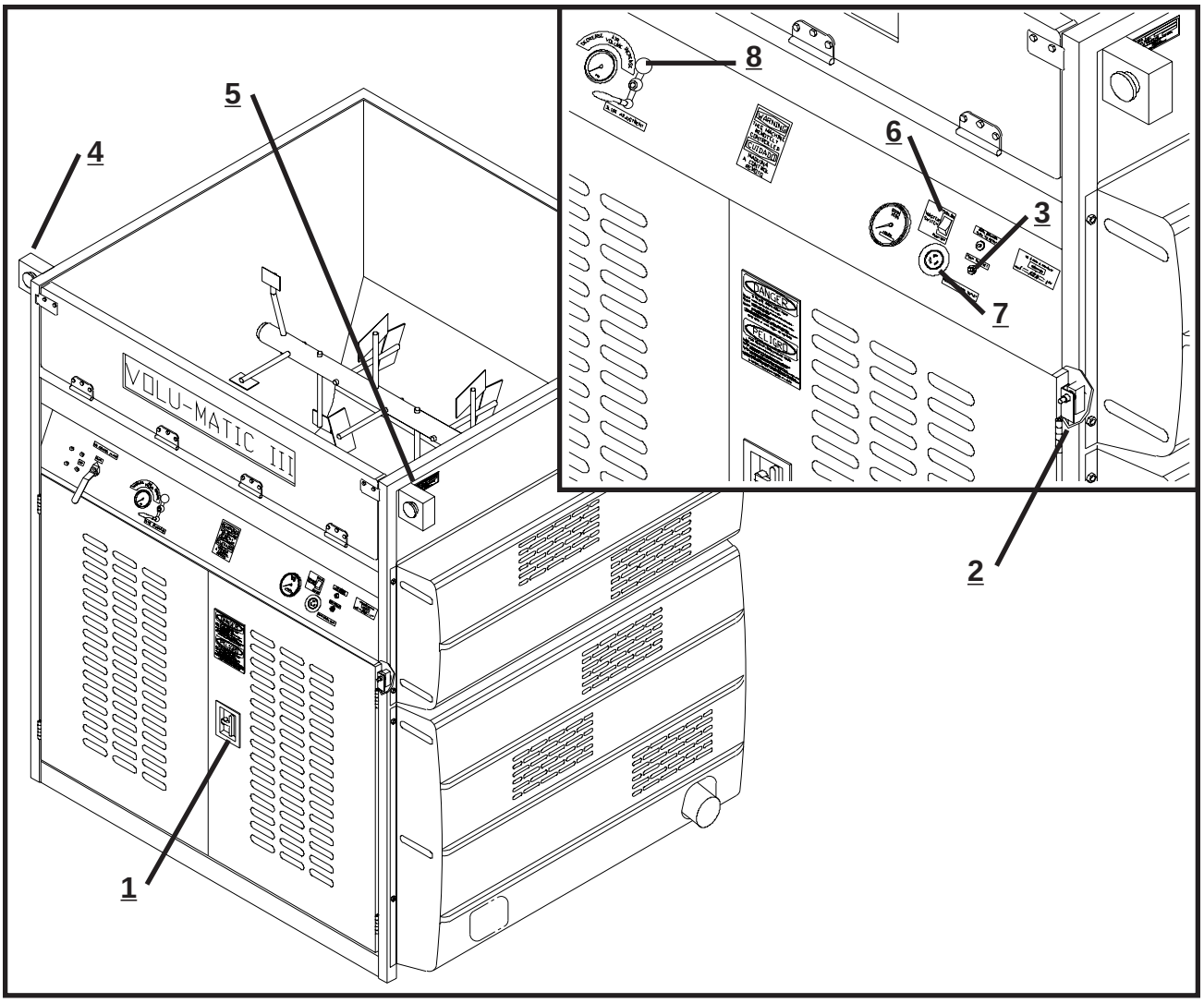
WARNING: IF ANY FOREIGN OBJECT SHOULD ENTER THE MACHINE; PUSH AN EMERGENCY STOP BUTTON IN (OFF), TURN OFF THE MASTER SWITCH, UNPLUG THE REMOTE CORD, AND SHUT THE MACHINE ENGINE OR POWER SOURCE DOWN BEFORE RETRIEVING THE OBJECT. NEVER REACH INTO THE MACHINE WHILE IT IS OPERATING.

OTHER WARNING SIGNS, CAUTION SIGNS, AND DANGER SIGNS ARE DISPLAYED SO THAT THE OPERATOR IS AWARE OF OTHER HAZARDS ASSOCIATED WITH THE USE OF THE MACHINE. YOU WILL SEE THE FOLLOWING WARNINGS ON THE MACHINE. **DO NOT REMOVE, MODIFY, OR DEFACE THE WARNING LABELS!**

THE PURPOSE OF THIS SIGN IS TO MAKE THE OPERATOR AWARE THAT THEY MAY LOSE BALANCE AND FALL.

THIS WARNING SIGN IS DISPLAYED ON THE TRUCK AFTER INSTALLATION OF A PTO DRIVEN MACHINE. A LABEL KIT IS SENT WITH THE PTO MODEL WHEN THE MACHINE IS SHIPPED FOR CUSTOMER INSTALLATION. USE THE INSTALLATION INSTRUCTIONS IF YOU INSTALL THE MACHINE.

ALL ***VOLU-MATIC III*** MACHINES ARE FACTORY EQUIPPED WITH SIDE, FRONT, AND REAR GUARDS. THE TOP OF THE MACHINE DOES NOT REQUIRE GUARDING WHEN CORRECTLY MOUNTED IN THE CONTRACTOR'S TRUCK AS SHOWN IN THE INSTALLATION INSTRUCTIONS. IF THE MACHINE IS INSTALLED SO THAT THE TOP IS EXPOSED, SUCH AS IN A MANUFACTURING PLANT, OR IN AN OPEN TOP TRAILER INSTALLATION, A TOP GUARD WILL HAVE TO BE EQUIPPED.



THE FRONT SWING GATE GUARDS ARE EQUIPPED WITH A RECESSED T-HANDLE LATCH **1**. **THESE GUARDS MUST NEVER BE OPENED WHILE YOUR *VOLU-MATIC III* MACHINE IS IN OPERATION - THERE ARE SHAFTS WITH GUARDING OVER THEM, WHICH ARE STILL ROTATING.** IF THESE GATES ARE OPENED, SAFETY SWITCHES **2** ARE MOUNTED TO THE SWING GATES WHICH WILL ONLY STOP CHAIN DRIVEN MECHANISMS AND THE BLOWER. **IF THE MECHANISMS DO NOT SHUT OFF OR STOP WHEN EITHER OF THE GATES ARE OPENED, YOU SHOULD REQUEST THAT MAINTENANCE BE PERFORMED ON THE SAFETY INTERLOCKS.** YOU WILL HAVE TO PUSH THE RESET BUTTON **3** IN ORDER TO RESTART THE MACHINE AFTER THE SWING GATES ARE CLOSED FOR MACHINE READY ON. IF THE SAFETY SWITCH OR GUARD SHOULD BECOME DAMAGED, REPLACE THEM, TO ENSURE SAFETY WHILE OPERATING YOUR ***VOLU-MATIC III*** MACHINE.

THE MAIN DRIVE BELT GUARD IS TO ENSURE SAFETY WHEN STARTING OR STOPPING THE ENGINE AND ALSO FOR GENERAL MAINTENANCE THAT MAY REQUIRE THE ENGINE TO BE RUNNING WHILE THE MACHINE IS OFF. THE MAIN DRIVE BELT GUARD ON PTO MODELS IS TO ENSURE SAFETY WHEN THE MACHINE IS OFF, BUT THE PTO IS STILL ENGAGED ON THE TRUCK.

THERE ARE TWO EMERGENCY STOP BUTTONS **4 & 5** THAT WILL COMPLETELY SHUT THE MACHINE DOWN. EITHER RED BUTTON WILL STOP ALL MACHINE MECHANISMS WHEN PUSHED IN (OFF) OVERRIDING ALL OTHER CONTROLS. **IF THE MECHANISMS DO NOT SHUT OFF OR STOP WHEN EITHER BUTTON IS PUSHED, REQUEST THAT MAINTENANCE BE PERFORMED ON THE SAFETY INTERLOCKS.** THE EMERGENCY STOP BUTTONS MUST BE PULLED OUT (ON) FOR NORMAL OPERATION. **"KNOWLEDGE OF THE LOCATION AND FUNCTION OF THESE EMERGENCY STOPS IS EMPHASIZED."**

THESE BUTTONS SHOULD BE USED FOR ANY OF THE FOLLOWING TYPE OF EMERGENCIES:

- UNAUTHORIZED INDIVIDUAL GETTING TOO CLOSE TO THE MACHINE.
- OBJECTS FALLING INTO MACHINE.
- A MACHINE COMPONENT BREAKS.
- A MATERIAL HOSE BECOMES DISCONNECTED.
- ANYTHING REQUIRING IMMEDIATE STOPPING OF THE MACHINE.

YOU WILL HAVE TO PUSH THE RESET BUTTON **3** IN ORDER TO RESTART THE MACHINE AFTER THE EMERGENCY STOP BUTTONS ARE PULLED BACK OUT (ON) FOR MACHINE OPERATION. IF ANY SAFETY SWITCH INTERLOCK SHOULD BECOME DAMAGED, REPLACE IT; KEEP YOUR ***VOLU-MATIC III*** MACHINE SAFE.

DURING MACHINE OPERATION, ALWAYS TURN OFF THE "ROCKER TYPE" MASTER SWITCH **6** (LIGHT INDICATES SWITCH IS ON), AND UNPLUG THE REMOTE CORD FROM THE RECEPTACLE **7** BEFORE REMOVING ANY GUARDS FOR ANY REASON! THE MATERIAL CONDITIONING SLIDE GATE IS ADJUSTABLE FROM OUTSIDE THE MACHINE USING ADJUSTMENT HANDLE **8**.

DURING MACHINE OPERATION, ALWAYS STAND ON THE FLOOR TO DEPOSIT MATERIAL INTO THE HOPPER. UNDER NO CIRCUMSTANCES SHOULD YOUR HAND, ARM, STICK, OR BROOM BE USED TO MOVE OR FORCE FEED MATERIAL DOWN INTO THE HOPPER. THE ***VOLU-MATIC III*** MACHINE IS A SELF-FEEDING DESIGN REQUIRING NO OUTSIDE ASSISTANCE FOR SMOOTH FLOW.

OPERATORS SHOULD WEAR HEARING PROTECTION IF THE MACHINE NOISE MAKES THEM UNCOMFORTABLE OR NOISE LEVEL EXCEEDS ACCEPTABLE STANDARDS. C.M.W. RECOMMENDS THAT THE OPERATOR WEAR AN "APPROVED" DUST MASK OR RESPIRATOR FOR THEIR PROTECTION. SAFETY FEATURES ARE INCORPORATED INTO THE ***VOLU-MATIC III*** MACHINE TO PROTECT EVERYONE FROM SERIOUS INJURY. OPERATE YOUR MACHINE ACCORDING TO THE OUTLINED INSTRUCTIONS IN THIS MANUAL WITH ALL SAFETY FEATURES IN PLACE AND WORKING PROPERLY. OPERATING THE MACHINE IN AN UNSAFE MANNER CAN RESULT IN SERIOUS INJURY.

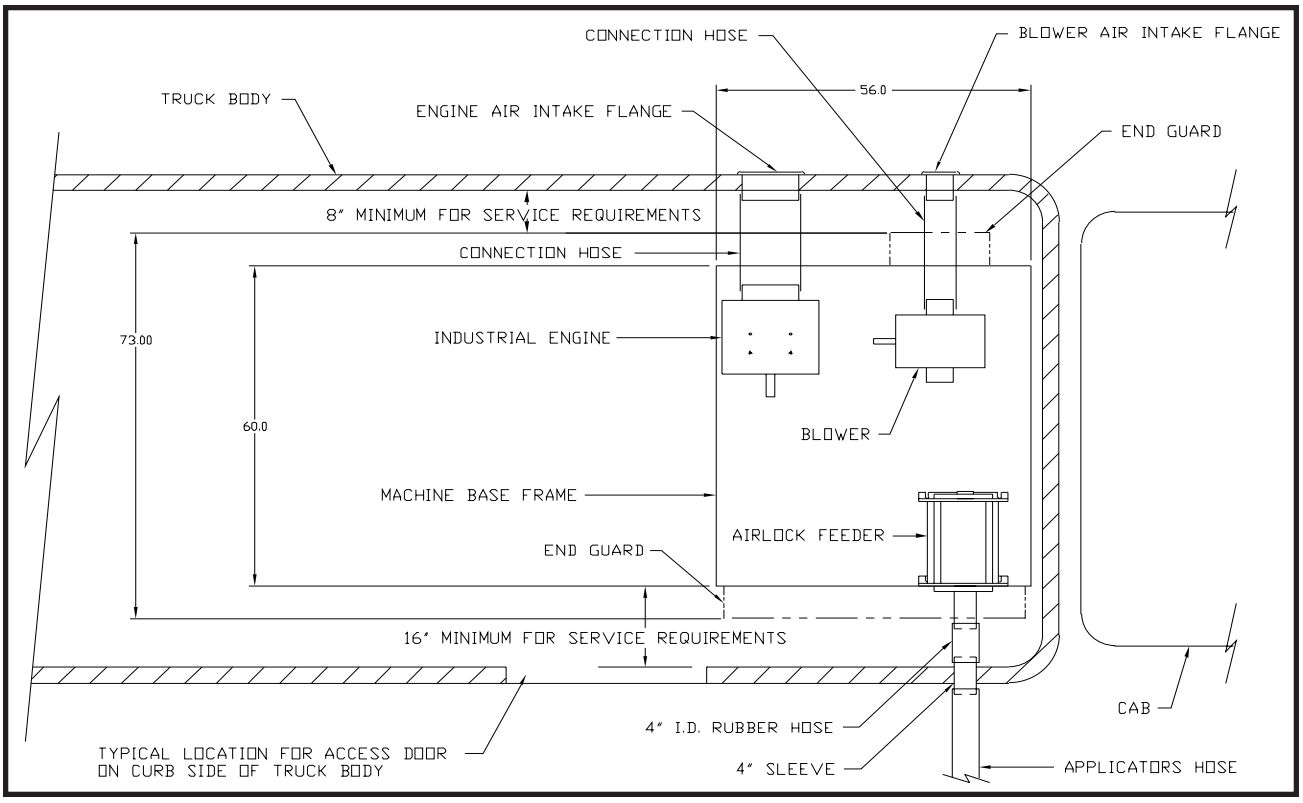
INSTALLATION

THE ***VOLU-MATIC III*** IS DESIGNED FOR OPERATION WHEN MOUNTED IN THE BODY OF THE CONTRACTOR'S COMMERCIAL TRUCK. THE MACHINE IS POWERED BY AN INDUSTRIAL ENGINE OR A POWER TAKE OFF (PTO) GEARBOX MOUNTED TO THE SIDE OF THE TRANSMISSION. USE THE FOLLOWING INSTRUCTIONS TO INSTALL THE MACHINE FOR OPERATION.

ENGINE DRIVEN MODEL INSTALLATION

THE ENGINE DRIVEN MODEL ***VOLU-MATIC III*** IS DESIGNED TO OPERATE USING AN INDUSTRIAL ENGINE TO POWER THE MACHINE. THE ENGINE DRIVES A SHAFT THROUGH A BELT DRIVE WHICH IN TURN DRIVES MACHINE MECHANISMS FOR OPERATION. INSTALLATION REQUIREMENTS ARE MINIMAL BUT WILL REQUIRE SOME EFFORT TO LOCATE EXACTLY ALL CUT OUTS REQUIRED IN THE TRUCK BODY FOR A CLEAN INSTALLATION AND MACHINE OPERATION. **THE FOLLOWING ITEMS ARE REQUIRED TO COMPLETE THE ENGINE DRIVEN INSTALLATION: ENGINE AIR INTAKE FLANGE & HOSE & CLAMPS, ENGINE EXHAUST KIT, BLOWER AIR INTAKE FLANGE & HOSE & CLAMPS, 4" SLEEVE, 4" I.D. X 2' RUBBER HOSE.**

1. USE THE FOLLOWING DRAWING AS A GUIDE FOR LOCATING THE ***VOLU-MATIC III*** MACHINE. REMOVE ALL OF THE SHIPPING CRATE AND SKIDS WHEN PLACING THE MACHINE IN THE TRUCK BODY.



2. YOU WILL HAVE TO LOCATE CUT OUTS IN THE TRUCK BODY SIDE WALL IF DOORS ARE NOT DIRECTLY IN FRONT ON THE DRIVERS SIDE FOR THROUGH WALL AIR INTAKE TO THE ENGINE AND BLOWER. INTAKE FLANGE, HOSE, AND CLAMPS ARE SUPPLIED WITH NEW DELIVERED MACHINES FOR INSTALLATION.

YOU WILL ALSO HAVE TO LOCATE A CUT OUT FOR THE APPLICATORS HOSE CONNECTION TO THE AIRLOCK FEEDER IF DOORS ARE NOT DIRECTLY IN FRONT ON THE CURB SIDE OF THE TRUCK. A FOUR INCH I.D. RUBBER HOSE, SLEEVE, AND CLAMPS ARE SUPPLIED WITH NEW DELIVERED MACHINES FOR THROUGH WALL CONNECTION.

3. ENGINE DRIVEN MODELS WILL REQUIRE EXHAUST INSTALLATION OR ADDITIONAL FLEXIBLE PIPE TO ROUTE THE EXHAUST FUMES OUTSIDE. THE EXHAUST SYSTEM OR FLEXIBLE PIPE AND CLAMPS ARE SUPPLIED WITH NEW DELIVERED MACHINES. MAKE SURE THAT THE EXHAUST IS ROUTED OUTSIDE THE TRUCK BODY AND *AWAY* FROM THE ENGINE AIR INTAKE FLANGES. CERTAINTEED MACHINE WORKS INSTALLS THE EXHAUST THROUGH THE FLOOR AND THEN ROUTE TOWARD THE BACK OF THE TRUCK.

WARNING: CARBON MONOXIDE POISONING FROM ENGINE EXHAUST CAN BE FATAL. MAKE SURE EXHAUST IS ROUTED AWAY FROM AIR INTAKE FLANGES AND THAT THE TRUCK BODY IS WELL VENTILATED.

4. ONCE YOU ARE SATISFIED WITH THE MACHINE LOCATION, MAKE ALL NECESSARY CUT OUTS AND BOLT THE MACHINE TO THE FLOOR. MAKE SURE AIR INTAKE CONNECTION HOSE ALLOWS FOR BELT TENSIONING REQUIREMENTS TO THE ENGINE. NOTE WHERE THE ENGINE OIL DRAIN IS LOCATED IN CASE A HOLE IN THE FLOOR IS NEEDED FOR MAINTENANCE.

WARNING: DO NOT SMOKE WHEN OPERATING THE MACHINE.

5. THE FUEL TANK IS NOW LOCATED ON THE MACHINE FRAME AND IS PLUMBED TO THE ENGINE. THE TANK IS EPA C.A.R.B. COMPLIANT FOR THE RECOVERY OF FUEL FUMES. FILL TANK WITH A GOOD CLEAN GRADE OF FUEL.

WARNING: DO NOT SMOKE WHEN REFUELING THE TANK. FUMES FROM FUEL ARE EXPLOSIVE AND CAN BE FATAL. FOLLOW ALL SAFETY PRECAUTIONS WHEN HANDLING ANY TYPE OF FUEL.

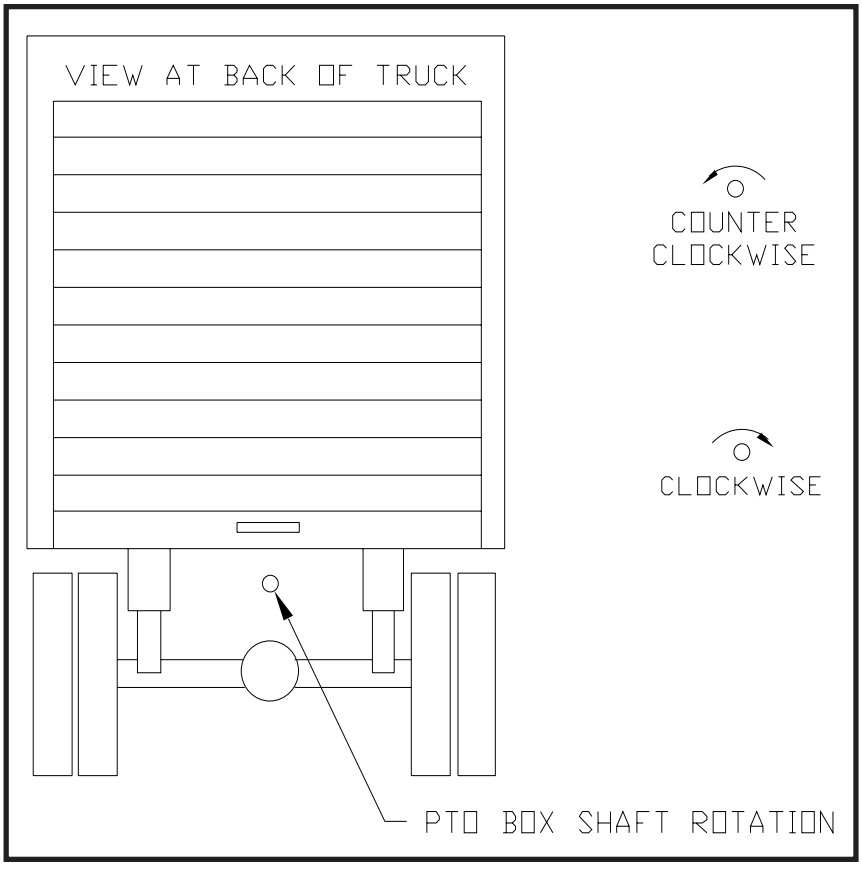
6. REFER TO THE OPERATION SECTION FOR INITIAL START AND MACHINE OPERATION.

POWER TAKE OFF (PTO) DRIVEN INSTALLATION

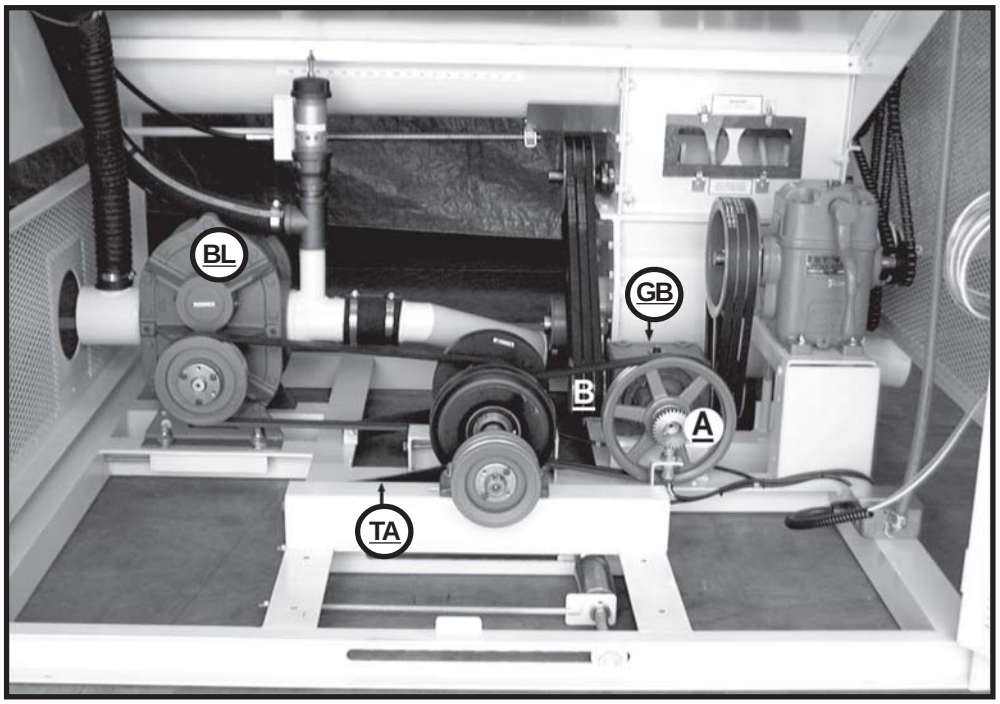
THE POWER TAKE OFF (PTO) DRIVEN MODEL ***VOLU-MATIC III*** IS DESIGNED TO OPERATE USING A PTO GEARBOX MOUNTED TO THE SIDE OF THE TRANSMISSION ON THE TRUCK. THIS PTO BOX SHOULD BE APPROXIMATELY 100% TAKE OFF OF TRUCK ENGINE SPEED IN ORDER TO ACHIEVE PROPER MACHINE SPEED WHILE THE TRUCK IDLES AT THE MANUFACTURER'S RECOMMENDED RPM RANGE. MOST INSTALLATIONS HAVE AN IDLE SPEED RANGE OF 1200 TO 1500 RPM. THE PTO BOX SHOULD HAVE AN OUTPUT SHAFT WITH A DIAMETER OF 1.25 INCHES. ADDITIONALLY, MOST TRUCKS WILL REQUIRE PROGRAMMING OF THE ECM (engine control module) TO CONTROL THE PTO SPEED, THIS WILL HAVE TO BE ACCOMPLISHED BY THE TRUCK DEALER.

A DRIVE SYSTEM WILL BE INSTALLED UNDER THE TRUCK THAT CONNECTS TO THE PTO BOX OUTPUT SHAFT ON ONE END AND HAS AN OUTPUT SHAFT AT THE OTHER END FOR BELT DRIVE TO THE MACHINE. THE BELT DRIVE WILL CONNECT TO THE INPUT/CLUTCH SHAFT ON THE MACHINE. **THE FOLLOWING ITEMS ARE REQUIRED TO COMPLETE THE PTO DRIVEN INSTALLATION: UNIVERSAL DRIVE SHAFT, OUTPUT SHAFT, 1 1/4" EXPANSION AND 1 1/4" NON-EXPANSION PILLOW BLOCK BEARINGS, BEARING MOUNTS, DRIVE PULLEY, BELTS, 4" SLEEVE, 4" I.D. X 2' RUBBER HOSE AND CLAMPS, PTO WARNING LABEL KIT.**

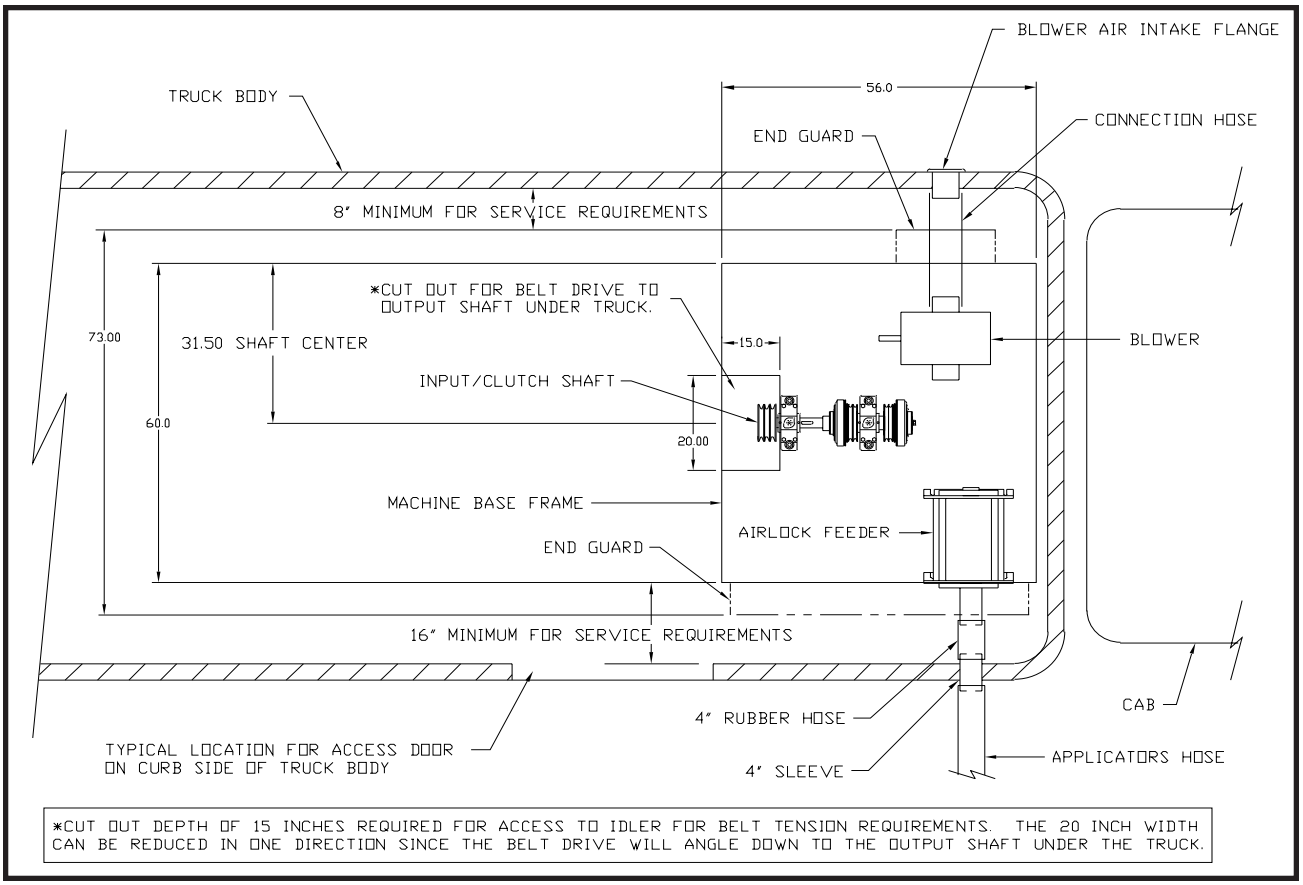
AT THE TIME A NEW MACHINE ORDER WAS PLACED YOU WERE ASKED TO SUPPLY INFORMATION ABOUT THE TRUCK MOUNTED PTO BOX OUTPUT SHAFT ROTATION. TO DETERMINE THE ROTATION, YOU LOOK AT THE PTO BOX SHAFT FROM THE REAR OF THE TRUCK, SEE DRAWING.



THIS INFORMATION IS NECESSARY FOR DETERMINING MACHINE SETUP AT THE FACTORY. THE BLOWER **BL** AND RIGHT ANGLE GEARBOX **GB** MOUNTING ARE AFFECTED BY THE ROTATION OF THE TRUCK MOUNTED PTO BOX, SEE PICTURE. THE PICTURE SHOWS A COUNTERCLOCKWISE SETUP NOTICEABLE BY THE BLOWER SHAFT AT THE BOTTOM POSITION AND THE CLUTCH RETAINING TORQUE ARMS **TA** ROUTED TO THE LEFT SIDE OF THE MACHINE. THE RIGHT ANGLE GEARBOX PINION SHAFT **A** WILL ALWAYS ROTATE IN THE SAME DIRECTION AS THE PTO BOX. IT IS A SIMPLE MATTER OF FLIPPING THE GEARBOX ONTO ONE MOUNTING SIDE OR THE OTHER SO THAT THE CROSS SHAFT **B** ALWAYS ROTATES TOWARD THE FRONT OF THE MACHINE. FOR CLOCKWISE ROTATION, THE BLOWER WOULD HAVE TO BE MOUNTED WITH THE SHAFT AT THE TOP POSITION AND THE CLUTCH RETAINING TORQUE ARMS ROUTED TO THE RIGHT SIDE OF THE MACHINE. THE DRAIN PLUGS AND BREATHER CAPS ALSO HAVE TO BE INSERTED ACCORDINGLY.



1. WITH THE ROTATION OF THE TRUCK MOUNTED PTO BOX AND MACHINE SETUP DETERMINED, USE THE FOLLOWING DRAWING AS A GUIDE FOR LOCATING THE ***VOLU-MATIC III*** MACHINE. REMOVE ALL OF THE SHIPPING CRATE AND SKIDS WHEN PLACING THE MACHINE IN THE TRUCK BODY.

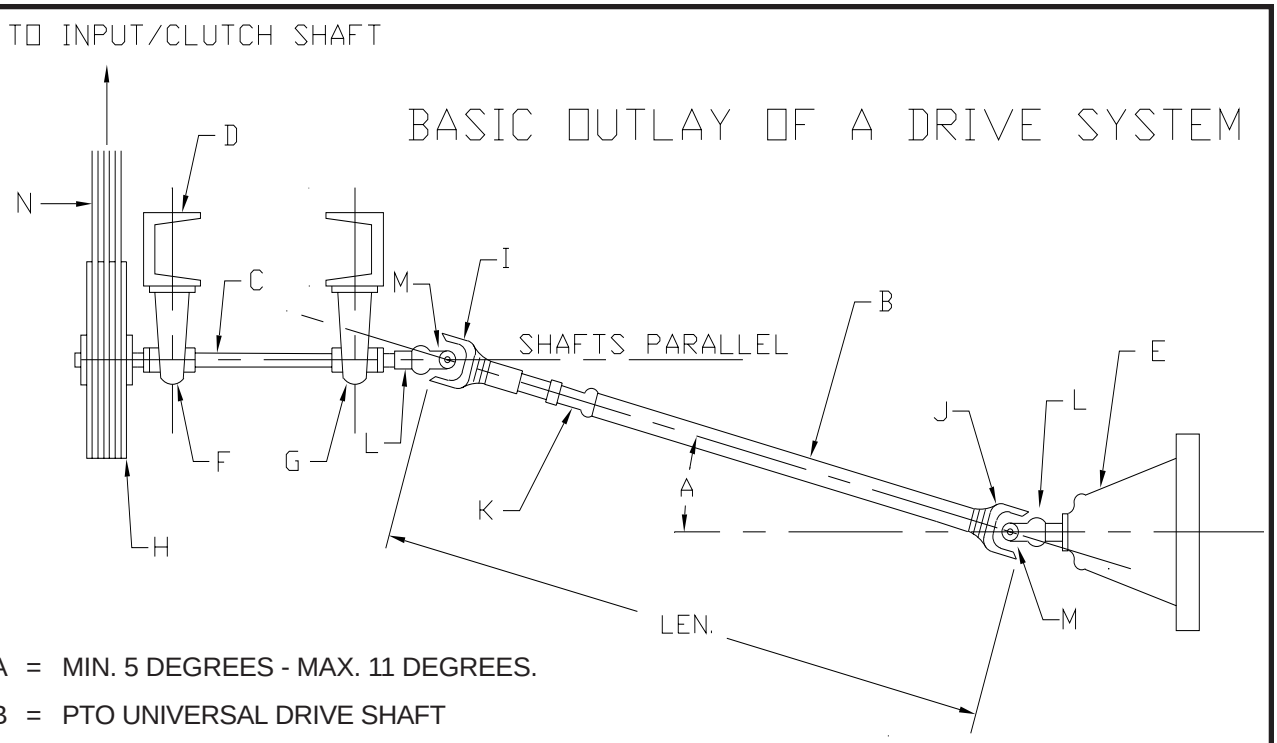


2. YOU WILL HAVE TO LOCATE THE ***VOLU-MATIC III*** MACHINE SO THAT THE CUT OUT IN THE FLOOR OF THE TRUCK BODY FOR THE BELT DRIVE LIES BETWEEN TRUCK CHASSIS CROSS MEMBERS. YOU WILL HAVE TO BE KEENLY AWARE OF OTHER OBSTACLES UNDER THE TRUCK THAT MAY INTERFERE WITH THE BELT DRIVE. YOU ALSO WANT TO KEEP THE MACHINE AS CLOSE AS POSSIBLE TO THE TRUCK BODY FRONT WALL TO MAXIMIZE MATERIAL STORAGE SPACE.

   YOU WILL ALSO HAVE TO LOCATE A CUT OUT FOR THE APPLICATORS HOSE CONNECTION TO THE AIRLOCK FEEDER IF DOORS ARE NOT DIRECTLY IN FRONT ON THE CURB SIDE OF THE TRUCK. FOUR INCH I.D. RUBBER HOSE AND SLEEVE ARE SUPPLIED WITH NEW DELIVERED MACHINES FOR THROUGH WALL CONNECTIONS.

   YOU WILL ALSO HAVE TO LOCATE A CUT OUT FOR THE BLOWER INLET CONNECTION. FLEXIBLE HOSE AND INTAKE FLANGE ARE SUPPLIED WITH NEW DELIVERED MACHINES FOR THROUGH WALL CONNECTIONS.

3. ONCE YOU ARE SATISFIED WITH THE MACHINE LOCATION, THE NEXT STEP IS TO GET THE DRIVE SYSTEM LOCATED UNDER THE TRUCK. MAKE ALL NECESSARY CUT OUTS AND BOLT THE MACHINE TO THE FLOOR. USE 3/8" GRADE 5 BOLTS TO SECURE THE MACHINE THROUGH THE FRONT AND REAR CHANNEL OF THE BASE FRAME. THE NEXT DRAWING SHOWS THE BASIC LAYOUT OF A DRIVE SYSTEM.



A = MIN. 5 DEGREES - MAX. 11 DEGREES.

B = PTO UNIVERSAL DRIVE SHAFT

UP TO 36" OVERALL LENGTH - USE 2" DIAMETER DRIVE SHAFT TUBING.

UP TO 54" OVERALL LENGTH - USE 2 ½" DIAMETER DRIVE SHAFT TUBING.

54" TO 72" MAXIMUM LENGTH - USE 3" DIAMETER DRIVE SHAFT TUBING.

OVERALL LENGTH ESTABLISHED DURING INSTALLATION WITH SLIP YOKE AT CENTER OF TRAVEL.

C = PTO OUTPUT DRIVE SHAFT

UP TO 36" CENTER DISTANCE - USE 1¼" C1045 COLD DRAWN SOLID.

*UP TO 44" CENTER DISTANCE - USE 2" O.D. x 1/8" WALL COLD DRAWN SEAMLESS TUBING.

*OVER 44" CENTER DISTANCE - USE 2 3/8" O.D. x 3/16" WALL COLD DRAWN SEAMLESS TUBING.

* OUTPUT SHAFTS MADE OF COLD DRAWN SEAMLESS TUBING WILL HAVE STUB SHAFTS AT EACH END TURNED DOWN TO MATCH BEARINGS.

D = 3" SHIP CHANNEL - WELD TO TRUCK FRAME AND BRACE (SEE NEXT PAGE FOR BEARING MOUNTS THAT C.M.W. MANUFACTURES FOR INSTALLATION AT THE FACTORY).

E = PTO BOX INSTALLED BY TRUCK MANUFACTURER OR TRUCK DEALER SERVICE CENTER.

F = EXPANSION PILLOW BLOCK BEARING - SET ACCORDING TO MANUFACTURER'S LITERATURE.

G = NON-EXPANSION PILLOW BLOCK BEARING - SET ACCORDING TO MANUFACTURER'S LIT.

H = OUTPUT DRIVE PULLEY

I = SLIP YOKE

J = STUB YOKE

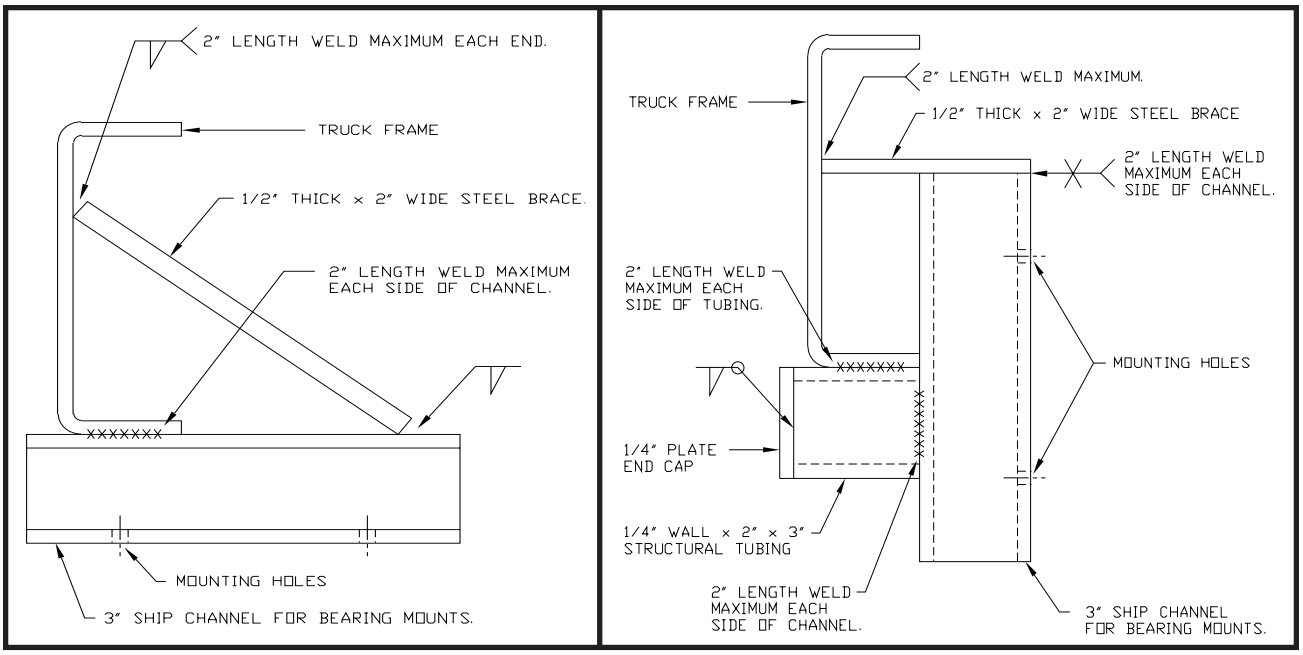
K = STUB SHAFT

L = END YOKE

M = CROSS

N = BELTS

4. IN ORDER TO SUPPORT THE DRIVE SYSTEM, YOU WILL HAVE TO MANUFACTURE BEARING MOUNTS FOR THE OUTPUT DRIVE SHAFT. THE NEXT TWO DRAWINGS SHOW DIFFERENT MOUNTING CONFIGURATIONS FOR BEARING MOUNTS. THE DRAWING ON THE LEFT SHOWS THE CHANNEL MOUNTS IN A HORIZONTAL POSITION. THE DRAWING ON THE RIGHT SHOWS THE CHANNEL MOUNTS IN A VERTICAL POSITION. EITHER MOUNTING CONFIGURATION WILL WORK. THE VERTICAL MOUNTING POSITION MAY WORK BETTER IF ANY ADJUSTMENT NEEDS TO BE MADE TO COMPENSATE FOR BELT LENGTH. MAKE SURE YOU DO NOT PLACE MORE WELD THAN SPECIFIED OR DAMAGE TO THE TRUCK FRAME COULD OCCUR. YOU CAN ALSO MANUFACTURE MOUNTS THAT BOLT TO THE TRUCK FRAME, EXTRA BRACING WILL BE REQUIRED TO DAMPEN VIBRATION.



5. FIRST, LOCATE THE OUTBOARD BEARING STAND SO THAT IT WILL BE AS CLOSE AS POSSIBLE TO THE OUTPUT PULLEY LOCATION. LOCATE THE INBOARD BEARING STAND SO THAT IT WILL BE AS CLOSE AS POSSIBLE TO THE END YOKE OF THE UNIVERSAL DRIVE SHAFT. MAKE SURE THAT YOU MAINTAIN THE MINIMUM OR MAXIMUM ANGLE OF THE UNIVERSAL DRIVE SHAFT. THE LENGTH OF THE UNIVERSAL DRIVE SHAFT WILL BE DETERMINED BY THE LOCATION OF THE INBOARD BEARING STAND IN RELATION TO THE PTO BOX OUTPUT SHAFT. ONCE THE BEARING STANDS ARE IN PLACE, MANUFACTURE NECESSARY SHAFTS FOR INSTALLATION. IF A TUBULAR DRIVE SHAFT IS MANUFACTURED FOR AN OUTPUT SHAFT, HAVE THE SHAFT BALANCED AT A DRIVE SHAFT SHOP ALONG WITH THE UNIVERSAL DRIVE SHAFT.

6. NEXT, INSTALL THE PILLOW BLOCK BEARINGS THAT SUPPORT THE OUTPUT DRIVE SHAFT. ONE PILLOW BLOCK BEARING ASSEMBLY IS A NON-EXPANSION TYPE AND ONE ASSEMBLY IS AN EXPANSION TYPE. MAKE SURE THAT THE EXPANSION TYPE IS MOUNTED NEXT TO THE OUTPUT PULLEY AND THAT THESE BEARINGS ARE SET ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS, SEE MANUFACTURER'S LITERATURE.

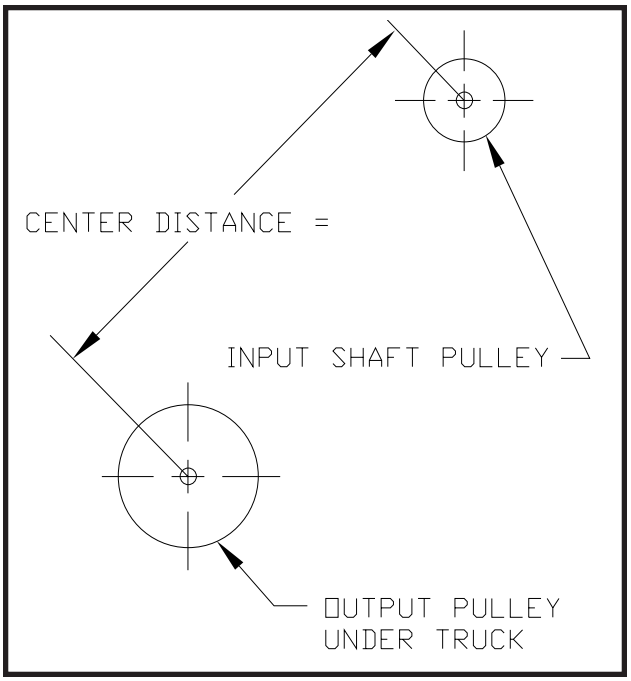
7. NEXT, INSTALL OUTPUT DRIVE SHAFT AND UNIVERSAL DRIVE SHAFT. MAKE SURE THAT THE SLIP YOKE AND STUB YOKE IN THE UNIVERSAL DRIVE SHAFT ARE POSITIONED AS SHOWN IN THE BASIC OUTLAY OF A DRIVE SYSTEM TO AVOID EXCESSIVE VIBRATION.

8. NOW THAT THE DRIVE SHAFTS ARE INSTALLED, THE NEXT STEP IS TO INSTALL THE OUTPUT PULLEY AND DRIVE BELTS. FIRST, THE PROPER OUTPUT DRIVE PULLEY HAS TO BE ESTABLISHED, THEN THE PROPER BELT LENGTH CAN BE ESTABLISHED. THE INPUT/CLUTCH SHAFT IS DESIGNED TO RUN AT **1900** RPM. THE INPUT/CLUTCH SHAFT WILL HAVE A **3BK57** PULLEY MOUNTED ON IT. THE OUTPUT SHAFT WILL HAVE TO BE TACHED WHILE THE TRUCK ENGINE IDLES AT THE MANUFACTURER'S RECOMMENDED RPM. IN THE CHART, FIND THE CLOSEST RPM IN THE COLUMN UNDER THE **3BK57** PULLEY, TO THE LEFT WILL SHOW THE OUTPUT PULLEY REQUIRED FOR INSTALLATION.

VOLU-MATIC III PTO INSTALLATION PULLEY CHART									
OUTPUT PULLEY UNDER TRUCK *	PTO INPUT/CLUTCH SHAFT DRIVEN PULLEY ON MACHINE								
	3BK50	3BK52	3BK55	**3BK57**	3BK60	3BK62	3BK65	3BK67	3BK70
3TB54	1550	1620	1720	1790	1900	1970	2080	2150	2250
3TB56	1490	1560	1660	1730	1830	1900	2000	2070	2170
3TB58	1440	1510	1610	1670	1770	1830	1930	2000	2100
3TB60	1390	1460	1550	1620	1710	1770	1870	1930	2030
3TB62	1350	1410	1500	1560	1650	1720	1810	1870	1960
3TB64	1310	1370	1450	1510	1600	1660	1750	1810	1900
3TB66	1270	1320	1410	1470	1550	1610	1700	1760	1840
3TB68	1230	1280	1370	1430	1510	1560	1650	1700	1790
3TB70	1190	1250	1330	1380	1470	1520	1600	1660	1740
3TB74	1130	1180	1260	1310	1390	1440	1510	1570	1640
3TB80	1050	1090	1160	1210	1280	1330	1400	1450	1520
3TB86	970	1020	1080	1130	1190	1240	1300	1350	1410
3TB90	930	970	1030	1080	1140	1180	1250	1290	1350
3TB94	890	930	990	1030	1090	1130	1190	1230	1290

* SOME APPLICATIONS MAY BE LIMITED TO PULLEY DIAMETER OR RPM OUTPUT FROM THE TRUCK. FIND THE APPROPRIATE OUTPUT PULLEY OR RPM AND THEN FIND THE APPROPRIATE DRIVE AND/OR DRIVEN PULLEY.

9. ONCE THE PULLEY DRIVE FOR THE ***VOLU-MATIC III*** PTO MODEL MACHINE IS DETERMINED, THE NEXT STEP IS TO DETERMINE THE PITCH LENGTH FOR THE B SECTION DRIVE BELTS. MAKING SURE THAT ALL MOUNTING IS COMPLETE, MEASURE THE CENTER DISTANCE BETWEEN THE OUTPUT SHAFT AND THE INPUT/CLUTCH SHAFT. RECORD THIS DISTANCE FOR USE IN A CALCULATION TO DETERMINE THE BELT PITCH LENGTH. THE NEXT CHART GIVES THE PITCH DIAMETERS OF THE PULLEYS SHOWN IN THE PULLEY CHART THAT WAS USED TO DETERMINE THE PULLEY DRIVE.



INPUT/CLUTCH SHAFT	PITCH DIAMETER	OUTPUT SHAFT UNDER TRUCK	PITCH DIAMETER
3BK50	4.4	3TB54	5.4
3BK52	4.6	3TB56	5.6
3BK55	4.9	3TB58	5.8
***3BK57**	5.1	3TB60	6.0
3BK60	5.4	3TB62	6.2
3BK62	5.6	3TB64	6.4
3BK65	5.9	3TB66	6.6
3BK67	6.1	**3TB68	6.8
3BK70	6.4	**3TB70	7.0
		**3TB74	7.4
		** 3TB80	8.0
		** 3TB86	8.6
		**3TB90	9.0
		**3TB94	9.4
		**3TB110	11.0
		**3TB124	12.4

* SUPPLIED ON MACHINE

** RANGE FOR MOST APPLICATIONS

10. NEXT, CALCULATE THE BELT PITCH LENGTH. THE THREE KEY NUMBERS; CENTER DISTANCE, OUTPUT PULLEY PITCH DIAMETER, AND INPUT PULLEY PITCH DIAMETER ARE USED IN A CALCULATION TO DETERMINE THE PITCH LENGTH OF THE "B" SECTION DRIVE BELTS. THE CALCULATION TO BE DONE IS SHOWN NEXT.

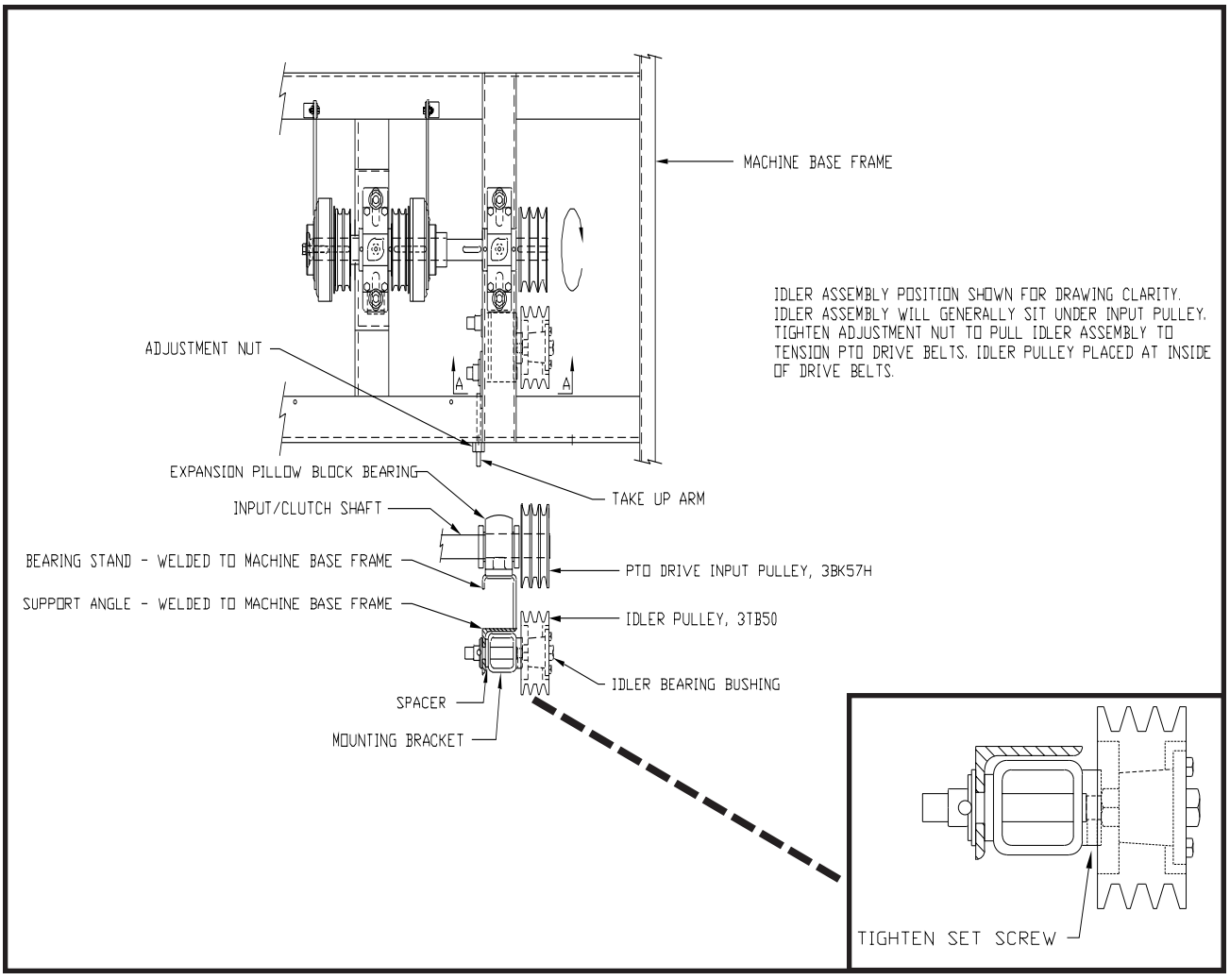
    1. "B" PITCH DIAMETER OF OUTPUT DRIVE PULLEY UNDER TRUCK. _____
    2. "B" PITCH DIAMETER OF INPUT PULLEY ON RIGHT ANGLE GEARBOX. _____
    3. ADD LINE 1 AND 2. _____
    4. MULTIPLY LINE 3 BY 1.57 _____
    5. MULTIPLY MEASURED CENTER DISTANCE BY 2. _____
    6. ADD LINE 4 AND 5 TO GET PITCH LENGTH OF REQUIRED BELTS. _____

1. FIND THE OUTPUT SHAFT DRIVE PULLEY IN THE CHART AND RECORD THE PITCH DIAMETER ON LINE 1 ABOVE.
2. FIND THE PTO INPUT SHAFT PULLEY IN THE CHART, USUALLY 3TB50, AND RECORD THE PITCH DIAMETER ON LINE 2.
3. ADD LINE 1 AND 2 AND RECORD ON LINE 3.
4. MULTIPLY LINE 3 BY 1.57 AND RECORD ON LINE 4.
5. MULTIPLY THE MEASURED CENTER DISTANCE BY TWO (2) AND RECORD ON LINE 5.
6. ADD LINES 4 AND 5 AND RECORD ON LINE 6. THIS IS THE "B" SECTION PITCH LENGTH OF REQUIRED DRIVE BELTS.

11. REFER TO THE FOLLOWING CHART TO MATCH A BELT PITCH LENGTH TO THE CALCULATED PITCH LENGTH ON LINE 6 IN THE PREVIOUS CALCULATION. IN MOST CASES, THE PITCH LENGTH IS NOT EXACT. SELECT THE LONGER PITCH LENGTH FOR USE ON THE DRIVE SYSTEM.

BELT	PITCH LENGTH	BELT	PITCH LENGTH	BELT	PITCH LENGTH
B70	71.8	B80	81.8	B90	91.8
B71	72.8	B81	82.8	B91	92.8
B72	73.8	B82	83.8	B92	93.8
B73	74.8	B83	84.8	B93	94.8
B74	75.8	B84	85.8	B94	95.8
B75	76.8	B85	86.8	B95	96.8
B76	77.8	B86	87.8	B96	97.8
B77	78.8	B87	88.8	B97	98.8
B78	79.8	B88	89.8	B98	99.8
B79	80.8	B89	90.8	B99	100.8

12. ONCE THE PULLEY SIZE AND BELT LENGTH FOR THE DRIVE ARE DETERMINED, MOUNT THE COMPONENTS MAKING SURE THE PULLEYS AND BELTS CLEAR ALL OBSTACLES. REFER TO NEXT DRAWING, TIGHTEN THE BELTS WITH THE IDLER PULLEY SUPPLIED WITH THE MACHINE. MAKE SURE THAT THE IDLER PULLEY IS USED ON THE SLACK SIDE OF THE BELTS AND TO THE INSIDE. IN THE DRAWING, THE TAKE UP ARM IS ROUTED TO PULL THE IDLER PULLEY AGAINST THE INSIDE OF THE BELT BY MEANS OF THE ADJUSTMENT NUT. DO THE OPPOSITE FOR COUNTERCLOCKWISE ROTATION. MAKE SURE THE BELT DEFLECTS A HALF INCH ON THE PULL SIDE WHEN FULLY TENSIONED. AFTER AN INITIAL RUN IN BREAK TIME, IT WILL MOST LIKELY BE NECESSARY TO RETENTION THE DRIVE BELTS.



13. POWER TO THE MACHINE IS SUPPLIED BY THE TRUCK BATTERY FOR ALL 12 VOLT ELECTRICAL FUNCTIONS. NEW DELIVERED MACHINES HAVE A 15 FOOT WIRE LEAD OUT OF THE HANDY BOX LOCATED BEHIND THE RIGHT SIDE END GUARD. THE WHITE WIRE IS CONNECTED TO THE CIRCUIT BREAKER AND GOES TO THE BATTERY POSITIVE POST. THE GREEN WIRE IS GROUND TO THE MACHINE AND GOES TO THE BATTERY NEGATIVE POST. WHEN THIS IS COMPLETE, INSTALL ANY GUARDS REMOVED FOR INSTALLATION AND FASTEN SECURELY.

NOTE: KEEP IN MIND THAT A WEAK TRUCK BATTERY MAY NOT BE POWERFUL ENOUGH TO RUN THE MACHINE. KEEP THE TRUCK BATTERY AND CHARGING SYSTEM IN VERY GOOD SHAPE.

WARNING: CARBON MONOXIDE POISONING FROM ENGINE EXHAUST CAN BE FATAL. MAKE SURE EXHAUST IS ROUTED AWAY FROM AIR INTAKE AND THE CUT OUT IN THE FLOOR. MAKE SURE THE TRUCK BODY IS WELL VENTILATED.

NOTE: A KIT OF DECALS FOR PTO INSTALLATION IS INCLUDED IN THE ACCESSORY KIT FOR NEW DELIVERED MACHINES. THESE DECALS SHOULD BE DISPLAYED ON THE TRUCK AS INDICATED BY THE INSTRUCTIONS PROVIDED WITH THEM. ADDITIONALLY, CERTAINTEED MACHINE WORKS MANUFACTURES AND INSTALLS AN ADDITIONAL GUARD FOR UNDER THE TRUCK TO FURTHER INSURE SAFETY WHEN INSTALLATION IS PERFORMED AT THE FACTORY. YOU SHOULD DO THE SAME.

14. REFER TO THE OPERATION SECTION FOR INITIAL START AND MACHINE OPERATION.

OPERATION

PRELIMINARY CHECKS

1. CHECK THE FOLLOWING TABLE FOR THE PROPER HOSE SIZE, TYPE, AND LENGTH FOR A PARTICULAR OPERATION. ALL HOSE COUPLINGS MUST BE THIN WALL, 1/16 INCH MAXIMUM, TO MINIMIZE RESTRICTIONS. THIN WALL COUPLINGS CAN BE PURCHASED FROM C.M.W.

MATERIAL	OPERATION	HOSE DIAMETER	HOSE LENGTH	HOSE TYPE
CELLULOSE FIBERGLASS ROCKWOOL	OPEN BLOW	3 ½" MINIMUM	150' MINIMUM	MARK **II**
CELLULOSE FIBERGLASS ROCKWOOL	SIDE WALL	2 ½" MINIMUM 3" MINIMUM 3" MINIMUM	150' MINIMUM	MARK **II**

2. MAKE SURE THAT HOPPER AREA IS EMPTY.
3. CHECK FOR PRESENCE OF OIL FROM THE BLOWER, TRANSMISSION, AND GEARBOX INDICATING A LEAK. ON ENGINE MODELS, CHECK FOR PRESENCE OF OIL FROM ENGINE INDICATING A LEAK. CHECK THE MAINTENANCE SECTION FOR PROPER LEVELS AND TYPE OF OIL USED IN EACH COMPONENT.
4. CHECK MATERIAL CONDITIONING SLIDE AND AIR BLEED VALVE POSITION. CHECK THE RECOMMENDED START SETTINGS CHART FOR PROPER POSITION.
5. MAKE SURE ALL GUARDS ARE IN PLACE AND SECURELY LATCHED.

WARNING: **ALWAYS OPERATE YOUR MACHINE WITH THE TRUCK SITTING ON A LEVEL SURFACE. OPERATING THE MACHINE WHEN THE TRUCK IS NOT LEVEL WILL LEAD TO FAILURE OF SOME MACHINE COMPONENTS. THE OIL LEVEL IN THE BLOWER, TRANSMISSION, AND GEARBOX, MAY NOT LUBRICATE INTERNAL PARTS PROPERLY WHEN THE TRUCK IS SITTING ON AN INCLINE.**

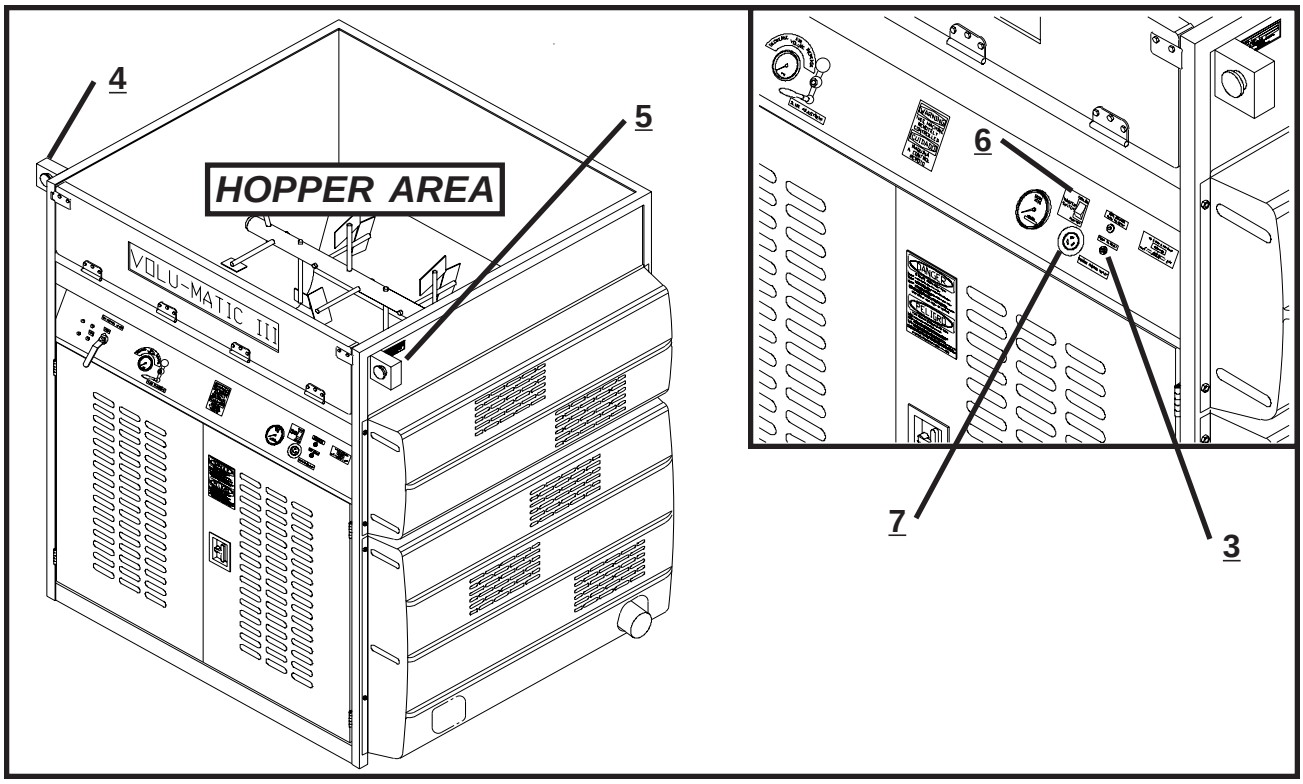
PRELIMINARY START-UP CHECKS

1. ON ENGINE DRIVEN MODELS, START THE ENGINE IN ACCORDANCE WITH MANUFACTURER'S LITERATURE AND INCREASE ENGINE SPEED UNTIL THE THROTTLE IS AT FULL STROKE. THE ENGINE WILL RUN **3600** RPM.

ON PTO MODEL MACHINES, START THE TRUCK AND ENGAGE THE PTO AT A LOW IDLE IN ACCORDANCE WITH TRUCK MANUFACTURER'S LITERATURE. BRING THE TRUCK UP TO THE RECOMMENDED SPEED ESTABLISHED DURING INSTALLATION. ALWAYS ENGAGE AND DISENGAGE THE PTO AT A LOW IDLE.

PTO OVER SPEED WARNING:

THE INPUT/CLUTCH SHAFT THAT POWERS THE DRIVE TRAIN ON THE MACHINE IS DESIGNED TO RUN AT A NOMINAL **1900** RPM. THIS SPEED SHOULD BE HELD WITHIN **25** RPM (1875 MINIMUM - 1925 MAXIMUM) SO THAT SUPPORT BEARINGS, CLUTCHES, ETC. WILL NOT GENERATE EXCESSIVE HEAT. OVER SPEEDING THE MACHINE CAN AND WILL DAMAGE SHAFTS, BEARINGS, AND CLUTCHES DRIVEN BY THE INPUT/CLUTCH SHAFT, AS WELL AS THE SHAFT ITSELF. **THIS IS ESPECIALLY TRUE IF THE TRUCK IS MOVED BEFORE THE PTO ATTACHMENT IS DISENGAGED AFTER OPERATING THE MACHINE**. REMEMBER, THE INPUT/CLUTCH SHAFT ROTATES AT ALL TIMES THE PTO IS ENGAGED. ANY OPTIONAL EQUIPMENT DRIVEN BY THE INPUT/CLUTCH SHAFT IS ALSO SUBJECT TO DAMAGE BECAUSE OF EXCESSIVE SPEEDS.

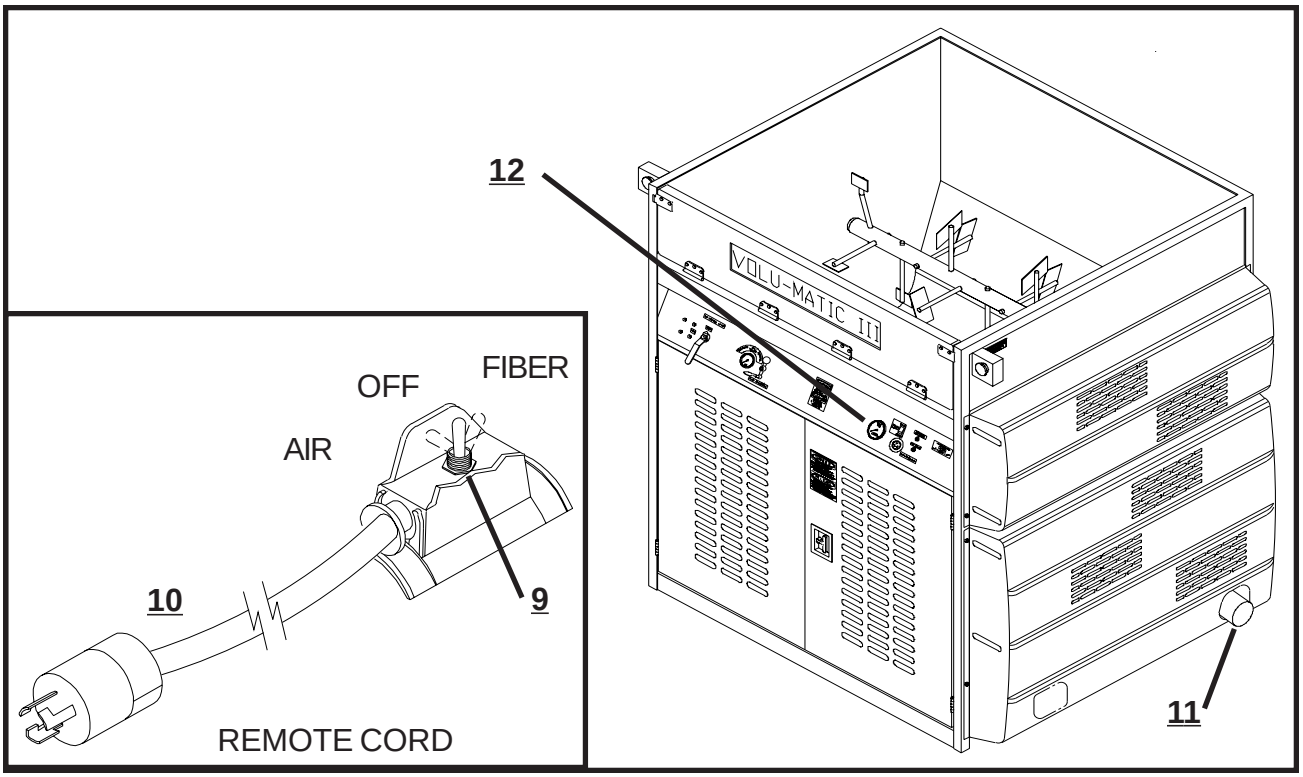


2. MAKE SURE THE HOPPER AREA IS EMPTY.
3. TURN ON THE MASTER SWITCH **6**; LIGHT INDICATES THE SWITCH IS ON.
4. PULL EMERGENCY STOP BUTTONS **4 & 5** OUT (ON) FOR OPERATION.
5. PUSH RESET BUTTON **3** FOR NEXT STEP.

6. MOVE THE TOGGLE SWITCH **9** TO THE CENTER (OFF) POSITION AND PLUG THE REMOTE CORD **10** SHIPPED WITH NEW DELIVERED MACHINES INTO THE RECEPTACLE **7**. THIS IS A TWIST LOCK CONNECTION.

7. CLEAR THE AREA IN FRONT OF THE AIRLOCK FEEDER OUTLET **11** FOR TESTING.

8. CYCLE THE TOGGLE SWITCH IN THE REMOTE CORD HOUSING TOWARD THE CORD AND THE BLOWER WILL COME ON, CHECK THAT AIR DOES EXIT THE AIRLOCK OUTLET. WITH THE BLOWER OPERATING SATISFACTORILY, CYCLE THE SWITCH TOWARD THE END OF THE HOUSING AND THE BLOWER AND MACHINE MECHANISMS WILL OPERATE SIMULTANEOUSLY. THE TACHOMETER **12** SHOULD READ **1050** RPM. THE TACHOMETER ALSO HAS AN HOUR METER THAT RECORDS MACHINE MECHANISM TIME; AIRLOCK FEEDER AND HOPPER COMPONENTS.

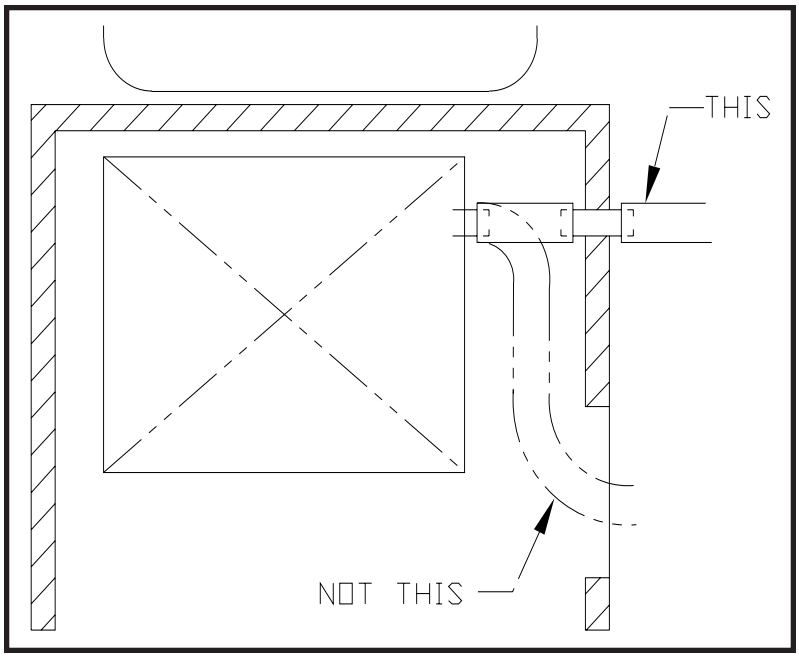


9. TAKE SOME TIME TO GET TO KNOW THE ***VOLU-MATIC III*** MACHINE. ENGAGE AND DISENGAGE THE REMOTE CORD NOTICING THE DRIVES START AND STOP. WITH MACHINE RUNNING, PUSH ONE EMERGENCY STOP BUTTON AND CHECK THAT THE DRIVES STOP. PULL EMERGENCY STOP BUTTON OUT, PUSH THE RESET BUTTON AND START THE MACHINE AGAIN. PUSH IN THE OTHER EMERGENCY STOP BUTTON AND CHECK THAT THE DRIVES STOP. IF THE REMOTE TOGGLE SWITCH WAS CYCLED OFF, THEN CYCLE THE TOGGLE SWITCH FOR THE DRIVES TO COME ON.

10. FOR ANY PROBLEMS ENCOUNTERED DURING PRELIMINARY START-UP PROCEDURES, CHECK THE TROUBLESHOOTING SECTION OR CALL CERTAINTEED MACHINE WORKS 800-237-7841.

WARNING:	**IF AT ANY TIME THE DRIVES DO NOT STOP WHEN AN EMERGENCY STOP BUTTON IS PUSH IN (OFF), REQUEST THAT MAINTENANCE BE PERFORMED ON THE SAFETY INTERLOCKS.**

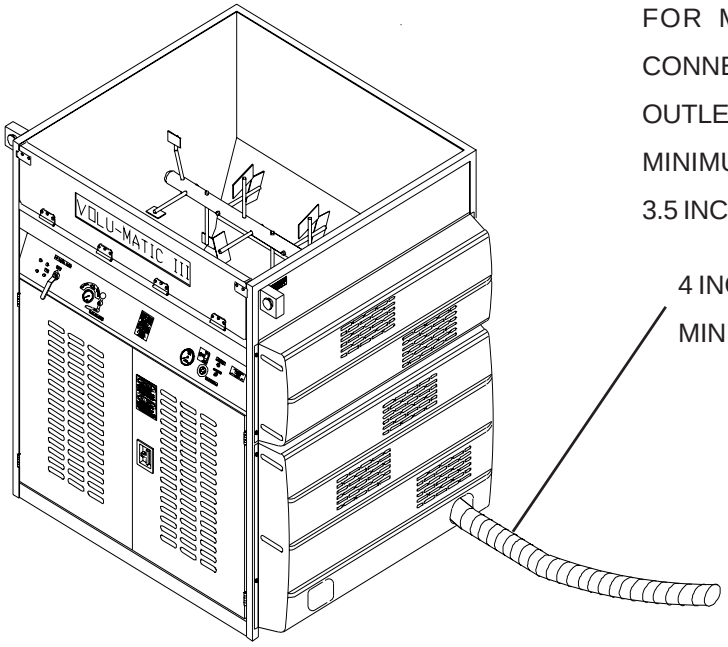
GETTING STARTED



1. USE THE PRELIMINARY AND START-UP CHECKS AS A CHECK LIST ON YOUR ***VOLU-MATIC III*** MACHINE EACH DAY BEFORE PROCEEDING TO THE JOB SITE. AT THE JOB SITE, CONNECT HOSE AT THE THROUGH WALL CONNECTION FIRMLY WITH BAND CLAMPS AND MAKE SURE THE HOSE DOES NOT HAVE A SHORT RADIUS BEND. A SHORT RADIUS BEND WILL RESULT IN POOR COVERAGE, EXCESSIVE HOSE AND FEEDER WEAR, AND/OR PLUGGED HOSES. USE THIN WALL COUPLINGS AND REDUCERS, 1/16 INCH MAXIMUM, TO MINIMIZE RESTRICTIONS.

   THE ***VOLU-MATIC III*** MACHINE WILL NOT PERFORM TO SPECIFICATIONS WHEN HELD BACK BY UNDERSIZED AND RESTRICTIVE HOSES, COUPLINGS, REDUCERS, AND/OR NOZZLES THAT ARE USED FOR SIDEWALL SPRAY OPERATIONS. FOR OPEN BLOW OPERATIONS, USE A 25 FOOT TO 50 FOOT LENGTH OF 4 INCH DIAMETER HOSE AT THE THROUGH WALL CONNECTION IF EXCESSIVE HIGH AIR PRESSURE IS EXPERIENCED USING ALL 3-1/2 INCH DIAMETER HOSE. FOR SIDEWALL SPRAY OPERATIONS, MAKE SURE THE NOZZLE THAT YOU USE HAS AN OPENING THAT IS AT LEAST THE SAME SQUARE INCH AREA OR GREATER THAN THE HOSE SELECTED. THE NOZZLE SHOULD ALSO HAVE A BODY WALL THAT IS NOT GREATER THAN 1/16 TO 1/8 INCH IN THICKNESS AND WITH A SMOOTH TAPERED ENTRANCE.

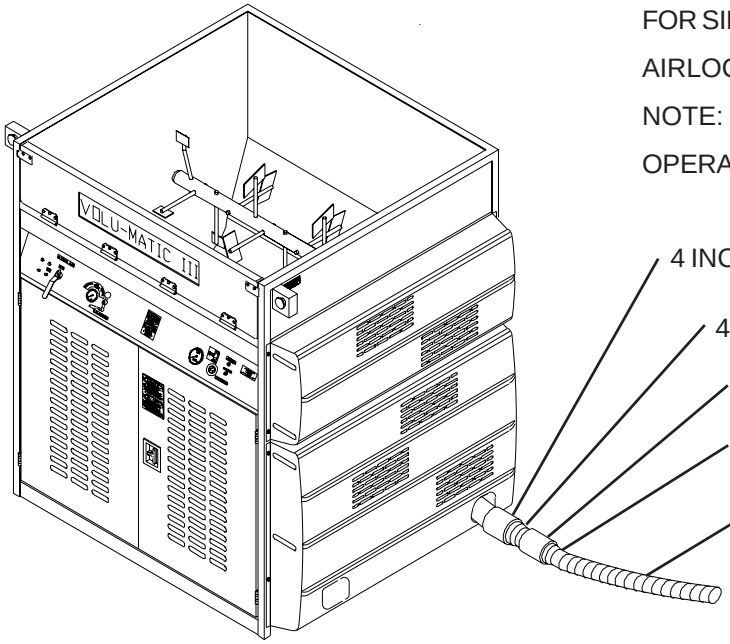
   REPEATED WARNINGS ABOUT CHOICE OF HOSE MAY SEEM TO BE AN ATTEMPT TO SELL OUR BRAND, BUT WE MUST STRESS THE IMPORTANCE OF PROPER HOSE SELECTION FOR THE TYPE MATERIAL AND OPERATION. A ROUGH BORE CORRUGATED HOSE IS NECESSARY FOR BLOWN FIBERS SINCE SMOOTH BORE RUBBER OR PLASTIC WILL ROLL SHREDDED MATERIAL INTO SMALL TIGHT BALLS. YOUR ***VOLU-MATIC III*** MACHINE HAS BEEN ENGINEERED, WHEN PROPERLY ADJUSTED, TO CONDITION FIBERS FOR OPTIMUM COVERAGE. IMPROPER HOSE SELECTION WILL DEGRADE FIBERS CONDITIONED BY THE MACHINE AND REDUCE INSULATION VALUE IN BLOWN MATERIAL. DO NOT DEVIATE FROM HOSE DIAMETERS, TYPES, OR LENGTH AS SPECIFIED IN THE TABLE.



FOR MAXIMUM OPEN BLOW OPERATION, CONNECT 4 INCH HOSE TO AIRLOCK FEEDER OUTLET. USE 4 - 3.5 REDUCER WHEN USING THE MINIMUM RECOMMENDED HOSE DIAMETER OF 3.5 INCH.

4 INCH OR 3.5 INCH BLOWING HOSE, MINIMUM 150 FEET.

NOTE: HOSE CONNECTIONS ARE GENERALLY MADE AT THE TRUCK BOX THROUGH WALL CONNECTION ESTABLISHED AT INSTALLATION.



FOR SIDE WALL OPERATION, CONNECT HOSE TO AIRLOCK FEEDER AS SHOWN IN THE DRAWING. NOTE: ADD 3 - 2.5 REDUCER FOR SIDE WALL OPERATION USING 2.5 INCH HOSE.

4 INCH RUBBER HOSE SLEEVE.

4 - 3.5 REDUCER.

3.5 INCH RUBBER HOSE SLEEVE.

3.5 - 3 REDUCER.

3 INCH BLOWING HOSE, MINIMUM 150 FEET.

2. MAKE SURE THE EMERGENCY STOP BUTTONS ARE PUSHED IN (OFF) AND THE REMOTE CORD TOGGLE SWITCH IS IN THE CENTER (OFF) POSITION.
3. USE THE RECOMMENDED START SETTINGS CHART TO ADJUST MACHINE FOR THE TYPE OF INSULATION YOU ARE USING AND PARTICULAR OPERATION.

VOLU-MATIC™ III RECOMMENDED START SETTINGS

OPERATION	MATERIAL	GATE SETTING	TRANSMISSION GEAR	AIR BLEED PRESSURE
OPEN BLOW	CELLULOSE	16"	3RD	2.0 - 3.5 PSI
	FIBERGLASS	16"	3RD	2.0 - 3.5 PSI
	ROCKWOOL	12"	2ND	4.5 - 5.5 PSI
SIDEWALL	CELLULOSE	8"	1ST	1.0 - 1.25 PSI
	FIBERGLASS	8"	2ND	1.0 - 1.25 PSI
	ROCKWOOL	6"	1ST	1.5 - 1.75 PSI

NOTE 1: USE THESE SETTINGS AS A STARTING GUIDE ONLY. VARIATIONS BETWEEN MATERIALS OF THE SAME TYPE AND VARIATIONS BETWEEN BATCHES FROM THE SAME MANUFACTURER MAY REQUIRE DIFFERENT SETTINGS THAN THOSE SUGGESTED. REMEMBER, THE MATERIAL MANUFACTURER'S INSTRUCTIONS PREVAIL SINCE THEY GUARANTEE THE FINAL RESULTS.

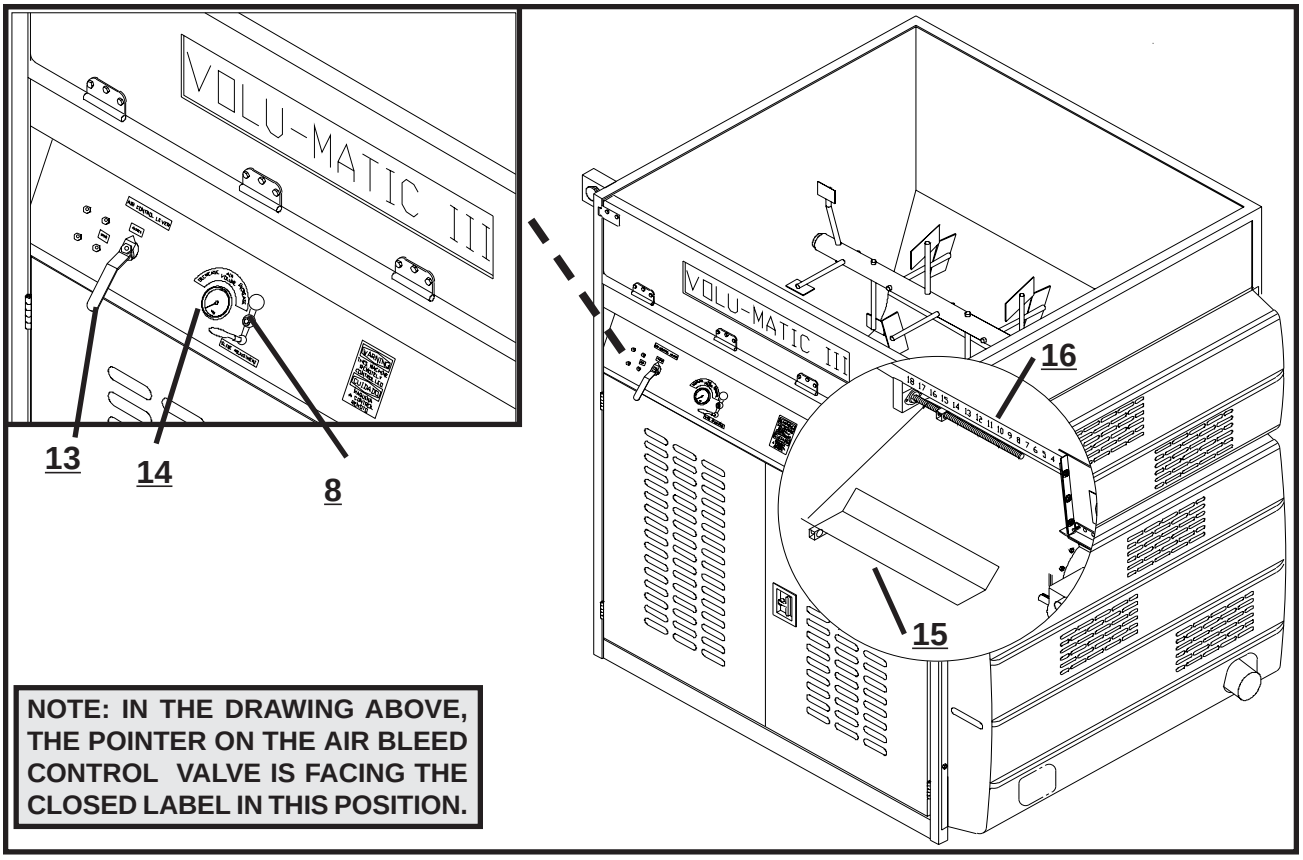
NOTE 2: AIR PRESSURE SETTINGS FOR SIDEWALL OPERATION ARE FOR DENSE PACK, NET FILL, AND DRILL & FILL OF OUTSIDE WALLS IN OLDER STRUCTURES. SPRAYING SIDEWALLS WILL RESULT IN HIGHER PRESSURE BASED ON WATER IN THE AIR STREAM.

GENERAL INSTRUCTIONS:

1. SET THE MACHINE SPEED SO THAT THE PANEL MOUNTED TACHOMETER READING IS 1050 RPM FOR OPEN BLOW OPERATION. REDUCE MACHINE SPEED UNTIL TACHOMETER READING IS 800 - 850 FOR ALL SIDEWALL OPERATIONS. **NOTE: DO NOT REDUCE SPEED IF YOU HAVE A BELT DRIVEN GENERATOR ON THE MACHINE UNLESS YOU REMOVE THE BELTS.**
2. VARY THE AIR BLEED PRESSURE FIRST. IF YOU CANNOT GET THE DESIRED RESULTS BY OPENING OR CLOSING THE AIR CONTROL LEVER, THEN...
3. VARY THE SLIDE GATE NEXT. IF YOU CANNOT GET THE DESIRED RESULTS BY CLOSING OR OPENING THE SLIDE GATE, THEN...
4. GO TO THE NEXT HIGHEST OR LOWEST SPEED ON THE TRANSMISSION. IF YOU CANNOT GET THE DESIRED RESULTS CHANGING THE SPEED, THEN...
5. ADD OR REMOVE STATOR BAR. IF YOU CANNOT GET THE DESIRED RESULTS BY ADDING OR REMOVING THE STATOR BAR, THEN START WITH VARYING THE AIR PRESSURE AGAIN.

4. AIR FLOW RATE MAY BE CONTROLLED WITH THE AIR BLEED CONTROL VALVE **13** WHILE MONITORING SYSTEM PRESSURE ON THE AIR GAUGE **14**. THE SYSTEM BACK PRESSURE MUST BE READ WHILE THE ***VOLU-MATIC III*** MACHINE IS OPERATING WITH FULL LENGTH AND PROPER HOSE WHILE MATERIAL IS BEING BLOWN.

   ALWAYS START THE ADJUSTMENT WITH THE AIR BLEED CONTROL VALVE IN THE FULLY CLOSED POSITION. IF THE AIR FLOW AND PRESSURE DELIVER THE DESIRED RESULTS WITH THE VALVE CLOSED, THEN DO NOTHING TO THE VALVE. AS YOU BEGIN TO OPEN THE VALVE, AIR IS BLED OFF FROM THE EXIT OF THE BLOWER PREVENTING FLOW OF ALL AIR TO THE AIRLOCK FEEDER. AS YOU OPEN THE VALVE, BE CAREFUL TO NOT OPEN COMPLETELY DURING OPEN BLOW OR THE BLOWING HOSE COULD CLOG BECAUSE OF INSUFFICIENT AIR VOLUME.

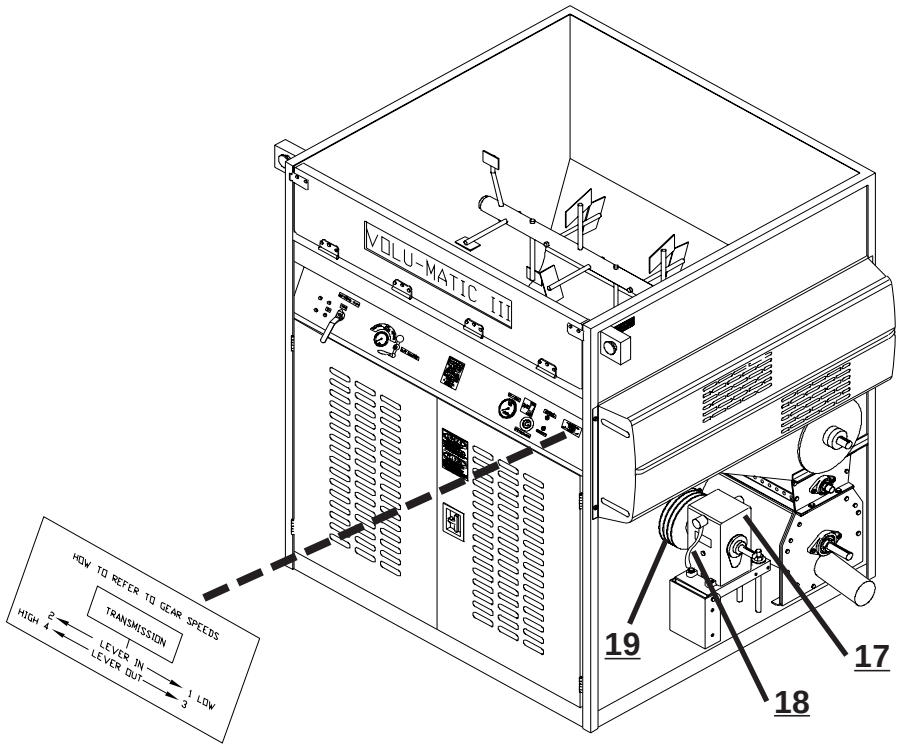


CAUTION: AS YOU OPEN THE VALVE, BE CAREFUL NOT TO OPEN COMPLETELY DURING OPEN BLOW OR THE BLOWING HOSE COULD CLOG BECAUSE OF INSUFFICIENT AIR VOLUME.

5. TO ADJUST THE SLIDE GATE **15**, REFER TO THE CHART AND SELECT THE PROPER SETTING FOR THE MATERIAL TO BE BLOWN AND PARTICULAR OPERATION. ROTATE THE HANDLE **8** ON THE MACHINE FRONT PANEL CLOCKWISE TO OPEN THE SLIDE GATE. LINE UP THE LEFT EDGE OF THE SLIDE GATE WITH THE DESIRED SETTING ON THE SCALE **16**. THE SCALE IS CALIBRATED IN INCHES OF OPENING.

6. TO ADJUST THE TRANSMISSION **17**, REFER TO THE CHART AND SELECT AN APPROPRIATE GEAR FOR MATERIAL AND TYPE OF OPERATION. SHIFT THE LEVER **18** INTO GEAR IN ACCORDANCE WITH DECAL INSTRUCTIONS ON THE MACHINE FRONT PANEL. SINCE THE TRANSMISSION IS NOT SYNCHRONOUS, IT MAY BE NECESSARY TO PULL THE GEARS THROUGH BY HAND USING THE PULLEY **19** SO THAT GEARS MESH ALLOWING YOU TO CHANGE THEM. THIS SHOULD NEVER BE ATTEMPTED OR GEARS SHIFTED WHILE THE MACHINE IS OPERATING.

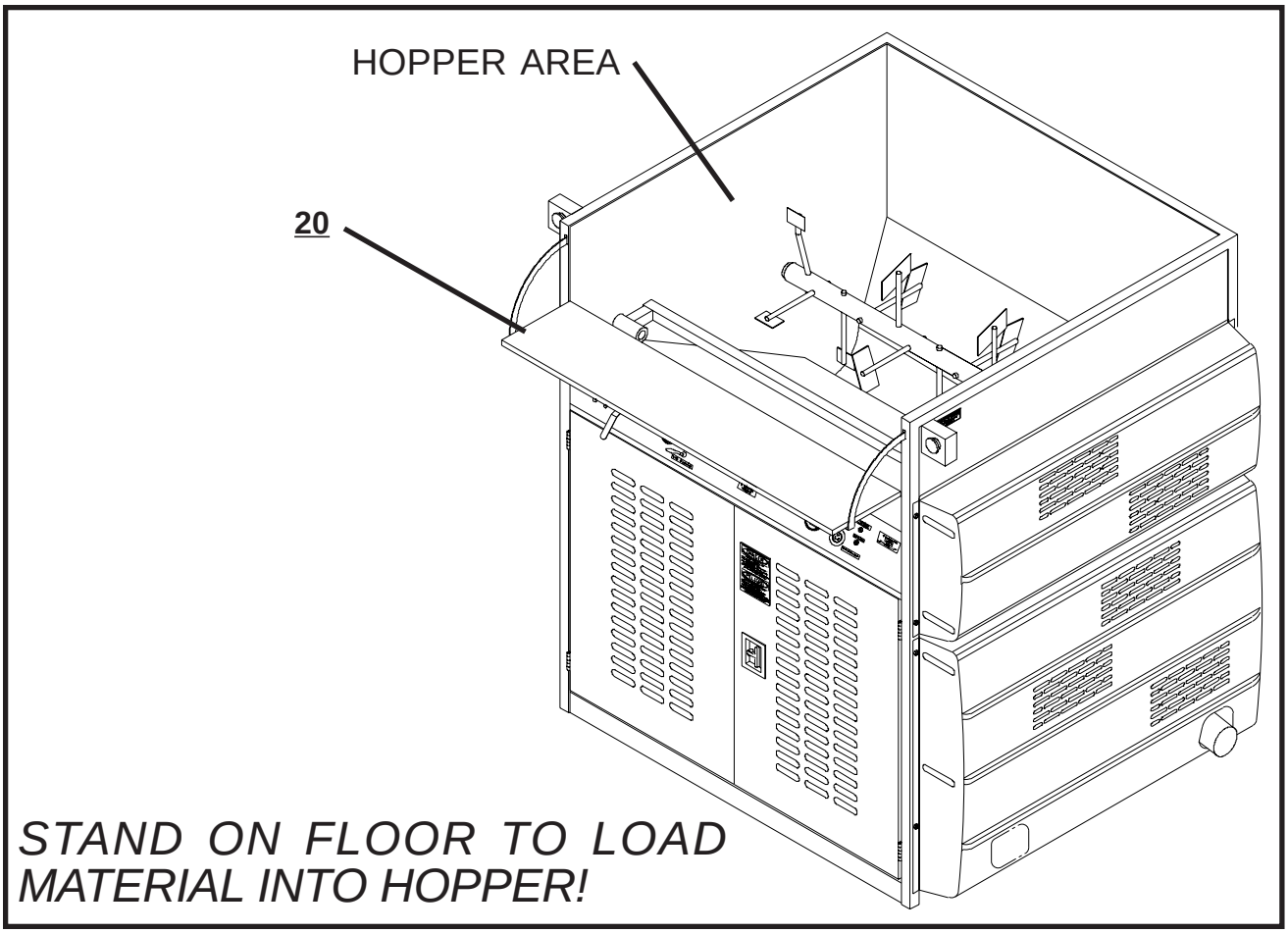
WARNING: NEVER ATTEMPT TO CHANGE GEARS WHILE THE *VOLU-MATIC III* MACHINE IS IN OPERATION. ALWAYS CHANGE GEARS WHEN THE MACHINE IS COMPLETELY SHUT DOWN. FAILURE TO DO SO CAN RESULT IN SERIOUS PERSONAL INJURIES OR A SEVERELY DAMAGED TRANSMISSION.



NOTE: LOWER END GUARD REMOVED FOR DRAWING CLARITY. YOU WILL ACCESS THE TRANSMISSION LEVER THROUGH THE FRONT SWING GATE GUARD. REMEMBER TO PUSH THE RESET BUTTON ONCE THE SWING GATE GUARD IS CLOSED. ALWAYS CHANGE GEARS WHILE THE MACHINE IS COMPLETELY SHUT DOWN.

7. LOAD THE MACHINE FROM A STANDING POSITION ON THE FLOOR DEPOSITING BAGS OF MATERIAL ON THE DROP GATE **20**. PULL THE DROP GATE SHARPLY TOWARD YOU TO LAY DOWN FOR LOADING AND THEN DEPOSIT THE MATERIAL INTO THE HOPPER. DO NOT BUILD SCAFFOLDING OR USE A FOOT STOOL TO LOAD MATERIAL INTO THE ***VOLU-MATIC III*** MACHINE. THIS MOVES THE OPERATOR CLOSER TO THE ROTATING COMPONENTS IN THE HOPPER AND PROVIDES A WAY TO LOSE BALANCE AND FALL.

   LOAD THREE TO FOUR BAGS OF MATERIAL INTO THE HOPPER BEING PARTICULARLY CAREFUL NOT TO LEAVE PIECES OF BAG IN THE MATERIAL SINCE THIS WILL CLOG AND STALL THE MACHINE. MAKE SURE TO KEEP THE HOPPER FULL DURING OPERATION WITHOUT OVERLOADING AND HAVING THE MATERIAL OVERFLOWING ONTO THE TRUCK FLOOR.



WARNING: DO NOT ATTEMPT TO REMOVE ANY FOREIGN OBJECT FROM THE MACHINE UNTIL IT IS COMPLETELY SHUT DOWN; MASTER SWITCH TURNED OFF, EMERGENCY STOP BUTTONS PUSHED IN, REMOTE CORDS UNPLUGGED, AND THE PTO DISENGAGED OR ENGINE SHUT DOWN. FAILURE TO DO SO WILL RESULT IN SERIOUS INJURIES BY THE ROTATING COMPONENTS IN THE HOPPER OR ON THE MACHINE.

8. PULL EMERGENCY STOP BUTTONS OUT (ON) FOR OPERATION AND THEN PUSH THE RESET BUTTON.
9. TAKE THE END OF THE BLOWING HOSE AND REMOTE CORD TO THE JOB'S STARTING POINT. ENGAGE REMOTE CORD FOR AIR AND MATERIAL TO BEGIN THE INSULATION BLOWING PROCESS.
10. UPON COMPLETION OF OPEN BLOW OPERATION, USE AIR ONLY FUNCTION FOR THE FOLLOWING;
    - CLEAR ALL MATERIAL OUT OF HOSE.
    - LEVEL OFF INSULATION MOUNDS.
    - BLOW OFF DUCT WORK AND CLEAR OUT AIR HANDLER DRIP PAN.
    - BLOW MATERIAL FROM RECESSED LIGHTS.
    - BLOW MATERIAL OUT OF SOFFITS

12 VOLT ELECTRICAL SYSTEM

THE FOLLOWING IS A DESCRIPTION OF THE 12 VOLT ELECTRICAL SYSTEM ON THE ***VOLU-MATIC III*** MACHINE, AN ELECTRICAL SCHEMATIC IS INCLUDED IN THE TROUBLESHOOTING SECTION.

POWER COMES FROM THE BATTERY THROUGH THE 20 AMP CIRCUIT BREAKER TO THE MASTER SWITCH **6**. WHEN THE MASTER SWITCH IS TURNED ON, ELECTRICITY FLOWS THROUGH THE SWITCH CAUSING THE LIGHT TO ILLUMINATE WHILE PROVIDING POWER TO THE LATCHING RELAY AND BLOWER RELAY. WITH THE EMERGENCY STOP BUTTONS **4 & 5** PULLED OUT (ON) AND SWING GATES CLOSED AGAINST THE SAFETY SWITCHES **2**, PRESSING THE RESET BUTTON **3** ENERGIZES THE LATCHING RELAY CONTACTS TO THE CLOSED POSITION ALLOWING POWER TO FLOW TO THE REMOTE CONTROL RECEPTACLE **7**. WHEN THE REMOTE CORD SWITCH **9** IS MOVED TOWARD THE CORD, POWER FLOWS TO THE BLOWER RELAY'S INTERNAL COIL. THIS CAUSES THE NORMALLY OPEN CONTACTS IN THE RELAY TO CLOSE SENDING POWER TO THE BLOWER CLUTCH WHILE ALSO PROVIDING POWER TO THE MECHANISM RELAY. WHEN THE REMOTE SWITCH IS MOVED TOWARD THE END OF THE SWITCH HOUSING, POWER FLOWS TO THE INTERNAL COILS OF THE BLOWER AND MECHANISM RELAYS. THIS CAUSES THE NORMALLY OPEN CONTACTS IN BOTH RELAYS TO CLOSE SENDING POWER TO THE RESPECTIVE CLUTCHES SIMULTANEOUSLY.

AT ANY TIME THAT AN EMERGENCY STOP BUTTON IS PUSHED IN (OFF) OR A SWING GATE GUARD IS OPENED WHILE THE MACHINE IS OPERATING, POWER IS DE-ENERGIZED AT THE LATCHING RELAY WHICH OPENS THE CONTACTS. THIS WILL STOP POWER FLOW TO THE REMOTE CONTROL RECEPTACLE AND RELAYS WHICH WILL DISENGAGE THE BLOWER AND MECHANISM CLUTCHES. YOU WILL HAVE TO PULL THE EMERGENCY STOP BUTTON OUT (ON) AND/OR CLOSE THE SWING GATE GUARD AND THEN PUSH THE RESET BUTTON TO RE-ENERGIZE THE REMOTE FUNCTION.

IF AN EMERGENCY STOP BUTTON IS PUSHED IN (OFF) OR A SWING GATE GUARD IS OPENED WHILE ONLY THE MASTER SWITCH IS ON BUT THE MACHINE IS NOT OPERATING, THE RESET BUTTON WILL HAVE TO BE PRESSED ONCE THE EMERGENCY BUTTON IS PULLED OUT (ON) OR SWING GATE IS CLOSED TO ENERGIZE THE LATCHING RELAY FOR MACHINE OPERATION. THIS IS ALSO TRUE FOR ANY TROUBLESHOOTING REQUIREMENTS YOU MAY ENCOUNTER.

NOTE: ON OLDER MODEL EQUIPMENT, THE LATCHING RELAY AND RESET BUTTON ARE NOT USED. WHEN THE MASTER SWITCH IS TURNED ON, POWER FLOWS TO THE BLOWER RELAY AND REMOTE RECEPTACLE.

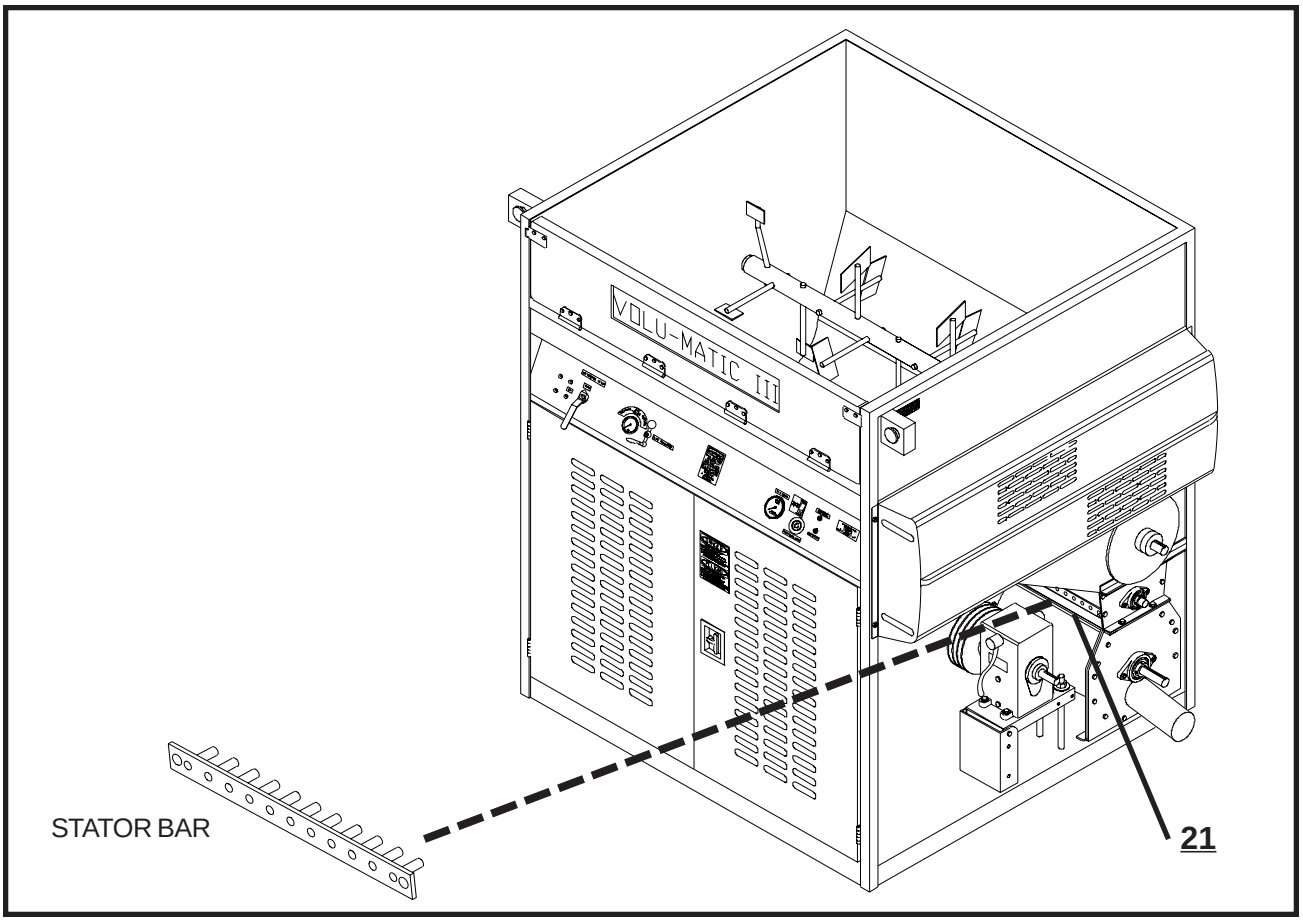
NOTE: ALWAYS TURN THE MASTER SWITCH OFF AT THE END OF THE JOB. LEAVING THE MASTER SWITCH ON WILL DRAIN BATTERY POWER. A BATTERY LOW ON POWER WILL CAUSE THE CLUTCHES TO SLIP DURING OPERATION OR NOT ENGAGE AT ALL.

COVERAGE - OPEN BLOW

COVERAGE MAY BE DEFINED AS THE MAXIMUM ALLOWABLE SQUARE FEET COVERED PER BAG AT A MINIMUM SPECIFIED DEPTH AND WEIGHT PER SQUARE FOOT AT A GIVEN "R" VALUE. A MANUFACTURER MIGHT RECOMMEND THAT THE MATERIAL BE BLOWN AT A RATE OF 79 SQ./FT. PER BAG AT A DEPTH OF 8 ¾ INCHES AND A WEIGHT 0.444 LBS. SQ. FT. TO ACHIEVE AN INSULATION VALUE OF R-19. IF YOU OPENED A BAG OF MATERIAL AND HAND DISTRIBUTED IT TO A DEPTH OF 8 ¾ INCHES, IT WOULD ONLY COVER 15 - 16 SQ./FT. FIBER MUST BE WORKED OR CONDITIONED BY YOUR ***VOLU-MATIC III*** MACHINE TO ACHIEVE COVERAGE OF 79 SQ./FT. PER BAG.

COVERAGE DECREASES WHEN FEED RATES ARE TOO LOW AND MATERIAL IS OVERWORKED BY THE MACHINE MECHANISMS (OR THE WRONG HOSE IS USED) ROLLING THE FIBERS INTO TIGHT LITTLE BALLS. COVERAGE WILL ALSO DECREASE IF FEED RATES ARE TOO HIGH, ALLOWING MATERIAL TO PASS THROUGH THE MACHINE BEFORE IT HAS BEEN OPENED TO THE PROPER DENSITY.

AN OPTION TO COVERAGE PROBLEMS CAN ALSO BE CONTROLLED TO SOME EXTENT WITH THE USE OF A STATOR BAR IN THE SHREDDER HOUSING. REMOVE COVER PLATE **21** AND INSERT STATOR BAR MAKING SURE SHREDDER HAMMERS CLEAR PINS BEFORE BOLTING DOWN. THIS ADJUSTMENT SHOULD BE DONE ONLY AFTER VARIOUS SETTINGS OF THE AIR BLEED CONTROL VALVE, SLIDE GATE, AND TRANSMISSION SPEED DO NOT GAIN DESIRED RESULTS. THE STATOR BAR CAN HELP INCREASE COVERAGE, BUT IT CAN ALSO DECREASE COVERAGE AND SLOW THE FEED RATE OF THE MACHINE.



COVERAGE - SIDEWALL SPRAY

COVERAGE, OR THE AMOUNT OF MATERIAL USED ON THE JOB IS DIRECTLY RELATED TO MATERIAL DENSITY ON THE SURFACE AND DENSITY IS A PRODUCT OF MATERIAL CONDITIONING AND AIR VELOCITY OR IMPACT ON THE APPLIED SURFACE. DENSITY CAN BE REGULATED BY MACHINE SETTINGS, DISTANCE OF THE SPRAY NOZZLE FROM THE SURFACE, AND BY THE AMOUNT OF WATER. TOO CLOSE TO THE STRUCTURE OR TOO MUCH WATER RESULTS IN HIGH DENSITY AND POOR COVERAGE. TOO FAR FROM THE SURFACE OR TOO LITTLE WATER WILL YIELD DENSITIES BELOW SPECIFICATIONS.

THE SPRAY NOZZLE SHOULD BE HELD APPROXIMATELY THREE FEET FROM THE SURFACE AS A STARTING POINT AND THE DISTANCE VARIED AS REQUIRED. DENSITIES WILL VARY AS THE JOB PROGRESSES FROM DRY MATERIAL TO DRY AND WET MATERIAL AFFECTING NOZZLE VELOCITY. INTRODUCING WET MATERIAL INTO THE HOPPER IN A CONSISTENT MANNER BLENDING WITH DRY MATERIAL WILL HELP TO CONTROL DENSITY. THE RECOMMENDED START SETTINGS ARE JUST THAT AND CAN VARY FROM JOB TO JOB.

GENERAL

YOUR ***VOLU-MATIC III*** MACHINE IS PRIMARILY A MATERIAL CONDITIONING AND AIR CONVEYING SYSTEM. FIBERS ARE CONDITIONED OR OPENED TO THE PROPER DENSITY BY MECHANISMS IN THE HOPPER, THE SHREDDER, AND THEN AIR CONVEYED INTO SIDEWALL OR ATTIC BY THE BLOWER, AIRLOCK FEEDER, AND HOSE.

SUMMARY

- PERFORM PRELIMINARY CHECKS.
- PERFORM INITIAL START UP.
- SELECT PROPER HOSE.
- LOAD MATERIAL INTO HOPPER.
- ADJUST SLIDE GATE.
- ENGAGE TRANSMISSION INTO GEAR.
- START ENGINE OR TRUCK AND ENGAGE TRUCK MOUNTED PTO BOX
- TURN ON MASTER SWITCH.
- PLUG IN REMOTE CORD WITH TOGGLE SWITCH IN CENTER (OFF) POSITION.
- START BLOWING MATERIAL AND ADJUST AIR ONCE MATERIAL REACHES HOSE END.
- CHECK COVERAGE.

PREVENTIVE MAINTENANCE

GENERAL

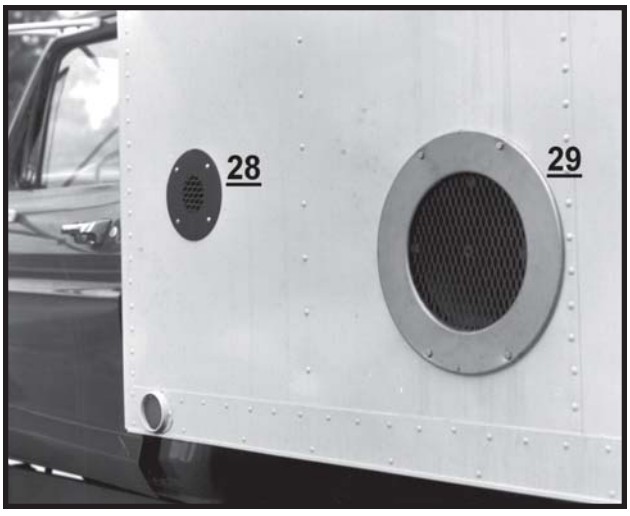
MAKE SURE ALL POWER IS OFF AND THE TRUCK MOUNTED PTO CONTROLS ARE DISENGAGED BEFORE ATTEMPTING ANY MAINTENANCE PROCEDURES. THE ONLY EXCEPTIONS ARE THE BLOWER RELIEF VALVE WHICH REQUIRES NO ENTRANCE INTO THE MACHINE AND THE INDUSTRIAL ENGINE MAINTENANCE SUCH AS; TUNE UP, CARBURETOR ADJUSTMENT, ETC. CHECK FOR LOOSE NUTS AND BLOTS, CHECK FOR SLACK AND CONDITION OF CHAINS AND BELTS, AND CHECK FOR OIL LEAKS ESPECIALLY AFTER THE FIRST FEW DAYS OF OPERATION. CHECK THE CONDITION OF THE BLOWING HOSE AND FOR ANY BUILD UP OF MATERIAL. KEEP THE MACHINE CLEAN.

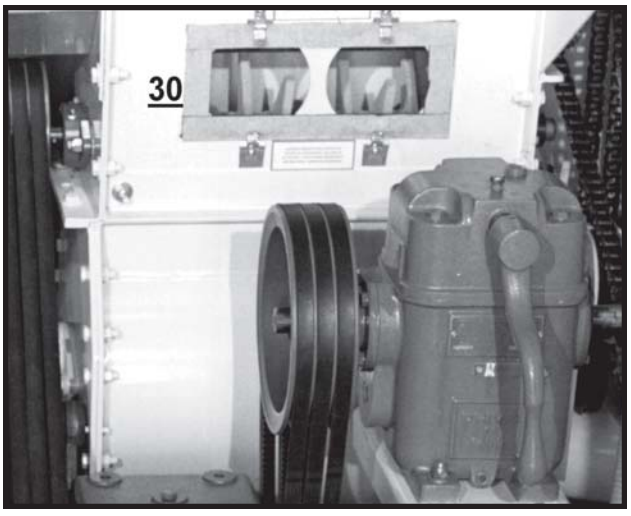
DAILY

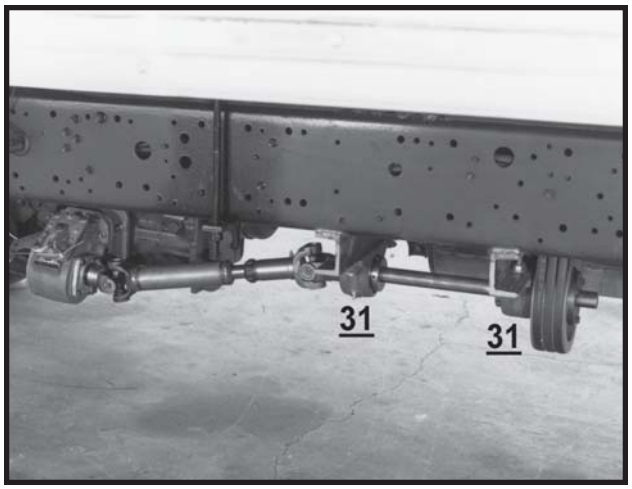
1. EMPTY THE HOPPER AND BLOWING HOSE COMPLETELY AT THE END OF EACH DAY.
2. CLEAN THE SPRAY NOZZLE OF ANY MATERIAL BUILD UP.
3. CHECK AND CLEAN THE BLOWER AIR INLET TRUCK FLANGE **28** AND INDUSTRIAL ENGINE COOLING AIR INLET TRUCK FLANGE **29** AND AS REQUIRED DURING OPERATION. KEEP THESE SCREENS CLEAN.
4. VISUALLY INSPECT AND REMOVE ANY FOREIGN OBJECTS THAT MAY HAVE ENTERED THE MACHINE, SUCH AS; PIECES OF BAG, RAGS, ETC.
5. MAKE SURE THE SWING GATE SAFETY **2** SWITCH IS FUNCTIONAL.

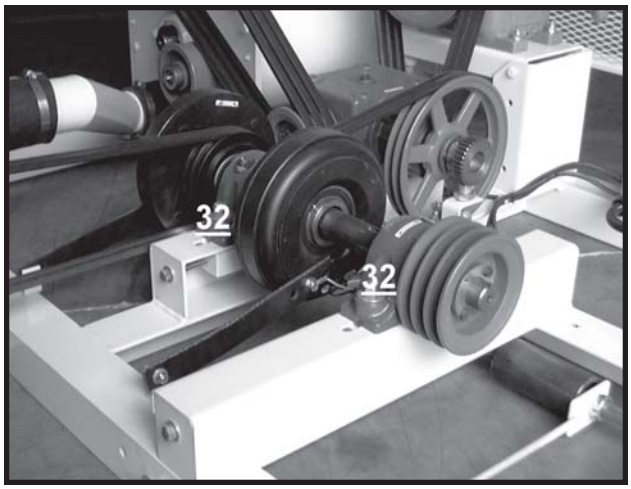
WEEKLY

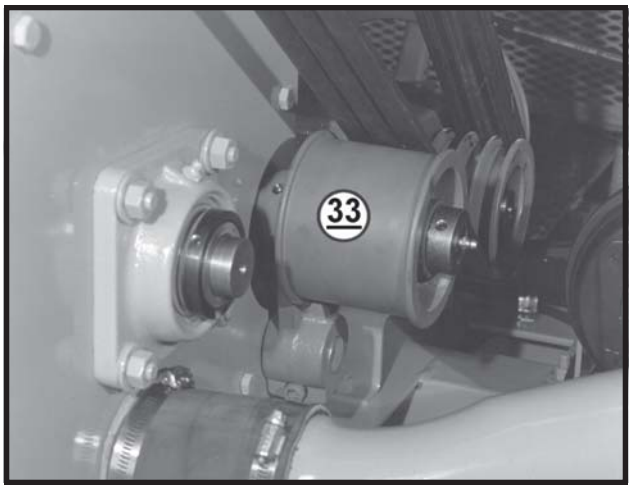
1. CHECK FOR SLACK AND CONDITION OF THE PTO DRIVE BELTS FROM UNDER THE TRUCK. KEEP A SPARE SET ON HAND IN CASE OF DAMAGE.
2. VISUALLY INSPECT SHREDDER HAMMERS FOR TIP WEAR THROUGH ACCESS WINDOW **30**. WINDOW MAY BE REMOVED TO CLEAR BLOCKAGES OCCURRING IN THIS AREA.
3. **VERY IMPORTANT** - GREASE THE PTO DRIVE PILLOW BLOCK BEARINGS **31** NO MORE THAN 2 PUMPS FROM A HAND OPERATED GUN.
4. **VERY IMPORTANT** - GREASE THE INPUT/ CLUTCH SHAFT PILLOW BLOCK BEARINGS **32** NO MORE THAN 2 PUMPS FROM A HAND OPERATED GUN.

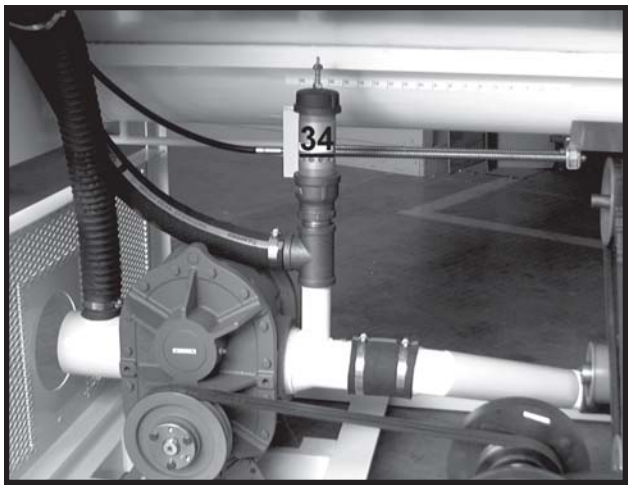












5. CHECK THE OIL LEVEL IN THE BLOWER.
6. CHECK THE OIL LEVEL IN THE GEARBOX(S).
7. CHECK THE OIL LEVEL IN THE TRANSMISSION.
8. GREASE THE SHREDDER DRIVE BELTS FLAT FACE IDLER **33** NO MORE THAN 1 PUMP FROM A HAND OPERATED GREASE GUN.
9. CHECK BLOWER RELIEF VALVE **34** FUNCTION.
10. CHECK CHAIN AND BELT TENSION, ADJUST AS REQUIRED.

AIRLOCK FEEDER

THE AIRLOCK FEEDER WILL REQUIRE PERIODIC MAINTENANCE TO PROLONG THE LIFE OF THE ASSEMBLY SINCE STEEL WILL WEAR WHEN ABRASIVE TYPE MATERIALS AND AIR VELOCITY ARE MIXED. FEEDER SEALS MUST BE CHANGED EVERY 250 HOURS OF OPERATION OR APPROXIMATELY EVERY 1 ½ MONTHS IF THE ***VOLU-MATIC III*** MACHINE IS OPERATED 8 HOURS A DAY 5 DAYS A WEEK, OR SOONER DEPENDING UPON THE TYPE OF MATERIAL. FAILURE TO CHANGE SEALS ON SCHEDULE WILL RESULT IN EXCESSIVE WEAR AND REPLACEMENT OF THE FEEDER ASSEMBLY.

CHANGE THE VOLU-MATIC™ III AIRLOCK FEEDER SEALS AS FOLLOWS:

A. MAKE SURE YOU HAVE A COMPLETE SET OF SEALS (SIX) BEFORE THE JOB IS STARTED.

B. MAKE SURE ALL POWER IS DISCONNECTED; DISTRIBUTOR WIRE ON ENGINE, PTO DISENGAGED, MASTER SWITCH OFF, REMOTE CORD UNPLUGGED, ETC.

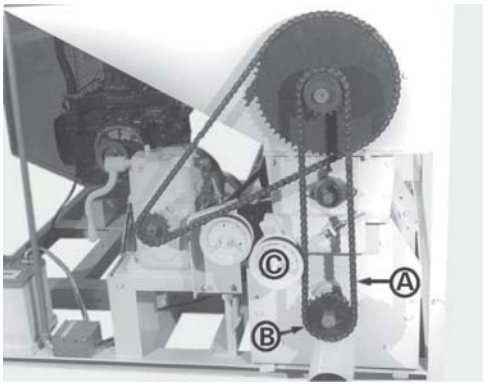
C. REMOVE NECESSARY GUARDS TO DO THE JOB AFTER POWER IS DISCONNECTED, BE SURE THAT ALL GUARDS ARE INSTALLED AND SECURE WHEN JOB IS COMPLETE.

D. ONCE THE OUTLET END PLATE IS REMOVED, CHECK FOR EXCESSIVE WEAR ON THE FEEDER BARREL AND END PLATE SURFACES. NEW SEALS WILL NOT BE EFFECTIVE IN AN EXCESSIVELY WORN FEEDER. INSPECT ROTOR FOR ANY WEAR AND REPAIR AS REQUIRED.

E. REPLACE EXCESSIVELY WORN OR DAMAGED FEEDER BARREL AND/OR END PLATES AND BEARING FELT SEALS FOR OPTIMUM PERFORMANCE FROM YOUR VOLU-MATIC III MACHINE. EXCESSIVELY WORN PARTS ARE CONSIDERED TO BE WHEN 25% OF METAL THICKNESS HAS WORN AWAY, SEE REPLACE THE FEEDER END PLATES.

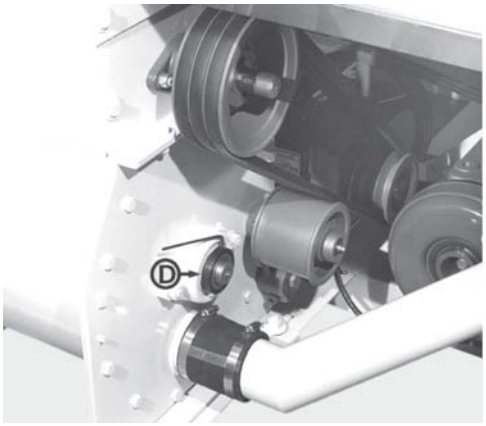
F. SUPPLIES AND TOOLS FOR SEAL CHANGE:
- **SET OF SEALS, PART NO. A-39U-18.**
- **SPARE 1/4"-20 x 5/8" LENGTH GRADE FIVE BOLTS AND LOCK WASHERS.**
- **SPRAY SILICON, NEVER-SEIZE SHAFT LUB, PENETRATING OIL, EMERY CLOTH,**
- **FEEDER CRANK HUB AND ROD, DEAD BLOW HAMMER, SMALL PUNCH AND BALL PEEN**
- **HAMMER, VICE GRIP PLIERS, PRY BARS, FLAT FILE, MISCELLANEOUS SOCKETS AND**
- **OPEN END WRENCHES, MISCELLANEOUS HEX HEAD ALLEN WRENCHES.**

1.



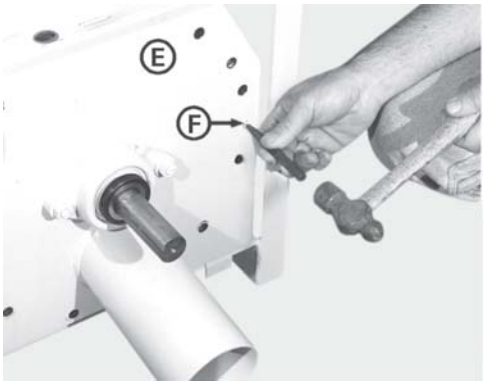
REMOVE DRIVE CHAIN **A**, FEEDER SPROCKET **B**, AND CHAIN IDLER ASSEMBLY **C**.

2.



LOOSEN SET SCREWS IN THE BEARING COLLAR **D** ON THE INLET END PLATE ONLY.

3.

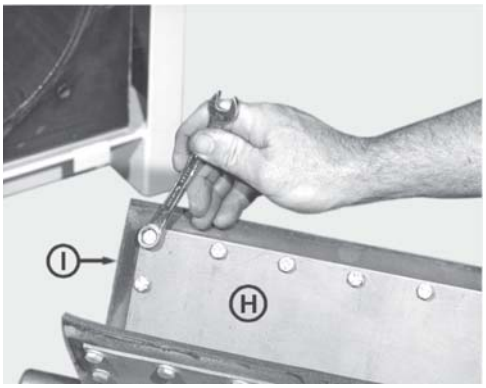


REMOVE MOUNTING BOLTS IN OUTLET END PLATE **E** AND DRIVE ROLL PINS **F** OUT OF FEEDER ASSEMBLY.

4.

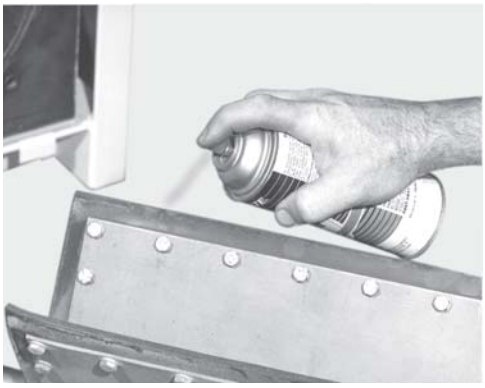
USE PRY BARS BETWEEN END PLATE AND FEEDER BARREL TO BRING ENTIRE ROTOR ASSEMBLY OUT. CLEAN, FILE, AND POLISH ROTOR SHAFT **G**. LOOSEN SET SCREWS IN BEARING COLLAR AND SLIDE END PLATE OFF ROTOR SHAFT.

5.



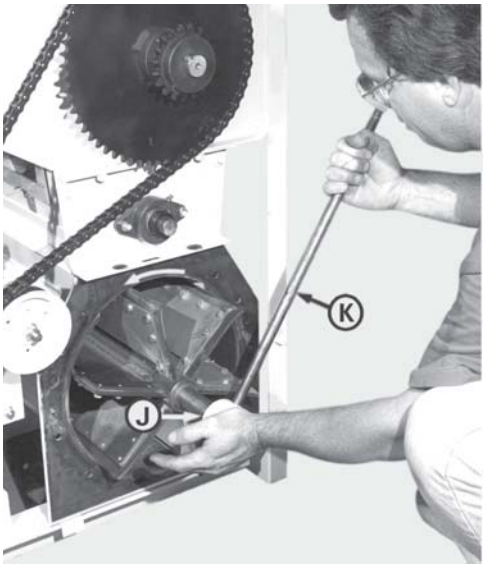
REMOVE THE BOLTS THAT HOLD THE BACKING PLATE **H** AND SEAL **I** TO THE ROTOR ASSEMBLY. CLEAN THE ROTOR VANE SURFACE BEFORE PLACING IN A NEW SEAL. BOLT ON BACKING PLATE MAKING SURE NOT TO OVER TIGHTEN DISTORTING THE SEAL.

6.



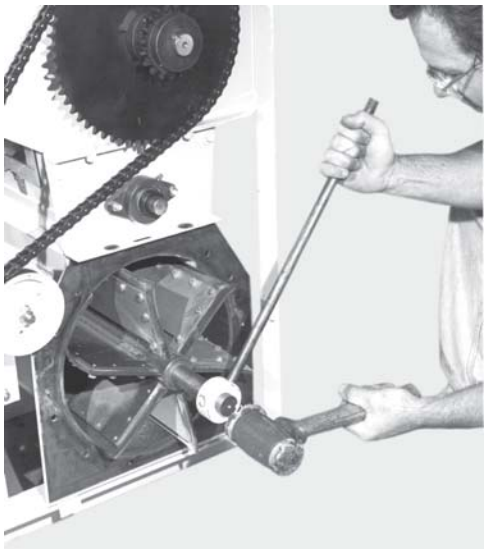
APPLY SPRAY SILICON TO EDGES OF NEW RUBBER SEALS AND SURFACE OF FEEDER BARREL. APPLY NEVER-SEIZE LUB ON INLET BEARING RACE.

7.



INSERT ROTOR ASSEMBLY INTO FEEDER BARREL ROTATING COUNTERCLOCKWISE USING CRANK HUB **J** AND ROD **K** WHILE PUSHING WITH FREE HAND. MAKE SURE BEARING FELT AT INLET END PLATE DOES NOT PINCH BETWEEN ROTOR SHAFT AND BEARING RACE.

8.



ONCE ROTOR SHAFT ENTERS THE INLET BEARING, IT MAY BE NECESSARY TO USE A DEAD BLOW SOFT HAMMER TO FIT ROTOR ALL THE WAY IN THE FEEDER WHILE ROTATING. PUSH ROTOR AS FAR IN AS POSSIBLE WITH SEALS BEGINNING TO BEND OVER ON THE SIDE AGAINST THE INLET END PLATE.

9.

DRIVE ROLL PINS INTO END PLATE BEFORE SLIDING ON ROTOR SHAFT. ALIGN TO EXISTING HOLES AND HAMMER IN, USE VISE GRIP PLIERS TO DRAW END PLATE UP TO RUBBER SEALS.

INSTALL MOUNTING BOLTS AND TIGHTEN HALF WAY DOWN - ROTATE ROTOR - TIGHTEN BOLTS - ROTATE ROTOR - TIGHTEN BOLTS COMPLETELY - ROTATE ROTOR.

PEER THROUGH OUTLET END PLATE TO SEE IF RUBBER SEALS BREAK OVER AGAINST END PLATES EVENLY - ADJUST AS REQUIRED BY ROTATING ROTOR AND TAP WITH DEAD BLOW HAMMER. TIGHTEN SET SCREWS IN BEARING COLLARS WHEN ROTOR IS CENTERED. INSTALL DRIVE COMPONENTS AND ANY GUARDS REMOVED. DISCARD OLD SEALS.

CHANGE THE VOLU-MATIC™ III SIDE ACCESS DOOR AIRLOCK FEEDER SEALS AS FOLLOWS:

A. MAKE SURE YOU HAVE A COMPLETE SET OF SEALS (SIX) BEFORE THE JOB IS STARTED.

B. MAKE SURE ALL POWER IS DISCONNECTED; DISTRIBUTOR WIRE ON ENGINE, PTO DISENGAGED, MASTER SWITCH OFF, REMOTE CORD UNPLUGGED, ETC.

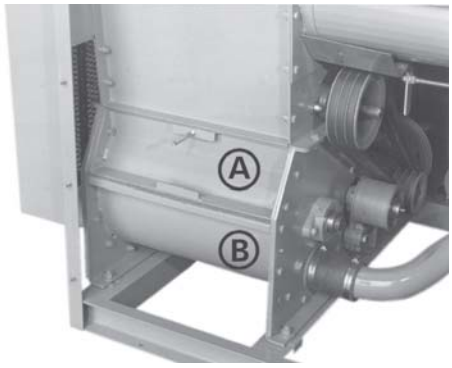
C. REMOVE NECESSARY GUARDS TO DO THE JOB AFTER POWER IS DISCONNECTED, BE SURE THAT ALL GUARDS ARE INSTALLED AND SECURE WHEN JOB IS COMPLETE.

D. ONCE THE DOOR ON THE FEEDER IS REMOVED, CHECK FOR EXCESSIVE WEAR ON THE FEEDER BARREL AND END PLATE SURFACES. NEW SEALS WILL NOT BE EFFECTIVE IN AN EXCESSIVELY WORN FEEDER. A THOROUGH INSPECTION WILL REQUIRE REMOVAL OF ALL SEALS BEFORE INSTALLING A NEW SET.

E. REPLACE EXCESSIVELY WORN OR DAMAGED FEEDER BARREL AND/OR END PLATES AND ROTOR SHAFT FELT SEALS FOR OPTIMUM PERFORMANCE FROM YOUR VOLU-MATIC III MACHINE. EXCESSIVELY WORN PARTS ARE CONSIDERED TO BE WHEN 25% OF METAL THICKNESS HAS WORN AWAY, SEE REPLACE THE FEEDER END PLATES.

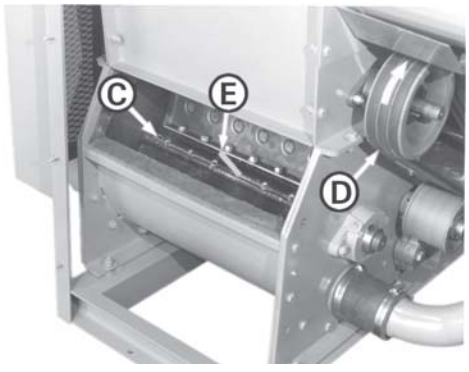
F. SUPPLIES AND TOOLS FOR SEAL CHANGE:
- **SET OF SEALS, PART NO. 35A02011**
- **SPARE 3/8"-16 x 1" LENGTH GRADE EIGHT BOLTS**
- **THREAD LOCKTITE**
- **SPRAY SILICON**
- **RATCHET AND 8" EXTENSION**
- **9/16" SOCKET AND WRENCH**
- **MEDIUM STANDARD SCREWDRIVER**
- **MISCELLANEOUS WRENCHES FOR GUARD REMOVAL**

1.



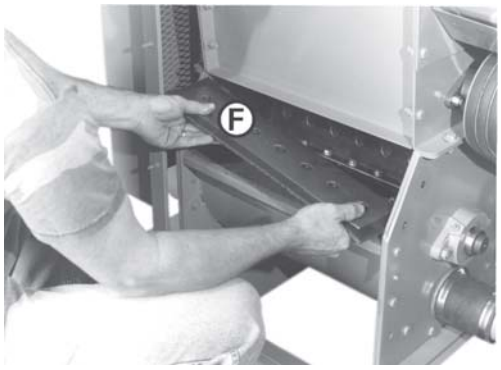
REMOVE THE SIDE ACCESS DOOR **A** FROM THE FEEDER ASSEMBLY **B** BY REMOVING THE FOUR BOLTS AND THEN PULL ON THE HANDLES.

2.



ROTATE ROTOR **C** BY HAND USING BELTS **D** THAT DRIVE THE SHREDDER HAMMERS IN THE SAME DIRECTION AS THE ARROW, THE TRANSMISSION HAS TO BE IN GEAR. ROTATE THE ROTOR SO THAT THE SEAL ENDS UP IN THE CENTER OF DOOR OPENING. REMOVE ALL ATTACH BOLTS, PUSH ONE SIDE OF SEAL FORWARD AND BRING THE OTHER SIDE OF THE SEAL OUT OF THE FEEDER HOUSING ON AN ANGLE. INSERT SEAL ALIGNMENT PIN **E** INTO THE CENTER HOLE OF BOLT HOLE PATTERN IN ROTOR.

3.

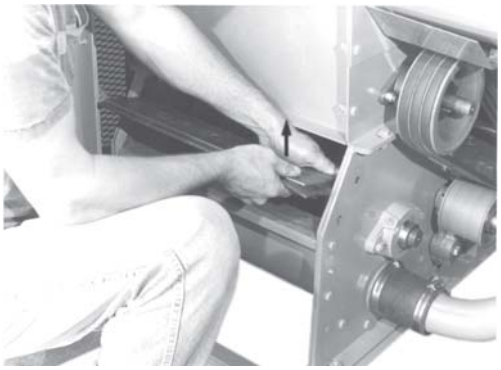


SPRAY SILICON ON SIDE EDGES OF FEEDER OPENING. MAKE SURE TO INSTALL EACH SEAL IN THE SAME DIRECTION AS REMOVED - ANGLE TOE OF ASSEMBLY FACING IN OPPOSITE DIRECTION OF ROTATION. PLACE NEW SEAL ASSEMBLY **F** AS SHOWN.

4.

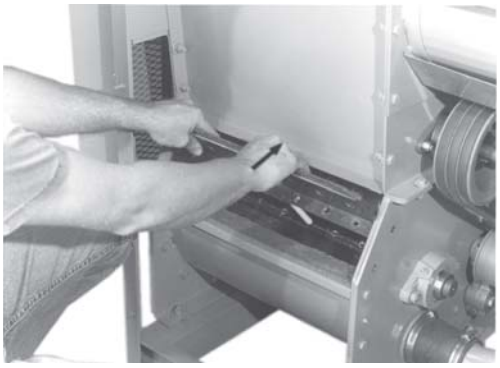
BEND RIGHT SIDE OF RUBBER TOWARD ANGLE TOE AND SHOVE SEAL TO RIGHT, BEND LEFT SIDE OF RUBBER TOWARD ANGLE TOE AS SHOWN BY HAND.

5.



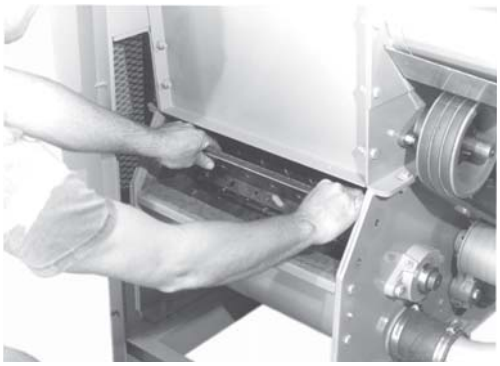
LIFT RIGHT SIDE OF SEAL ASSEMBLY UP AS SHOWN.

6.



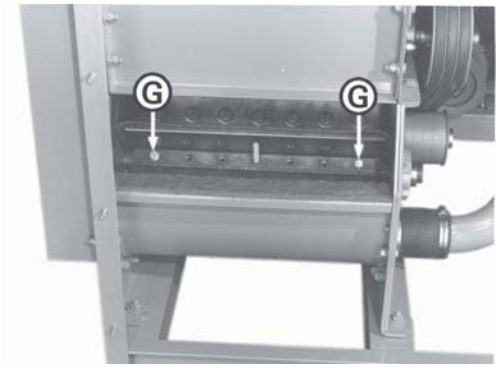
ROTATE FRONT FACE OF SEAL ASSEMBLY UP AS SHOWN.

7.



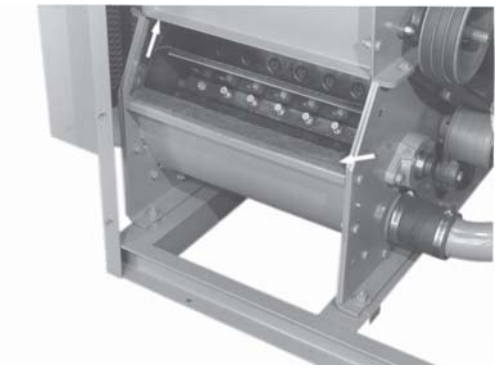
SLIDE SEAL ASSEMBLY INTO FEEDER HOUSING ALIGNING CENTER HOLE IN THE ANGLE TOE OF THE SEAL ASSEMBLY WITH THE ALIGNMENT PIN.

8.



ONCE THE SEAL ASSEMBLY HAS BEEN INSERTED ALL THE WAY TO THE ROTOR, ADD LOCKTITE TO THE THREADS OF THE ATTACH BOLTS **G**. INSERT ATTACH BOLTS WITH LOCK WASHERS IN END HOLES AND TIGHTEN.

9.



REMOVE ALIGNMENT PIN AND INSERT REMAINING BOLTS, APPLY THREAD LOCKTITE AND USE LOCK WASHERS. REPEAT STEPS TWO THROUGH NINE TO REPLACE ALL SEALS. INSPECT THAT FELT STRIPS (SEE ARROWS) WILL SEAL THE DOOR.

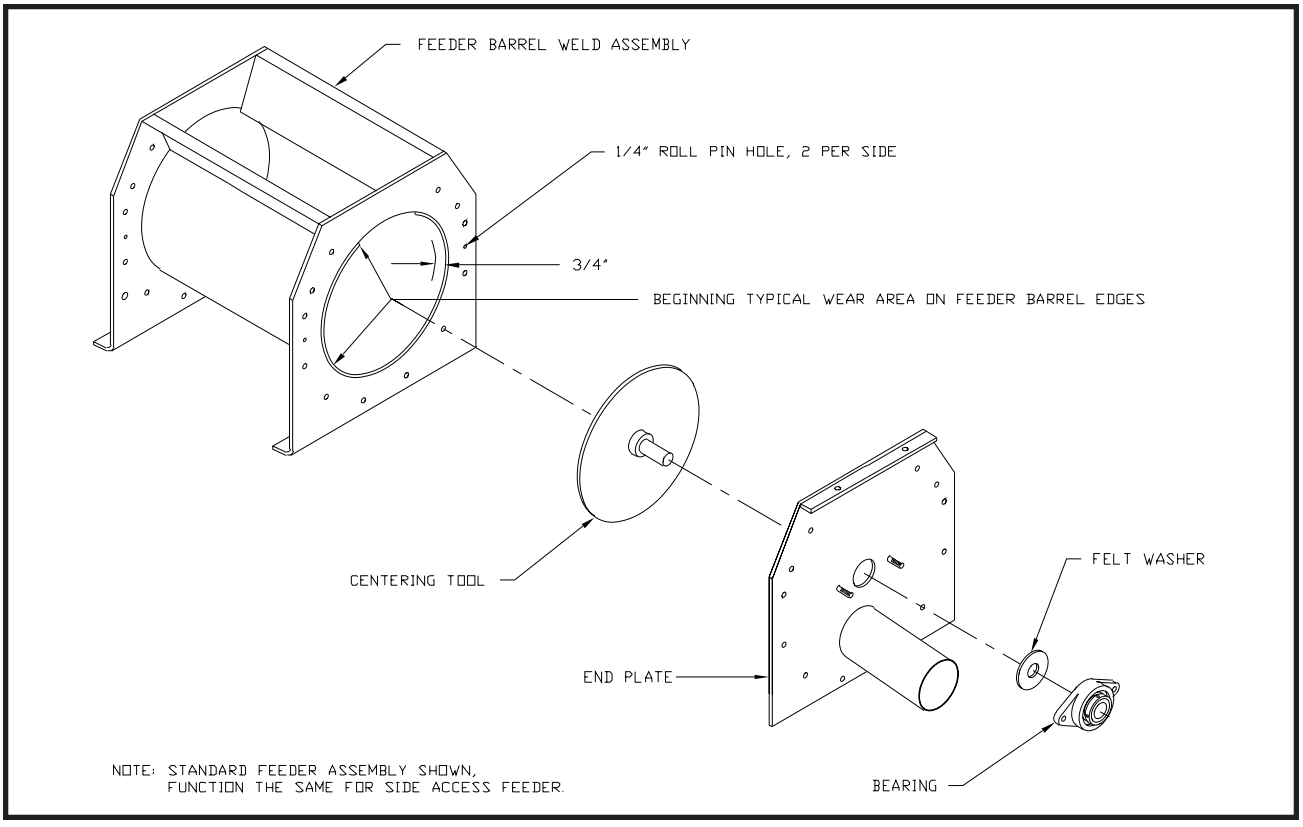
10.

ONCE ALL SEALS ARE REPLACED, INSERT DOOR AGAINST TOP STOP AS SHOWN. SHOVE BOTTOM OF DOOR DOWN TO SHELF AND THEN PUSH DOOR STRAIGHT IN TO ALIGN BOLT HOLES. BOLT DOOR SECURELY IN PLACE AND INSERT ALIGNMENT PIN INTO TOP HANDLE OF DOOR FOR FUTURE SEAL CHANGES, DISCARD OLD SEALS.

REPLACE THE VOLU-MATIC™ III FEEDER END PLATES AS FOLLOWS:

THE END PLATES SHOULD BE REPLACED WHEN EVIDENCE OF DAMAGE IS SEEN BY VISUAL INSPECTION WHILE CHANGING FEEDER SEALS OR PROBLEMS ARE EXPERIENCED WITH LOSE OF AIR PRESSURE AND BLOW-BY OCCURS. BLOW-BY IS A TERM USED WHEN MATERIAL SEEMS TO BLOW BACK INTO THE HOPPER AREA WHILE THE AUGER TRIES TO METER THE MATERIAL INTO THE SHREDDER AREA. THE FELT WASHER THAT SEALS THE BEARING FROM THE AIR STREAM COULD ALSO CONTRIBUTE TO BLOW-BY AND SHOULD BE REPLACED AS REQUIRED.

WHEN REPLACING THE FEEDER END PLATES, THE CLEARANCE HOLE FOR THE ROTOR SHAFT HAS TO BE CENTERED TO THE I. D. OF THE FEEDER BARREL FOR AN EFFECTIVE SEAL ASSEMBLY. THE CENTERING TOOL HAS A BOSS THE SAME DIAMETER AS THE END PLATE HOLE AND IS 1" IN LENGTH SO THAT THE CENTERING TOOL MAY BE PUSHED INTO THE FEEDER BARREL FOR PROPER CENTERING AS THE EDGES BEGIN TO WEAR. THE 3/4" DIMENSION SHOWN IN THE FOLLOWING DRAWING IS THE MAXIMUM ALLOWABLE DEPTH THE TOOL CAN MOVE AND STILL ENGAGE THE FULL WIDTH OF THE END PLATE, ANY MOVEMENT PAST THIS POINT IS AN INDICATION THAT THE FEEDER BARREL WELD ASSEMBLY SHOULD BE REPLACED. ALSO, THE WELD ASSEMBLY SHOULD BE REPLACED WHEN 25% OF METAL THICKNESS HAS WORN AWAY AT THE EDGES. NEW FEEDER SEALS WILL NOT EFFECTIVELY SEAL THIS AREA AND WILL CAUSE PREMATURE SEAL AND END PLATE WEAR, EDGE WEAR IS A GOOD INDICATION THAT THE RUBBER FEEDER SEALS ARE NOT BEING CHANGED ON SCHEDULE, WERE DAMAGED DURING OPERATION, OR AN ABRASIVE MATERIAL REQUIRES THAT THE SEALS BE CHANGED SOONER.



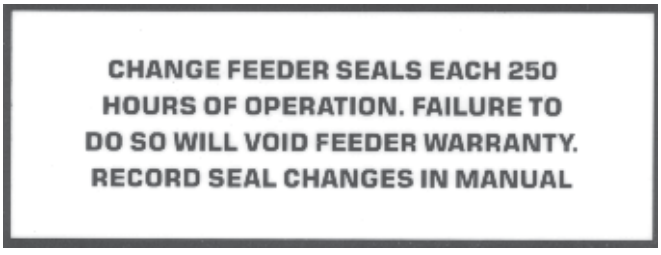
REFER TO THE DRAWING AND FOLLOWING INSTRUCTIONS ON REPLACEMENT OF THE FEEDER END PLATES AND/OR FEEDER BARREL WELD ASSEMBLY.

1. REMOVE THE FEEDER DRIVE COMPONENTS.
2. LOOSEN SET SCREWS IN BEARING COLLARS, REMOVE WORN END PLATE, AND REMOVE BEARING HOUSING AND FELT WASHER FROM WORN END PLATE.
3. PULL ROTOR ASSEMBLY OUT OF BARREL WELD ASSEMBLY.
4. INSERT BOSS ON CENTERING TOOL INTO NEW END PLATE CLEARANCE HOLE, PLACE CENTERING TOOL WITH END PLATE INTO FEEDER BARREL, ADJUST CENTERING TOOL IN TO A FIRM FIT WITH BARREL I. D. (KEEP CENTERING TOOL PARALLEL), ALIGN BOLT HOLES AND TOP SURFACE LEVEL, CLAMP INTO POSITION AND DRILL 1/4" HOLE INTO END PLATE FROM EXISTING HOLE IN THE YOKE OF THE FEEDER BARREL WELD ASSEMBLY (NEW HOLES MAY BE LOCATED, DO NOT LOCATE TO FAR FROM PREVIOUSLY DRILLED HOLES).
5. REMOVE CENTERING TOOL, PLACE END PLATE OVER CENTERING TOOL, ADD FELT WASHER AND BEARING HOUSING AND TIGHTEN BEARING USING WASHER AND NYLOCK NUTS.
7. REMOVE CENTERING TOOL FROM END PLATE.
8. INSTALL ROTOR AND NEW RUBBER FEEDER SEALS FOLLOWING INSTRUCTIONS OUTLINED FOR THEIR ASSEMBLY.
9. BOLT THE END PLATE IN POSITION, A STANDARD ROTOR ASSEMBLY WILL HAVE TO BE ROTATED TO CENTER PROPERLY WHILE BOLTING THE END PLATE IN POSITION.

TO REPLACE THE FEEDER ASSEMBLY COMPLETE:

1. REMOVE THE FEEDER CHAIN DRIVE COMPONENTS INCLUDING THE CHAIN IDLER ASSEMBLY.
2. REMOVE BOLTS THAT ATTACH THE FEEDER TO THE SHREDDER HOUSING AND MACHINE FRAME, SLIDE SPACERS OUT FROM UNDER THE FEEDER.
3. DISCONNECT THE AIR STREAM CONNECTION HOSE.
4. REMOVE THE DRIVE BELTS TO THE SHREDDER HAMMER SHAFT AND REMOVE THE SHREDDER BELT IDLER ASSEMBLY.
5. SLIDE FEEDER OUT FROM MACHINE FRAME, HAMMER SHAFT WILL HAVE TO BE ROTATED TO CLEAR HAMMERS WHEN PULLING FROM MACHINE FRAME.

THE FOLLOWING LABEL IS DISPLAYED ON THE FEEDER OF NEW DELIVERED MACHINES AS A REMINDER TO CHANGE SEALS, THE HOUR METER IN THE TACHOMETER RECORDS MECHANISM RUN TIME SO THAT SEALS CAN BE CHANGED ON A TIMELY SCHEDULE.



INDUSTRIAL ENGINE

CHECK THE ENGINE OIL LEVEL DAILY BEFORE START UP. FOLLOW MANUFACTURER'S RECOMMENDED MAINTENANCE SCHEDULE AS SPECIFIED IN THE ENCLOSED MANUAL PROVIDED IN THE MANUFACTURER'S LITERATURE SECTION. KEEP THE ENGINE CLEAN, ESPECIALLY ELEMENT TYPE AIR FILTERS AND THE AIR INLET COOLING SYSTEM.

CHECK THAT BATTERY CONNECTIONS ARE TIGHT AND THAT CABLE LEADS ARE TIGHT. IF THE BATTERY IS NOT MAINTENANCE FREE, CHECK THE WATER LEVEL WEEKLY. MAKE SURE AND USE DISTILLED WATER WHEN REPLENISHING A NON-MAINTENANCE FREE BATTERY. CHECK THAT ALL EXHAUST CONNECTIONS ARE TIGHT AND THAT NO LEAKS ARE PRESENT IN THE PIPES OR MUFFLER, REPLACE AS REQUIRED.

OGURA ELECTRO-MAGNETIC CLUTCH

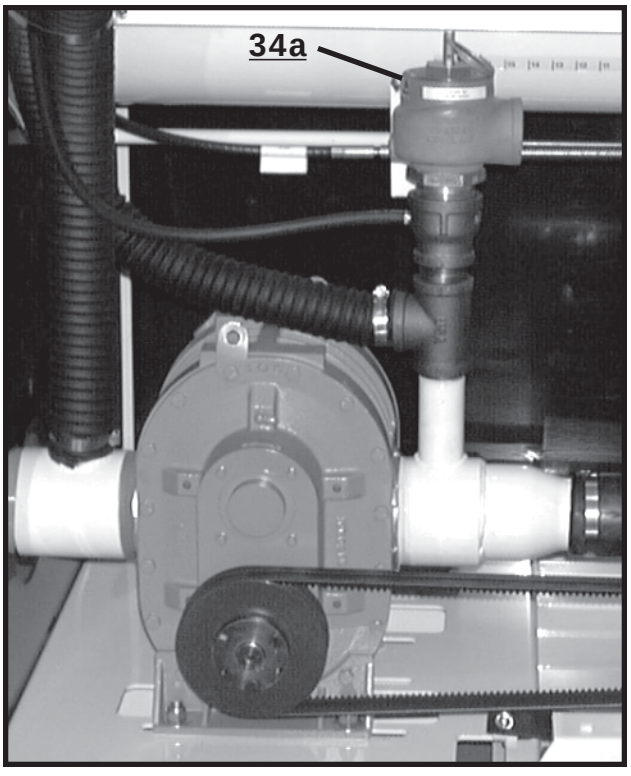
THIS CLUTCH HAS NO SCHEDULED WEAR REPLACEMENT PARTS AND CAN ONLY BE REPLACED WHENEVER FIELD FAILURES MAY OCCUR. EXTENSIVE TESTING WAS PERFORMED AT THE FACTORY AND UNISUL FEELS IT HAS FOUND A VERY SUITABLE CLUTCH THAT WILL PROVIDE A LONG SERVICE LIFE.

CLUTCH TORQUE ARM

CHECK THE CONDITION OF THE TORQUE ARM ASSEMBLY THAT RETAINS THE CLUTCH FIELD ASSEMBLY FROM ROTATING. LOOK FOR ELOGATED HOLES IN THE ARM, WORN BOLTS, AND WORN BUSHINGS.

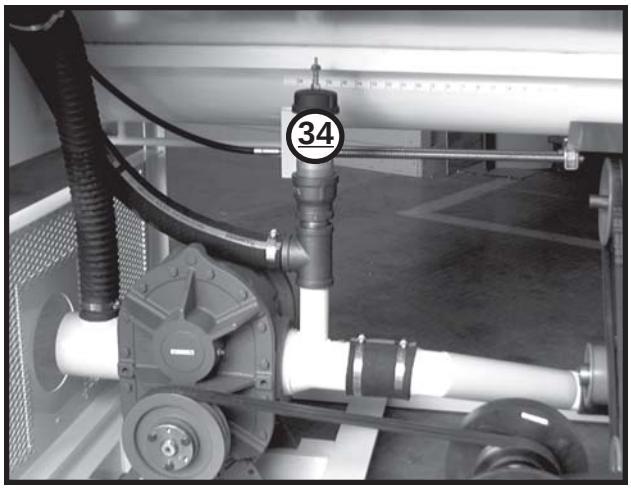
BLOWER RELIEF VALVE

THE RELIEF VALVE **34a** C.M.W. NOW USES IS A CONSTANT PRESSURE STYLE MEANING THE PRESSURE WILL REMAIN AT A MINIMUM OF 6 PSI WHEN POPPING OPEN BECAUSE OF HIGH EXCESSIVE PRESSURES. HIGH EXCESS PRESSURES ARE GENERALLY CAUSED BY PLUGGED OR KINKED HOSES. FOLLOW THE SAME PROCEDURE ON THE NEXT PAGE FOR THE OLD VALVE CHECKING THE FUNCTION OF THE NEW STYLE VALVE.

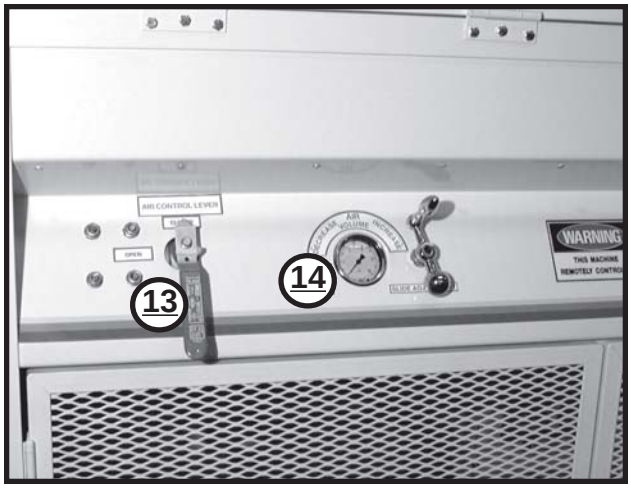


BLOWER RELIEF VALVE

ONCE WEEKLY, PLUG FEEDER OUTLET OR END OF MATERIAL HOSE WITH BLOWER ONLY RUNNING. THE SPRING LOADED RELIEF VALVE **34** SHOULD OPEN. CYCLE VALVE SEVERAL TIMES BY PLUGGING AND UNPLUGGING FEEDER OUTLET OR HOSE TO CLEAR THE VALVE OF ANY BUILD UP OF DIRT OR MATERIAL. BE SURE THE AIR BLEED CONTROL VALVE **13** IS FULLY CLOSED. NOTE PRESSURE READING ON THE AIR GAUGE **14** AT THE MOMENT THE SPRING LOADED VALVE RELIEVES. THE INDICATION SHOULD BE 6 PSI. THE PRESSURE READING WILL DROP THE MOMENT THE SPRING LOADED VALVE POPS WHILE THE BLOWER IS STILL RUNNING BECAUSE THE VALVE IS DESIGNED TO DUMP FULL BLOWER AIR CAPACITY. ANY SIGNIFICANT DIFFERENCE OVER 1.0 PSI SHOULD BE REPORTED TO THE FACTORY. NEVER ATTEMPT TO READJUST THE SPRING LOADED RELIEF VALVE WITHOUT CONSULTING THE FACTORY.

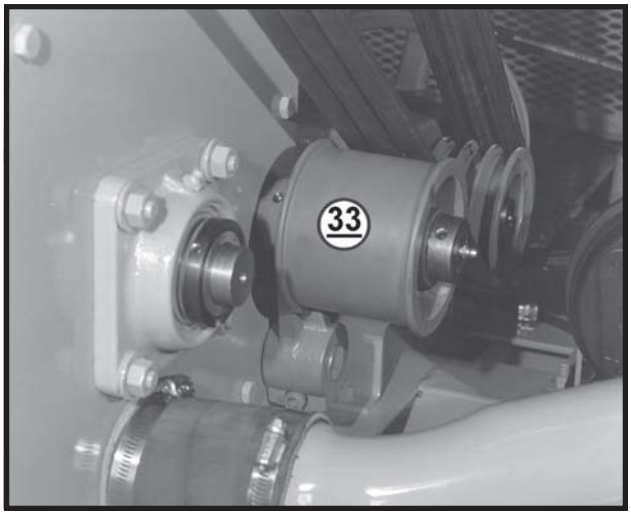


CAUTION: DO NOT GREASE OR OIL SINCE THE RELIEF VALVE WILL NOT FUNCTION OTHER THAN COMPLETELY DRY.



SHREDDER BELT IDLER

ONCE WEEKLY, GREASE SHREDDER BELT FLAT FACE IDLER **33**. THIS IS A NEEDLE BEARING ASSEMBLY WITH NO SEAL. ONE PUMP FROM A HAND OPERATED GREASE GUN IS SUFFICIENT. C.M.W. USES AN ALUMINUM COMPLEX BASED ALL PURPOSE GREASE. WIPE OFF EXCESS GREASE TO KEEP BELTS CLEAN. ALSO, DO NOT OVER TENSION THE BELTS. YOU WILL PRE LOAD THE SHREDDER SHAFT CAUSING PREMATURE BEARING FAILURE AND/OR CAUSE SHAFT BREAKAGE.



RIGHT ANGLE GEARBOX

CHECK THE OIL LEVEL WEEKLY IN THE GEARBOXES. THE GEARBOXES ARE FILLED WITH **SYNTHETIC GEAR OIL 80W140**. THE PROPER OIL LEVEL IS AT THE PLUG HALFWAY UP THE REAR OF THE HOUSING. AFTER 500 HOURS OF OPERATION, DRAIN WHILE WARM. THOROUGHLY FLUSH HOUSING WITH LIGHT FLUSHING OIL AND REFILL WITH FRESH LUBRICANT. THEREAFTER, CHANGE AND FLUSH EVERY TWO YEARS OR 4000 HOURS MACHINE TIME.

TRANSMISSION

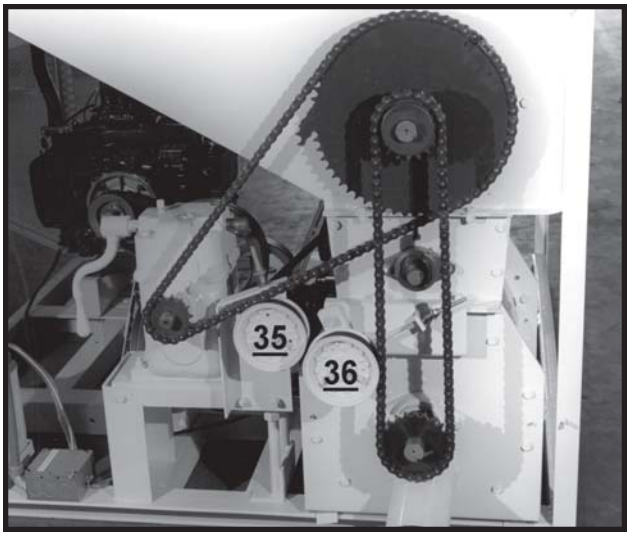
CHECK THE OIL LEVEL WEEKLY IN THE TRANSMISSION. **AS OF JANUARY 1999, C.M.W. USES MOBIL GEAR OIL 626 IN THE TRANSMISSION.** PRIOR TO THIS DATE THE TRANSMISSION WAS FILLED WITH MOBIL H.D. 85W-140 GEAR OIL. THE PROPER OIL LEVEL IS MARKED AT THE FRONT OF THE HOUSING. AFTER 100 HOURS OF OPERATION, DRAIN WHILE WARM. THOROUGHLY FLUSH HOUSING WITH LIGHT FLUSHING OIL AND REFILL WITH FRESH LUBRICANT. THEREAFTER, CHANGE AND FLUSH EVERY SIX MONTHS OR 1000 HOURS MACHINE TIME.

BLOWER

CHECK THE OIL LEVEL WEEKLY IN THE BLOWER. FOLLOW MANUFACTURER'S RECOMMENDED MAINTENANCE SCHEDULE AS SPECIFIED IN THE ENCLOSED BLOWER MANUAL PROVIDED IN THE MANUFACTURER'S LITERATURE SECTION. C.M.W. FILLS TUTHILL BLOWERS WITH SAE30 AND ALL OTHER MAKES WITH WITH 15W-40 MOTOR OIL. THE BEARINGS ON THE DRIVE END SHOULD BE GREASE LUBRICATED EVERY TWO TO THREE MONTHS.

ROLLER CHAIN IDLER ASSEMBLY

SPRAY A LIGHT MISTING OIL ON ALL MECHANISMS THAT MAKE UP THE AUGER DRIVE CHAIN IDLER ASSEMBLY **35** AND AIRLOCK FEEDER DRIVE CHAIN IDLER ASSEMBLY **36**. FOR ANY REASSEMBLY THAT MAY OCCUR, MAKE SURE THAT THE IDLER ARM SWIVELS FREELY WITHOUT WOBBLE AND THAT THE SPRING IS COMPRESSED TO A 1" LENGTH BETWEEN THE TWO CONTROL WASHERS. THE SPRING LENGTH IS 2 ½ INCHES NON-COMPRESSED.



ROLLER CHAIN

IF ABRASIVE MATERIALS ARE CONVEYED THROUGH THE MACHINE, DO NOT LUBRICATE THE CHAIN. THIS CAN CAUSE THE CHAIN TO COLLECT MATERIAL AND WEAR THE CHAIN AND SPROCKETS PREMATURELY. A CHAIN LUB IS PREFERABLE IF NO ABRASIVE MATERIALS ARE CONVEYED THROUGH THE MACHINE.

FLANGED BEARINGS

BEARINGS SHOULD BE LUBRICATED EVERY 6 MONTHS OR 1000 HOURS OF OPERATION IF EQUIPPED WITH A GREASE FITTING. BEARINGS WITHOUT FITTINGS ARE CONSIDERED TO BE LUBRICATED FOR LIFE. DO NOT OVER LUBRICATE, ONE PUMP FROM A HAND OPERATED GUN IS SUFFICIENT.

BELTS

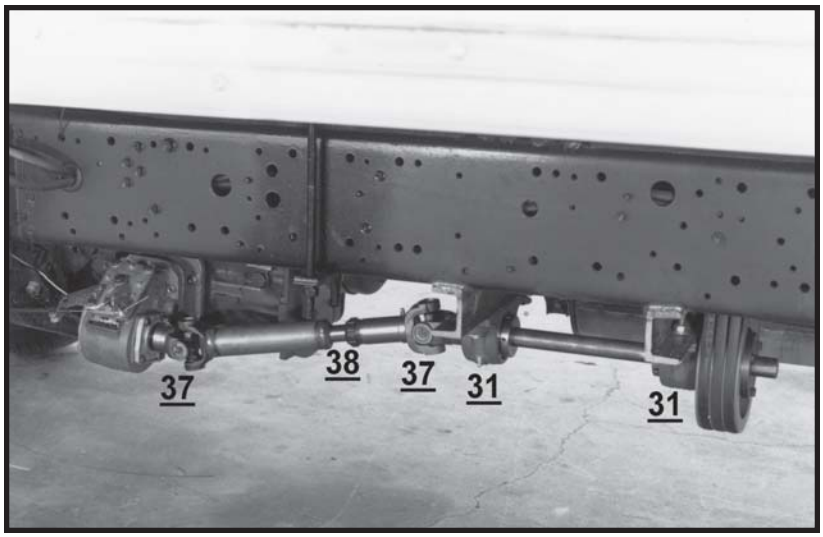
DO NOT USE BELT DRESSING. BELT DRESSING WILL COLLECT MATERIAL AND CAUSE THE BELTS TO SLIP AND /OR WEAR FASTER. THERE IS NO SUBSTITUTE FOR KEEPING BELTS DRY, FREE OF OIL AND GREASE, AND TIGHT. REPLACE WORN AND DETERIORATED BELTS AS REQUIRED.

PTO DRIVE SYSTEM

THE PTO DRIVE PILLOW BLOCK BEARINGS **31** SHOULD BE GREASED ONCE A WEEK OR EVERY 30 HOURS OF OPERATION. DO NOT OVER LUBRICATE, ONE TO TWO PUMPS FROM A HAND OPERATED GREASE GUN IS SUFFICIENT. C.M.W. USES LITHIUM BASED HIGH TEMPERATURE GREASE. SEE MANUFACTURER'S LITERATURE ON SPHERICAL ROLLER BEARINGS IN THE MANUFACTURER'S LITERATURE SECTION.

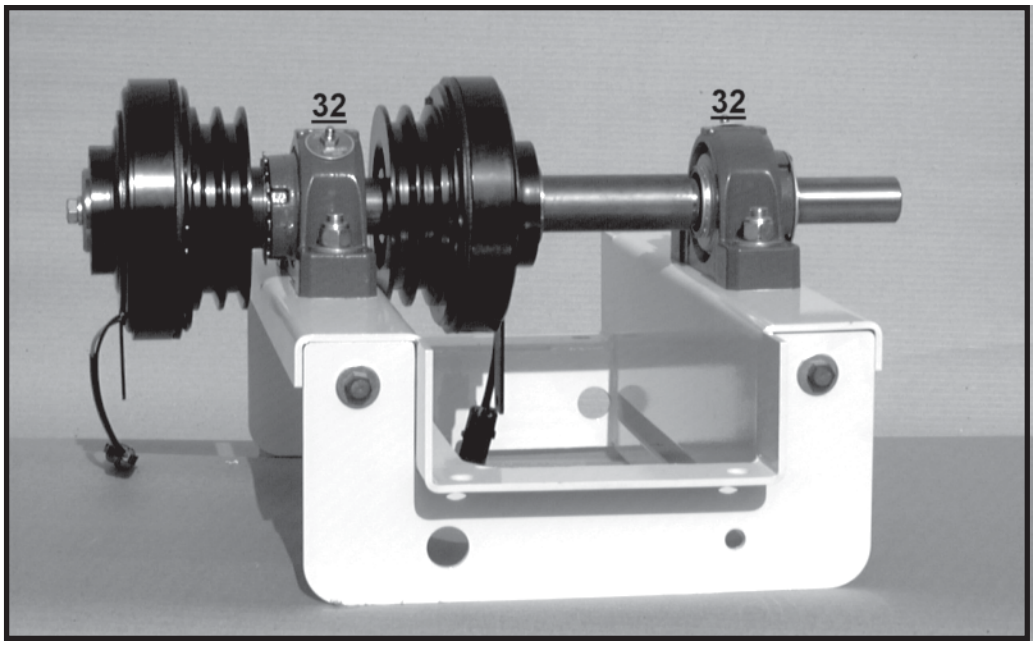
THE UNIVERSAL CROSSES **37** SHOULD BE GREASED ONCE A MONTH. DO NOT OVER LUBRICATE, ONE PUMP FROM A HAND OPERATED GREASE GUN IS SUFFICIENT. C.M.W. USES AN ALUMINUM COMPLEX BASED ALL PURPOSE GREASE. THE SLIP YOKE **38** SHOULD BE GREASED ONCE A YEAR.

INTERNAL BEARINGS IN THE BELT IDLER PULLEY ASSEMBLIES ARE SEALED FOR LIFE AND CAN ONLY BE REPLACED. A MACHINE SHOP WITH A BEARING PRESS MAY BE NECESSARY. DO NOT OVER TIGHTEN THE PTO DRIVE BELTS AS THIS MAY CAUSE PREMATURE BEARING FAILURE.



PTO MODEL INPUT/CLUTCH SHAFT

THE INPUT/CLUTCH SHAFT PILLOW BLOCK BEARINGS **32** SHOULD BE GREASED ONCE A WEEK OR EVERY 30 HOURS OF OPERATION. DO NOT OVER LUBRICATE, ONE TO TWO PUMPS FROM A HAND OPERATED GREASE GUN IS SUFFICIENT. C.M.W. USES LITHIUM BASED HIGH TEMPERATURE GREASE. SEE MANUFACTURER'S LITERATURE ON SPHERICAL ROLLER BEARINGS IN THE MANUFACTURER'S LITERATURE SECTION.



USE THE FOLLOWING STEPS FOR ALIGNING THE INPUT/CLUTCH SHAFT OR REPLACING COMPONENT PARTS ON THIS SHAFT. THE FOLLOWING INSTRUCTIONS ARE FOR THE TAPER LOCK IMPERIAL BEARINGS THAT C.M.W. ONCE USED FOR THE INPUT/CLUTCH SHAFT DESIGN. THE TAPER LOCK BEARINGS ARE STILL USED FOR THE PTO OUTPUT SHAFT UNDER THE TRUCK. REFER TO PAGES **48** TO **49** FOR INSTRUCTIONS ON THE DOUBLE SET SCREW COLLAR "K" STYLE TAPER ROLLER BEARINGS THAT C.M.W. NOW USES.

I. Refer to the following instructions and drawings for aligning the input/clutch shaft or replacing component parts on the shaft. The input/clutch shaft is installed at the factory with "never-seize" compound applied to mating surfaces except under the bearings and the mechanism clutch. The mechanism clutch is pressed onto the shaft. Unisul's experience with these bearings shows that lubricant is not required under the bearing.

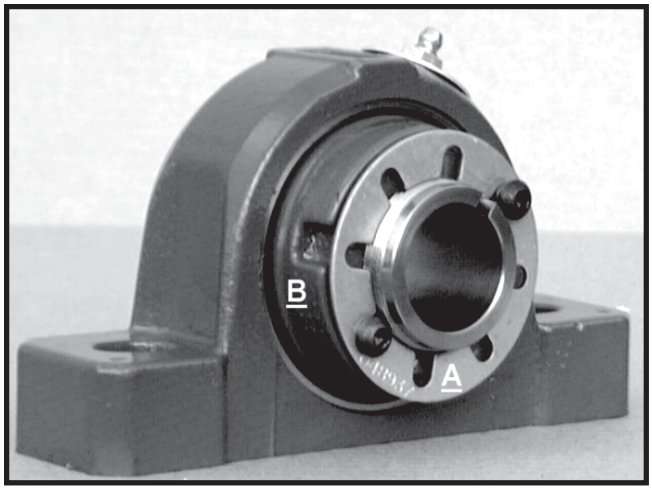
II. Make sure you have all parts necessary for a complete clutch or bearing change on blower or mechanism side or both sides.

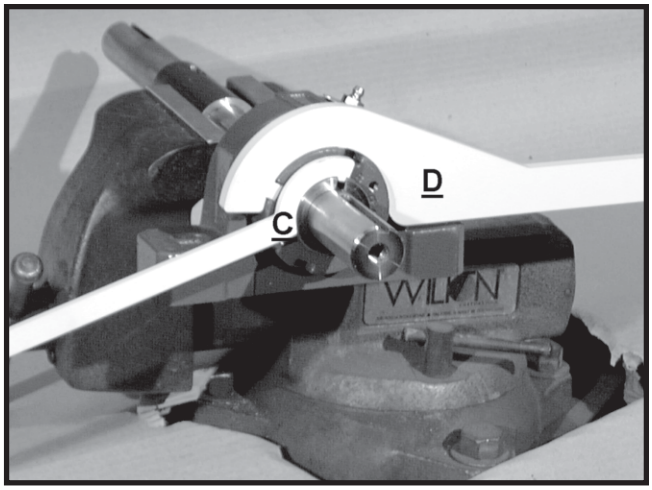
III. Make sure all power is disconnected; negative cable to battery, master switch off, and remote cord unplugged.

IV. Remove necessary guards to do the job after power is disconnected. Make sure that all guards are installed and secure when the job is complete.

V. Before assembly can begin, the taper lock bearings require a “zero reference point”. The zero reference point is defined as the point when clearance between adapter sleeve, shaft, and bearing bore has been removed and all surfaces are in tight metal to metal contact. To effect this, remove lockplate **A** and turn locknut **B** counterclockwise one to two turns allowing the adapter to fully expand. Slide either bearing on the appropriate side of the shaft to set the zero reference point. Support shaft in a bench vise or similar device to keep weight off the bearing. To reach the “Zero Reference Point”, hold adapter sleeve with spanner wrench **C** and turn locknut with spanner wrench **D** until a snug fit is established between adapter sleeve and shaft. Slide bearing back and forth on shaft checking for drag, if the bearing moves freely tighten locknut until you feel drag on the bearing. Do not tighten any further at this point, tightening of bearing will be completed during assembly. At this point, remove bearing from shaft for complete parts assembly.

NOTE: Read instructions provided by bearing manufacturer to gain a better understanding of the taper lock bearings.





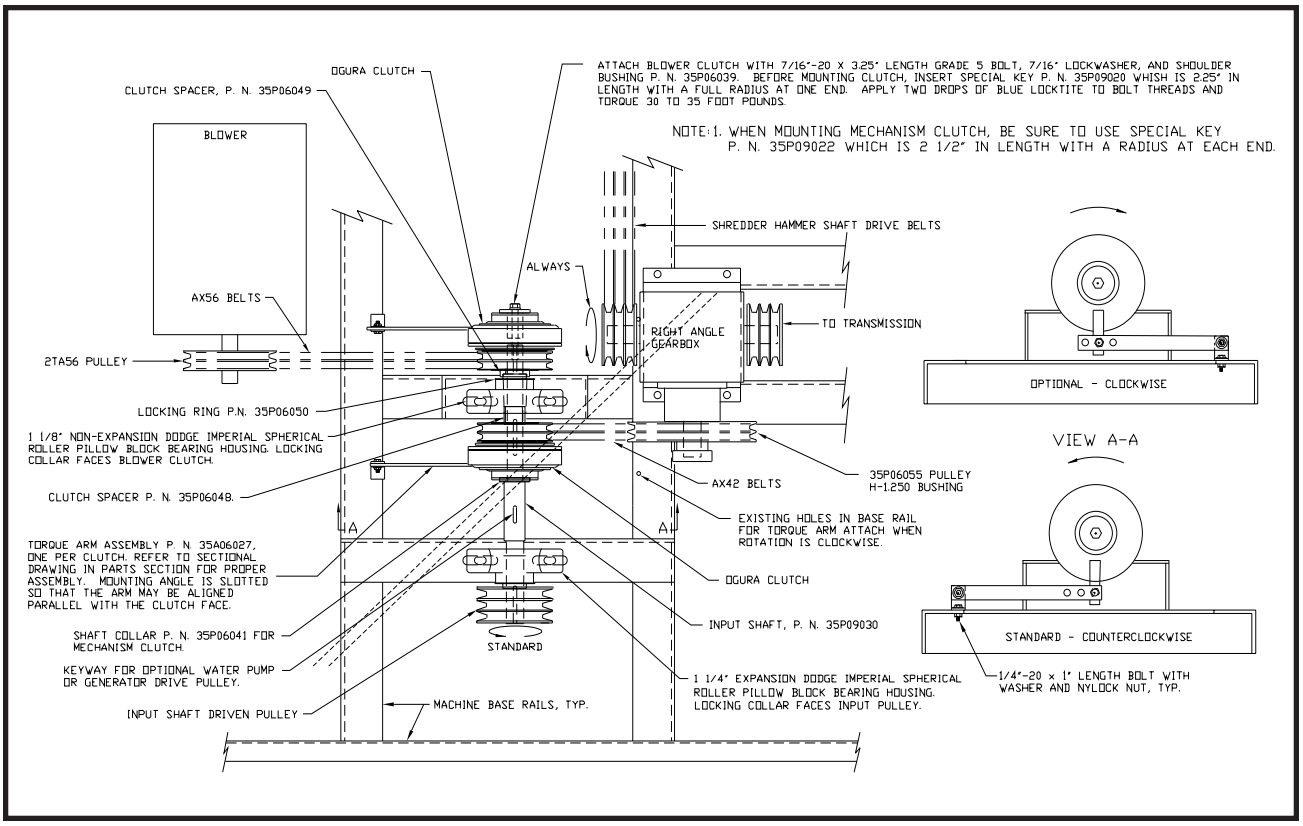
1. SLIDE SHAFT COLLAR 35P06041 UP TO SHOULDER IN MIDDLE OF INPUT/CLUTCH SHAFT.

2. INSERT MECHANISM CLUTCH DRIVE KEY 35P09022 INTO KEYWAY IN SHAFT. THE KEY MAY HAVE TO BE PRESSED IN.

3. MOUNT MECHANISM CLUTCH ON SHAFT, THE SHAFT IS KNURLED OVER THE KEYWAY. THE CLUTCH WILL HAVE TO BE PRESSED ON. DO NOT REST ON CLUTCH PULLEY TO PRESS SHAFT. YOU WILL DESTROY THE BEARING UNDER THE PULLEY. PRESS AGAINST CLUTCH HUB ONLY. PRESS CLUTCH UNTIL SHAFT COLLAR DOES NOT ROTATE AND THEN STOP.

4. SLIDE MECHANISM CLUTCH SPACER 35P06048 WITH KEYWAY ONTO SHAFT UP TO CLUTCH.

5. MOUNT 1 1/8” NON-EXPANSION PILLOWBLOCK BEARING ON SHAFT TOWARD REAR OF MACHINE. HAVE LOCKNUT FACING OUT AND BACK OF BEARING RACE FLUSH TO CLUTCH SPACER. DO NOT USE THE LOCKPLATE SUPPLIED WITH THE BEARING.



6. SLIDE LOCKING RING 35P06050 OVER BEARING ADAPTER SLEEVE.

7. SLIDE BLOWER CLUTCH SPACER 35P06049 WITH KEYWAY ONTO SHAFT UP TO 1 1/8" NON-EXPANSION PILLOWBLOCK BEARING. THE RECESSED BORE FITS OVER THE ADAPTER SLEEVE IN THE BEARING HOUSING.

8. MOUNT BLOWER CLUTCH FLUSH TO CLUTCH SPACER, THE PULLEY WILL FACE THE BEARING. THE KEY IS ROUNDED AT ONE END AND WILL EXTEND PAST THE SHAFT. USE SHOULDER BUSHING 35P06039 AND 7/16" BOLT WITH LOCK WASHER TO SEAT THE CLUTCH, TIGHTEN BOLT 30 FT./LBS.

9. TIGHTEN LOCKNUT IN BEARING HOUSING 3/4 TO 7/8 TURN USING SPANNER WRENCH. **NOTE:** AN ADDITIONAL 1/8 WAS ADDED TO TURN FOR "ZERO REFERENCE POINT" BEGINNING.

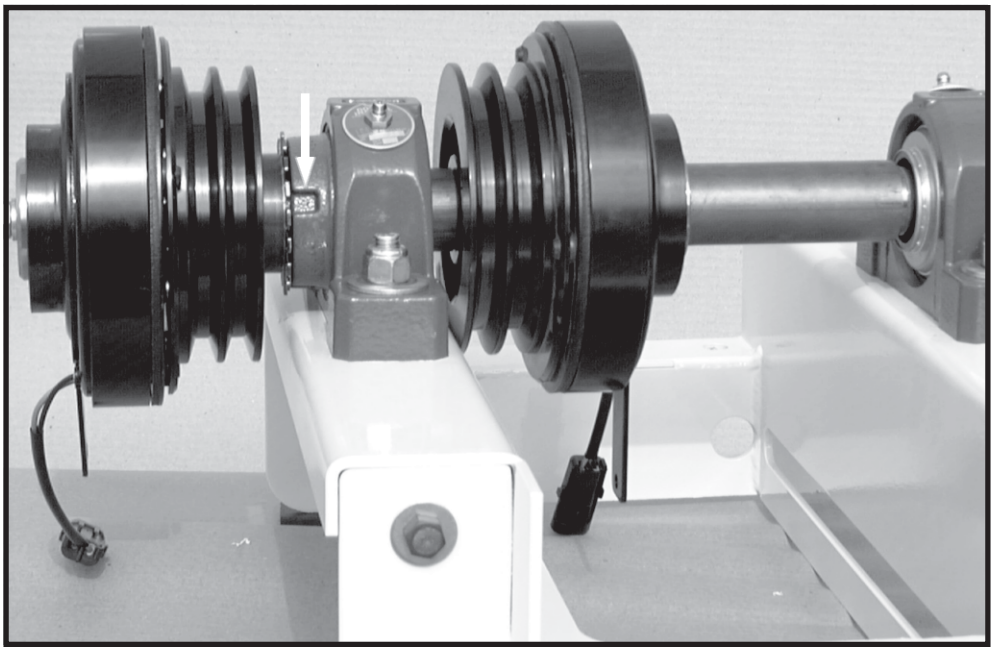
   NOTE: IF THE SHAFT SPINS AS YOU LOCK DOWN THE BEARING, A PIPE WRENCH OR SIMILAR DEVICE MAY NEED TO BE USED TO HOLD THE SHAFT. PLACE PIPE WRENCH NEAR 1" LENGTH KEYWAY BUT NOT OVER THE KEYWAY TO HOLD SHAFT.

10. ALIGN ONE OF THE TABS IN THE LOCKING RING 35P06050 WITH THE RECESS IN THE LOCKNUT AND BEND OVER USING A SCREW DRIVER OR SIMILAR DEVICE (SEE ARROW NEXT PICTURE). BEND ANOTHER TAB 180 DEGREES FROM PREVIOUS ONE INTO RECESS OF LOCKNUT.

11. ADD PULLEY FOR WATER PUMP OR GENERATOR DRIVE.

12. MOUNT 1 1/4" EXPANSION PILLOWBLOCK BEARING ON SHAFT TOWARD FRONT OF MACHINE. MAKE SURE LOCKNUT FACES OUT.

13. PLACE TWO AX42 BELTS OVER SHAFT. (not shown in picture)



14. PLACE MOUNTED SHAFT ON MACHINE. LINE UP PILLOWBLOCK BEARINGS WITH SLOTS IN BEARING STANDS ON MACHINE FRAME AND INSERT BELT TAKE UP. RUN NUT DOWN THREADS TO HOLD IN PLACE BUT DO NOT TIGHTEN COMPLETELY.
15. SLIDE BEARING RACE OF 1 ¼" EXPANSION PILLOWBLOCK BEARING ALL THE WAY TOWARD THE 1 1/8" NON-EXPANSION PILLOWBLOCK BEARING. MAKE SURE "ZERO REFERENCE POINT" IS ESTABLISHED. TIGHTEN LOCKNUT IN BEARING HOUSING USING SPANNER WRENCHES 3/4 TO 7/8 TURN. THIS WILL DRAW THE BEARING TO THE CENTER OF THE HOUSING.
16. SLIDE LOCKPLATE OVER SHAFT AND ALIGN TANG OF LOCKPLATE WITH SLOT IN ADAPTER SLEEVE. FIND A LOCKNUT HOLE THAT ALIGNS WITH A LOCKPLATE SLOT. IF THE CLOSEST LOCKNUT HOLE IS BEYOND A LOCKPLATE SLOT, TIGHTEN THE LOCKNUT TO ALIGN TO A SLOT. INSERT BUTTON HEAD SCREWS WITH LOCK WASHER AND TIGHTEN.
17. INSTALL PULLEY ON BLOWER SHAFT AND GEARBOX SHAFT. TAKE UP SLACK IN AX42 BELTS GOING TO GEARBOX. WHEN TIGHTENING, KEEP THE CLUTCH PULLEYS ALIGN STRAIGHT TO THE PULLEYS ON THE BLOWER AND GEARBOX.
18. INSTALL TORQUE ARM ASSEMBLIES AS SHOWN IN THE DRAWING, REFER TO THE SECTIONAL DRAWING ON NEXT PAGE FOR PROPER ASSEMBLY AND CLUTCH ATTACHMENT. THE HOLE IN THE MACHINE BASE FRAME FOR THE ATTACH ANGLE MIGHT HAVE TO BE RELOCATED ON EARLY MACHINES. DRILL 1/4" HOLE ONE INCH FROM EXISTING HOLE SO THAT THE TORQUE ARM MAY BE ALIGNED PARALLEL TO THE CLUTCH FACE.
19. TAKE UP SLACK IN AX56 BELTS GOING TO BLOWER.
20. MOUNT INPUT PULLEY ON SHAFT, THE REAR FACE OF THE PULLEY SHOULD BE FLUSH WITH FRONT FACE OF THE BEARING LOCKNUT.
21. MOUNT PTO DRIVE BELTS AND TENSION WITH IDLER ASSEMBLY.
22. REFER TO THE ELECTRICAL SCHEMATIC TO CORRECTLY WIRE THE CLUTCHES.
23. MOUNT MAIN DRIVE BELT GUARD, CHECK CLEARANCES, ETC.
24. TEST MACHINE BEFORE HEADING TO NEXT JOB SITE.

USE THE FOLLOWING STEPS FOR ALIGNING THE INPUT/CLUTCH SHAFT OR REPLACING COMPONENT PARTS ON THIS SHAFT. THE FOLLOWING INSTRUCTIONS ARE FOR THE DOUBLE SET SCREW COLLAR "K" STYLE TAPER ROLLER BEARINGS THAT C.M.W. NOW USES.

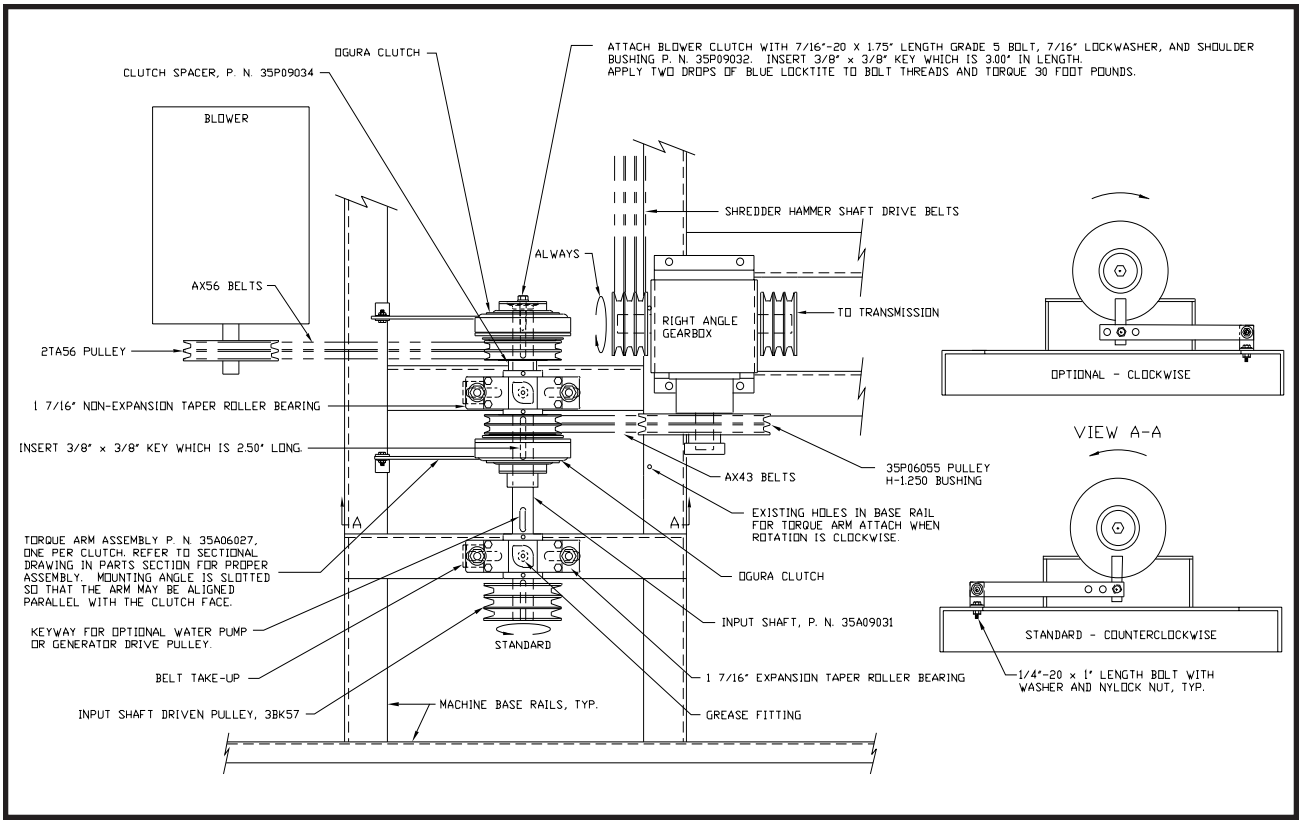
I. Refer to the following instructions and drawing for aligning the clutch shaft or replacing component parts on the shaft. The clutch shaft is installed at the factory with “never-seize” compound applied to mating surfaces.

II. Make sure set screws in bearing locking collars have a lock patch on the threads. Use a minimum half inch length set screws. The bearing housings have two locking collars.

III. Make sure you have all parts necessary for a complete change.

IV. Make sure all power is disconnected; negative cable to battery, master switch off, and remote cord unplugged.

V. Remove necessary guards to do the job after power is disconnected. Make sure all guards are installed and secure when the job is complete.



1. Insert 3/8” x 3/8” key that is 2 1/2” in length at center of shaft.
2. Slide mechanism clutch onto shaft up to collar welded on shaft. The pulley will face away from the shaft collar.
3. *Loosen the four bolts at the top of the bearing housing* one half turn and slide 1 7/16” non-expansion bearing housing on shaft toward rear of machine. ***Do not tighten set screws in locking collars yet!***
4. Slide blower clutch spacer onto shaft up to non-expansion bearing.
5. Insert 3/8” x 3/8” key that is 3” in length at end of shaft.
6. Mount blower clutch flush to clutch spacer, the pulley will face the bearing.
7. Insert blower clutch attach bushing with 7/16”-20 x 1 3/4” grade 5 bolt and lock washer. Apply two drops of blue locktite to threads and then torque bolt 30 foot pounds.
8. Add pulley for water pump or generator drive. A 3/8” x 1/4” step key is required.
9. *Loosen the four bolts at the top of the bearing housing* one half turn and slide 1 7/16” expansion bearing housing on shaft toward front of machine. ***Do not tighten set screws in locking collars yet!***
10. Place two AX43 belts over shaft.
11. Place mounted shaft on machine. Line up bearing housings with slots in bearing stands on machine frame and insert belt take-ups and bolts. Run nut down threads but do not tighten completely.
12. Position bearing race of 1 7/16” expansion bearing to center position. The grease fitting will land in the middle of the housing which is visible when the cover plate is removed. Use a small screw driver against the grease fitting stud to slide the bearing insert.
13. Install pulley on blower shaft and gearbox shaft. Take up slack in AX43 belts going to gearbox. When the belts are tightened, make sure pulleys are aligned straight and that the bearing housing stays straight in line to the bearing stand. Make sure shaft stays straight and is square to machine frame. ***Tighten nuts to mounting bolts.***
14. ***Tighten the set screws in both locking collars on each bearing unit.***
15. Rotate shaft several revolutions by hand allowing the bearing units to self align in the housings. ***Tighten the four bolts 24 foot pounds on each bearing unit.***
16. Mount input pulley on shaft. Align pulley to idler pulley on machine or drive pulley under the truck.
17. Take up slack in AX56 belts going to blower.
18. Install torque arm assemblies as shown in the drawing.
19. Mount PTO drive belts and tension with idler assembly.
20. Refer to the electrical schematic to correctly wire the clutches.
21. Install any guards removed for service.
22. Test machine before heading to next job site.

WARNING: MAKE ALL CHECKS WITH THE INDUSTRIAL ENGINE OFF OR PTO DRIVE DISENGAGED. ALL MACHINE ELECTRICAL IS POWERED BY THE ENGINE OR TRUCK BATTERY. IN ORDER TO CHECK ELECTRICAL FUNCTIONS THE FOLLOWING HAS TO HAPPEN; CLOSE SWING GATES, TURN MASTER SWITCH ON, PULL EMERGENCY STOP BUTTONS OUT (ON), AND PUSH THE RESET BUTTON. IF AN EMERGENCY STOP BUTTON IS PUSHED IN DURING TROUBLESHOOTING, REMEMBER TO PUSH THE RESET BUTTON. ADDITIONALLY, IF THE BATTERY IS WEAK (LOW VOLTAGE), THE ELECTRICAL MAY NOT WORK. THIS CONDITION MAY ALSO BE CAUSED BY LOOSE OR CORRODED BATTERY CONNECTIONS.

TROUBLESHOOTING

1a. ENGINE WILL NOT START.

A. CHECK IF BATTERY CHARGE IS LOW.

B. SEE ENGINE MANUFACTURER'S MANUAL.

1b. PTO WILL NOT ENGAGE.

A. SEE TRUCK MANUFACTURER'S PTO ACCESSORY MANUAL.

2. ENGINE STARTS OR PTO ENGAGES BUT THERE ARE NO OTHER MACHINE FUNCTIONS - NO ELECTRICAL POWER TO FRONT PANEL.

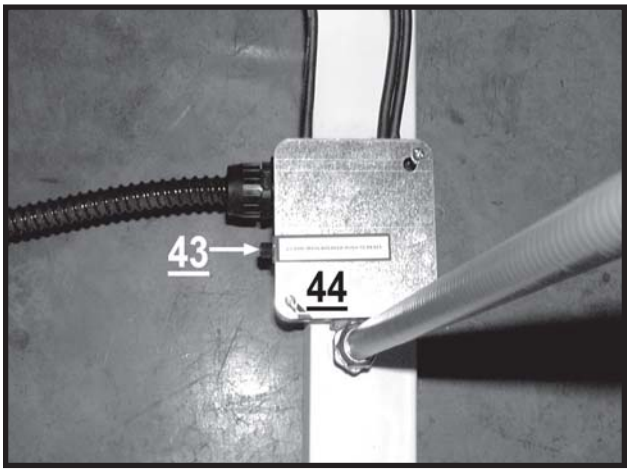
A. CHECK FOR TRIPPED CIRCUIT BREAKER **43** IN HANDY BOX **44** LOCATED ON MACHINE BASE FRAME. **THE CIRCUIT BREAKER IS LOCATED ON THE FRONT PANEL OF NEWER EQUIPMENT.** TO RESET, PUSH THE BUTTON IN. ALSO CHECK FOR A CIRCUIT BREAKER AT THE BATTERY CONNECTION ON PTO MODELS.

B. CIRCUIT BREAKER TRIPS AGAIN. CHECK FOR LOOSE OR DAMAGED WIRES, SHORTS TO GROUND (FRAME IS GROUNDED).

C. MAKE SURE MASTER SWITCH IS ON.

D. MAKE SURE SWING GATES ARE CLOSED.

E. **ON NEWER EQUIPMENT,** CHECK THAT AN EMERGENCY STOP BUTTON IS NOT PUSHED IN (OFF).



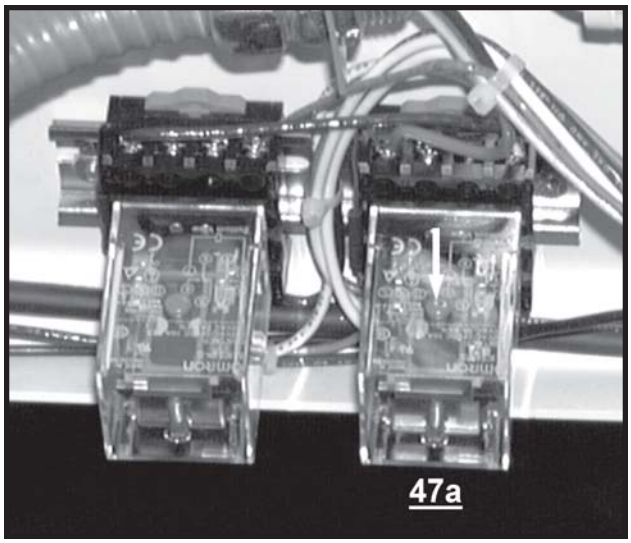
F. **ON NEWER EQUIPMENT**, PUSH RESET BUTTON.

3. ENGINE STARTS OR PTO ENGAGES - BUT BLOWER WILL NOT OPERATE.

A. **ON NEWER EQUIPMENT**, NO POWER AT LATCHING RELAY.

B. CHECK TO SEE IF BLOWER CLUTCH IS OPERATING.

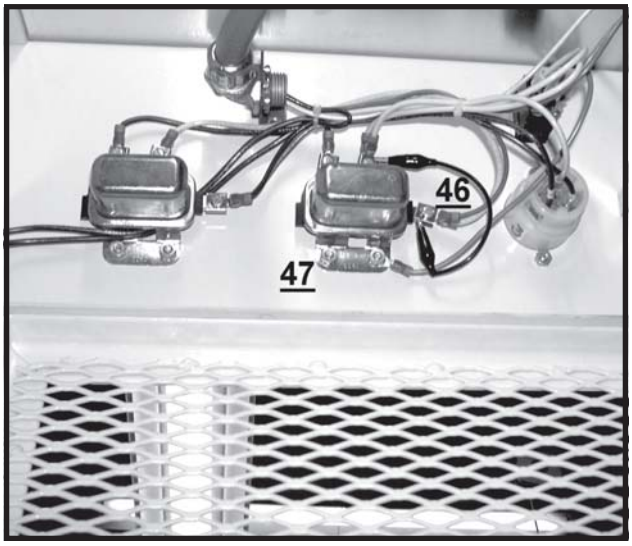
C. CLUTCH NOT OPERATIONAL - CHECK REMOTE CORD. WITH MASTER SWITCH **6** ON AND SWING GATE SAFETY SWITCH **2** ACTUATED, USE JUMPER WIRE **45** IN REMOTE CORD RECEPTACLE **7**. IF BLOWER STARTS, REMOTE CORD BAD.



D. REMOTE CORD OK - CHECK BLOWER RELAY. USE JUMPER WIRE **46** AS SHOWN TO CHECK RELAY **47**. THE MASTER SWITCH WILL HAVE TO BE ON, REMOTE CORD PLUGGED IN AND ENGAGED, PLUS SWING GATE SAFETY SWITCH ACTUATED TO COMPLETE THIS CHECK. IF BLOWER STARTS, THE RELAY IS BAD.

FOR NEW STYLE RELAYS **47a**, DEPRESS OVERRIDE BUTTON (SEE ARROW). IF BLOWER STARTS, THE RELAY IS BAD.

NOTE: SEE PAGE 55 FOR THE LATEST RELAY STYLE NOW BEING USED.



E. CHECK WIRE HARNESS AND CLUTCH ELECTRICAL CONNECTIONS.

F. CHECK BELTS, ADJUST OR REPLACE AS REQUIRED.

G. CHECK BATTERY, CLUTCH WILL NOT CYCLE OR WILL SLIP IF BATTERY IS NOT FULLY CHARGED.

H. CHECK VOLTAGE AT CLUTCH.

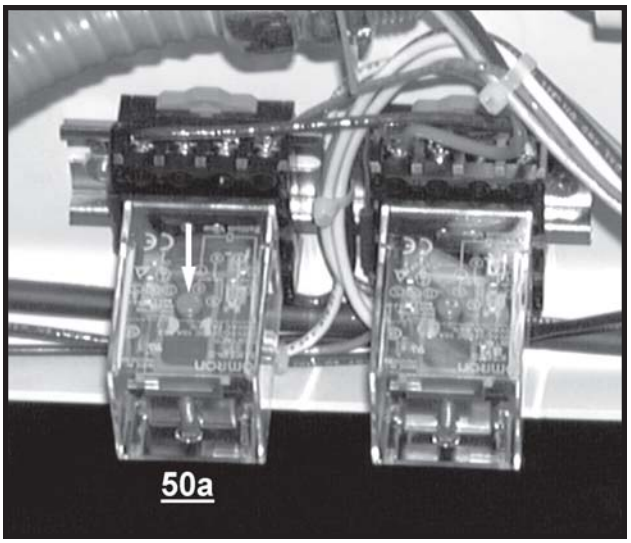
I. CHECK THAT BLOWER CAN BE TURNED BY HAND. IF NOT - BLOWER DEFECTIVE.

J. FAULTY CLUTCH - REPLACE.

4. ENGINE STARTS OR PTO ENGAGES AND BLOWER OPERATES - BUT MACHINE MECHANISMS WILL NOT OPERATE.

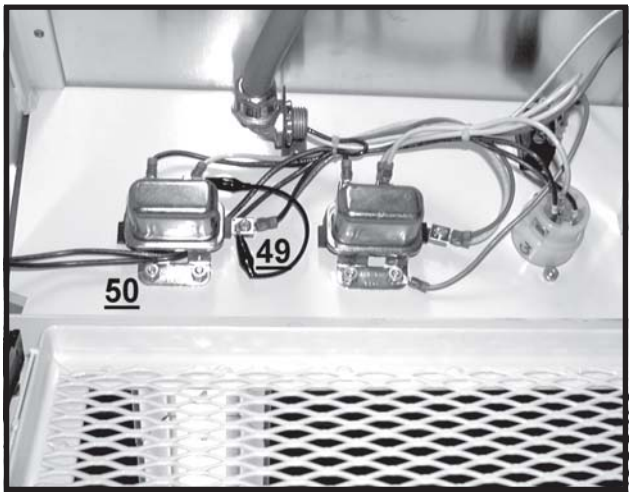
A. CHECK TO SEE IF MECHANISM CLUTCH IS OPERATING.

B. CLUTCH NOT OPERATIONAL - CHECK REMOTE CORD. WITH MASTER SWITCH **6** ON, SWING GATE SAFETY **2** ACTUATED, AND BLOWER JUMPER WIRE **45** IN PLACE - USE JUMPER WIRE **48** IN REMOTE CORD RECEPTACLE **7**. IF MECHANISM STARTS, REMOTE CORD BAD.



NOTE: THE BLOWER RELAY MUST BE ENGAGED FOR POWER TO FLOW TO THE MECHANISM RELAY AND FOR MECHANISM CLUTCH TO ENGAGE.

C. REMOTE CORD OK - CHECK MECHANISM RELAY. USE JUMPER WIRE **49** AS SHOWN TO CHECK RELAY **50**. THE MASTER SWITCH WILL HAVE TO BE ON, REMOTE CORD PLUGGED IN AND ENGAGED, PLUS THE SWING GATE SAFETY SWITCH ACTUATED TO COMPLETE THIS CHECK. IF MECHANISM STARTS, THE RELAY IS BAD. FOR NEW STYLE RELAY **50a**, DEPRESS OVERRIDE BUTTON (SEE ARROW). IF MECHANISM STARTS, THE RELAY IS BAD.



D. CHECK WIRE HARNESS AND CLUTCH ELECTRICAL CONNECTIONS.

E. CHECK BELTS, ADJUST OR REPLACE AS REQUIRED.

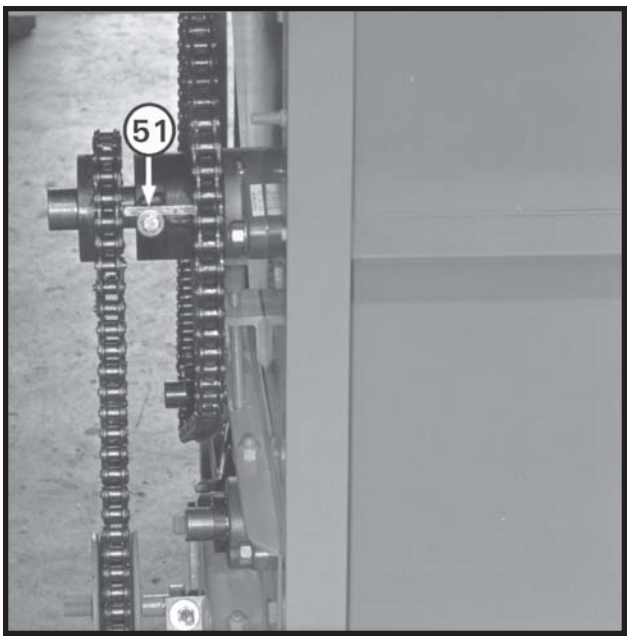
F. CHECK BATTERY, CLUTCH WILL NOT CYCLE OR WILL SLIP IF BATTERY IS NOT FULLY CHARGED.

G. CHECK VOLTAGE AT CLUTCH.

H. CHECK FEEDER SHEAR KEY **51**.

I. TRANSMISSION NOT IN GEAR.

J. FAULTY CLUTCH - REPLACE.



5. INSUFFICIENT AIR - CLUTCH IS OPERATING.

A. CHECK THAT AIR BLEED CONTROL VALVE **13** IS NOT FULLY OPEN.

B. CHECK THAT BLOWER RELIEF VALVE **34** IS NOT STUCK OPEN.

C. CHECK IF BLOWER AIR INTAKE TRUCK FLANGE **28** IS CLOGGED.

D. CHECK AIRSTREAM AND BLEED AIR HOSE CONNECTIONS.

E. CHECK THAT ONE WAY AIR CHECK VALVE **52** IS NOT STUCK OPEN.

F. CHECK BELTS, ADJUST OR REPLACE AS REQUIRED. CHECK FOR MISSING KEYS UNDER DRIVE PULLEYS.

G. FIBER HOSE OR STANDPIPES PLUGGED.

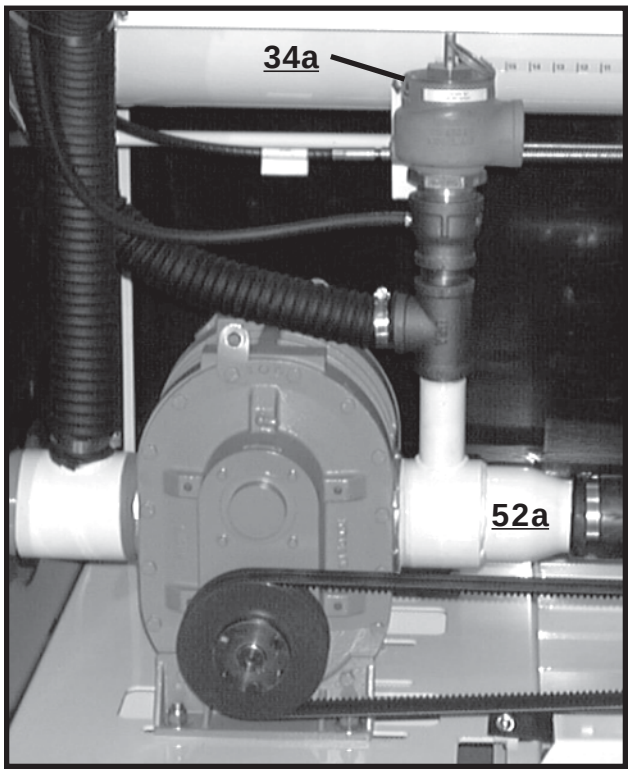
H. FEEDER SEALS WORN OR DAMAGED. FEEDER COMPONENTS WORN OUT OR DAMAGED.

I. BLOWER DEFECTIVE, WORN, OR DAMAGED.

NOTE: THIS STYLE CHECK VALVE IS OBSOLETE.


IN THIS VIEW, THE VALVE IS CLOSED.

THE NEXT PICTURE IS THE NEW STYLE RELIEF VALVE **34a** AND CHECK VALVE **52a** UNISUL NOW USES. THE CHECK VALVE IS NOW A FLAPPER STYLE AS APPOSSED TO THE OLD BUTTERFLY STYLE. THE FLAPPER STYLE RAISES UP TO OPEN AND SWINGS DOWN TO CLOSE.



6. NO MATERIAL FLOW - CLUTCH IS OPERATING.

A. NO MATERIAL IN HOPPER.

B. CHECK FEEDER SHEAR KEY **51**, REPLACE AS REQUIRED. SHUT MACHINE DOWN COMPLETELY AND LOOK FOR JAMS IN MACHINE IF KEY CONTINUALLY SHEARS.

C. MATERIAL CONDITIONING SLIDE **15** CLOSED OR ADJUSTED IN TO FAR FOR MATERIAL FEED RATE.

D. CHECK BELTS, ADJUST OR REPLACE AS REQUIRED. CHECK FOR MISSING KEYS UNDER DRIVE PULLEYS.

E. CHECK CHAINS, ADJUST OR REPLACE AS REQUIRED. CHECK FOR MISSING KEYS UNDER DRIVE SPROCKETS.

E. OBJECT RESTRICTING FLOW IN SHREDDER HOUSING OR HOPPER AREA.

F. FIBER HOSE OR STANDPIPES PLUGGED.

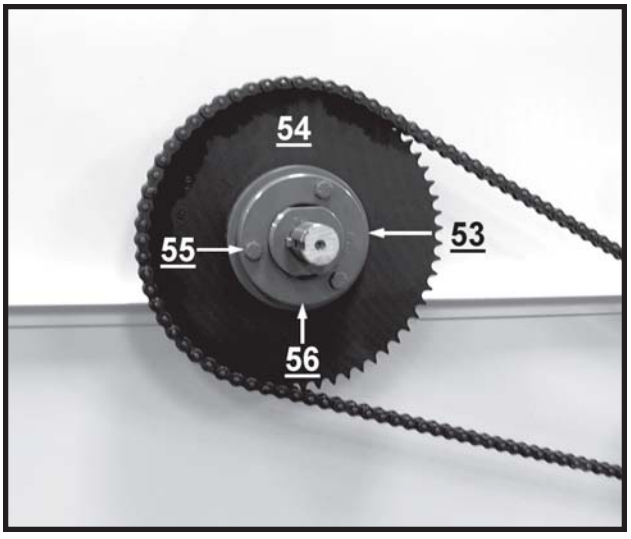
7. TORQUE LIMITER SLIPS OR WILL NOT FUNCTION.

A. LOOK FOR MATERIAL WEDGE IN HOPPER UNDER JOGGER.

B. EXAMINE METAL FACES OF TORQUE LIMITER **53** AND SPROCKET **54** FOR OIL OR GREASE. THE TORQUE LIMITER WILL SLIP IF MATING SURFACES ARE OILY.

C. EXAMINE METAL FACES FOR ROUGH SPOTS OR RUST. TORQUE LIMITER FUNCTION TO SLIP UNDER EXCESSIVE LOADS WILL NOT OCCUR IF MATING SURFACES ARE NOT CLEAN. THE TORQUE SHOULD BE 145 FT/LBS.

D. TO RESET THE TORQUE LIMITER, LOOSEN THE THREE CAP SCREWS **55** UNTIL THE POINTS ARE RECESSED IN ADJUSTING COLLAR **56**. TURN ADJUSTING COLLAR CLOCKWISE UNTIL HAND TIGHT AND THEN TURN AN ADDITIONAL 1/4 TURN. TIGHTEN CAP SCREWS UNTIL HEADS BOTTOM.

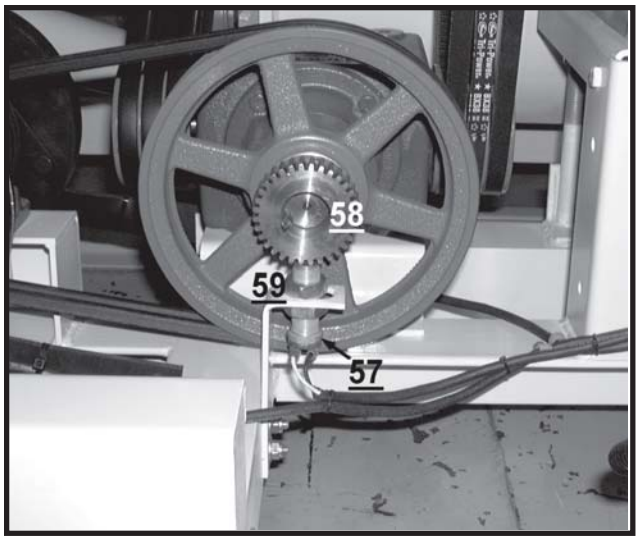


8. TACHOMETER - HOUR METER WILL NOT FUNCTION.

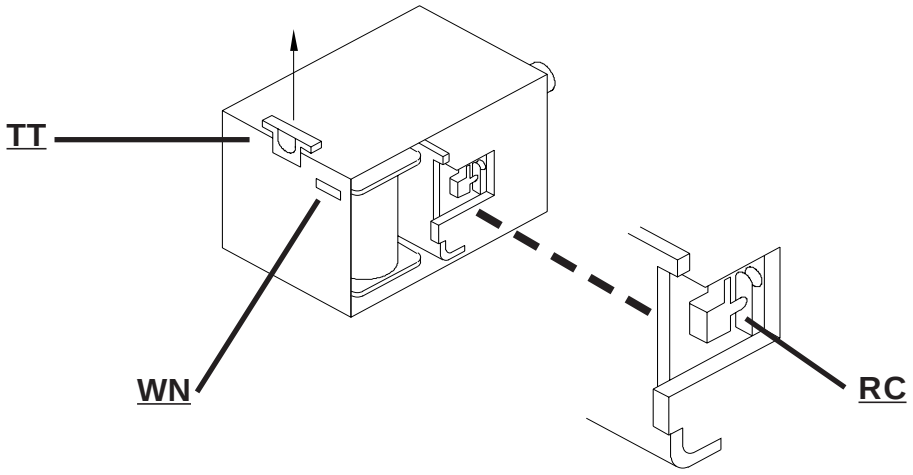
A. CHECK ALL ELECTRICAL CONNECTIONS AND WIRING.

B. CHECK TACH SENSOR **57**. THE SENSOR FACE MUST BE CLEAN AND FREE OF GREASE AND MATERIAL BUILD UP.

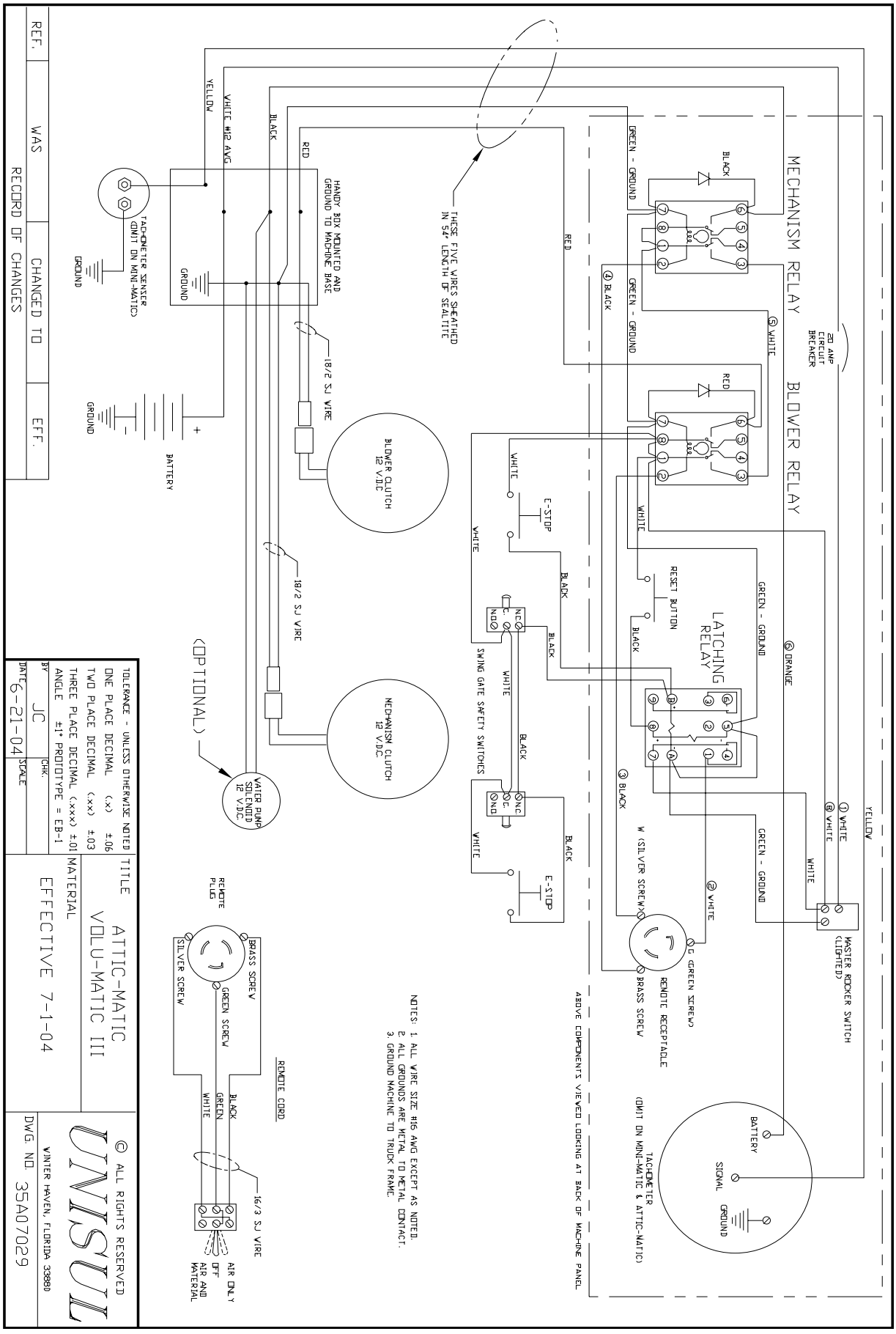
C. FACE OF TACH SENSOR MUST BE SQUARE WITH SENDING GEAR **58**. THE SPACE BETWEEN THE SENSOR AND GEAR SHOULD BE .030 TO .040. ADJUSTMENTS MAY BE MADE BY MEANS OF TWO LOCK NUTS **59**.



FOR THE LATEST STYLE RELAY THAT IS NOW USED, YOU WILL PULL UP THE TEST TAB **TT** TO LOCK THE RELAY CONTACT **RC**. YOU SHOULD SEE A COLORED FLAG IN THE WINDOW **WN** TO INDICATE CONTACT.



WARNING: LEAVING THE TAB IN THE UP POSITION ON THE RELAY WILL OVERRIDE THE REMOTE CONTROL FUNCTION. THE CLUTCH WILL STAY ENGAGED AS LONG AS THE MASTER SWITCH IS TURNED ON. ALWAYS RETURN THE TEST TAB TO THE NORMAL OPERATION POSITION, USE ONLY FOR TROUBLESHOOTING.


MECHANISM RELAY
BLOWER RELAY
LATCHING RELAY
20 AMP CIRCUIT BREAKER
MASTER ROCKER SWITCH (LIGHTED)
REMOTE RECEPTACLE
TACHOMETER (OMIT ON MINI-MATIC & ATTIC-MATIC)
BATTERY
SIGNAL
GROUND
ABOVE COMPONENTS VIEWED LOOKING AT BACK OF MACHINE PANEL
THESE FIVE WIRES SHEATHED IN 54" LENGTH OF SEALTITE
HANDY BOX MOUNTED AND GROUND TO MACHINE BASE
TACHOMETER SENSOR (OMIT ON MINI-MATIC)
BLOWER CLUTCH 12 V.D.C.
MECHANISM CLUTCH 12 V.D.C.
WATER PUMP SOLENOID 12 V.D.C.
<OPTIONAL>
E-STOP
RESET BUTTON
SWING GATE SAFETY SWITCHES
REMOTE PLUG
BRASS SCREW
SILVER SCREW
GREEN SCREW
REMOTE CORD
AIR ONLY
OFF
AIR AND MATERIAL
BLACK
WHITE
RED
YELLOW
GREEN - GROUND
ORANGE
18/2 SJ WIRE
16/3 SJ WIRE
NOTES: 1. ALL WIRE SIZE #16 AWG EXCEPT AS NOTED.
2. ALL GROUNDS ARE METAL TO METAL CONTACT.
3. GROUND MACHINE TO TRUCK FRAME.
REF.
WAS
CHANGED TO
EFF.
RECORD OF CHANGES
TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = EB-1
BY JC
DATE 6-21-04
CHK.
SCALE
TITLE ATTIC-MATIC VOLU-MATIC III
MATERIAL
EFFECTIVE 7-1-04
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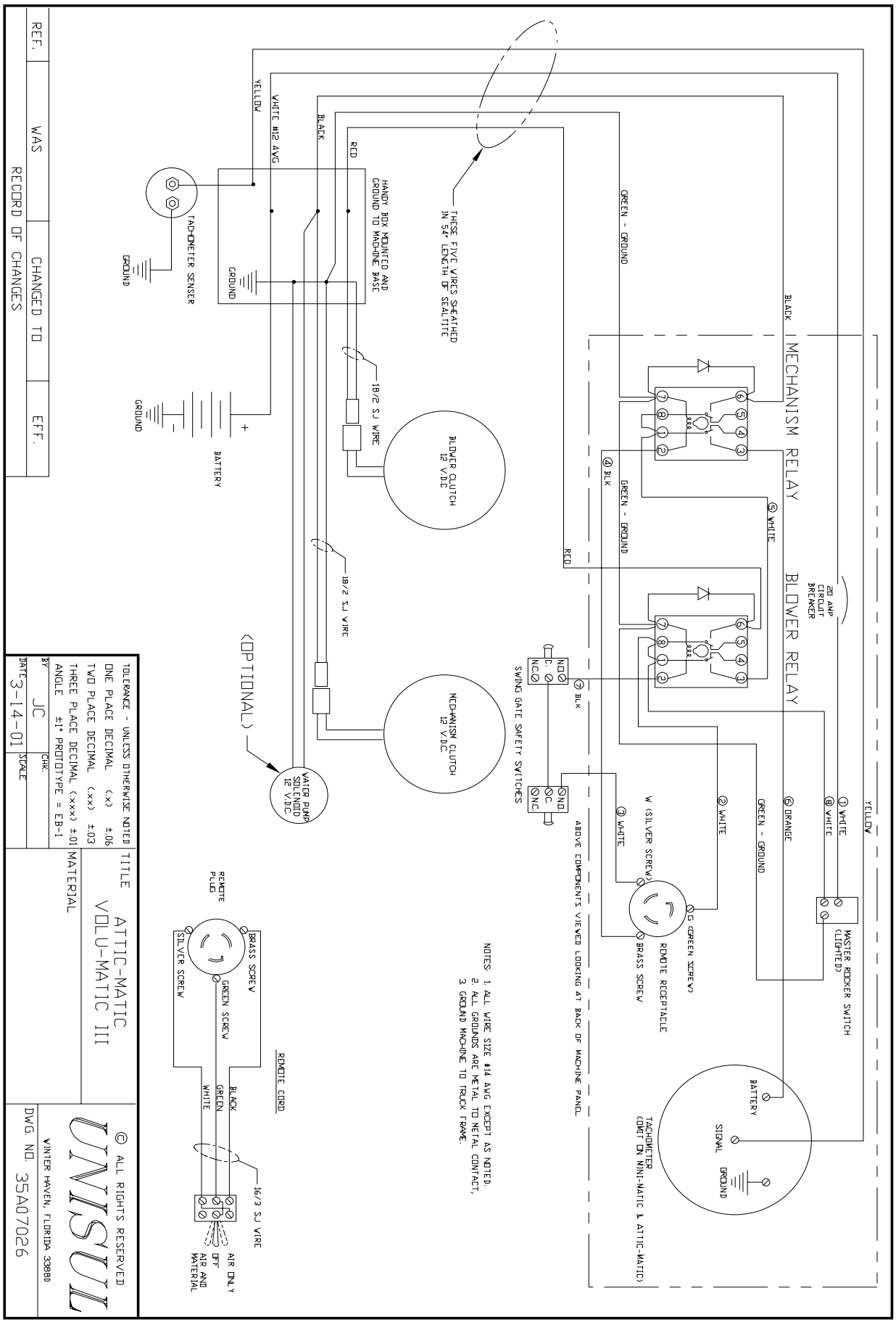
UNIVUL
WINTER HAVEN, FLORIDA 33880
DWG. NO. 35A07029


MECHANISM RELAY
BLOWER RELAY
MASTER ROCKER SWITCH (LIGHTED)
20 AMP CIRCUIT BREAKER
YELLOW
BLACK
GREEN - GROUND
WHITE
ORANGE
RED
BLK
WHITE #12 AWG
THESE FIVE WIRES SHEATHED IN 54" LENGTH OF SEALTITE
HANDY BOX MOUNTED AND GROUND TO MACHINE BASE
18/2 SJ WIRE
BLOWER CLUTCH 12 V.D.C.
MECHANISM CLUTCH 12 V.D.C.
WATER PUMP SOLENOID 12 V.D.C.
(OPTIONAL)
TACHOMETER SENSER
GROUND
BATTERY
SWING GATE SAFETY SWITCHES
N.O.
C.
N.C.
ABOVE COMPONENTS VIEWED LOOKING AT BACK OF MACHINE PANEL
W (SILVER SCREW)
(GREEN SCREW)
REMOTE RECEPTACLE
BRASS SCREW
TACHOMETER (UNIT ON MINI-MATIC & ATTIC-MATIC)
SIGNAL
NOTES: 1. ALL WIRE SIZE #14 AWG EXCEPT AS NOTED.
2. ALL GROUNDS ARE METAL TO METAL CONTACT.
3. GROUND MACHINE TO TRUCK FRAME.
REMOTE PLUG
REMOTE CORD
16/3 SJ WIRE
AIR ONLY
OFF
AIR AND WATERIAL
REF.
WAS
CHANGED TO
EFF.
RECORD OF CHANGES
TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = EB-1
BY JC
CHK.
DATE 3-14-01
SCALE
TITLE
ATTIC-MATIC
VOLU-MATIC III
MATERIAL
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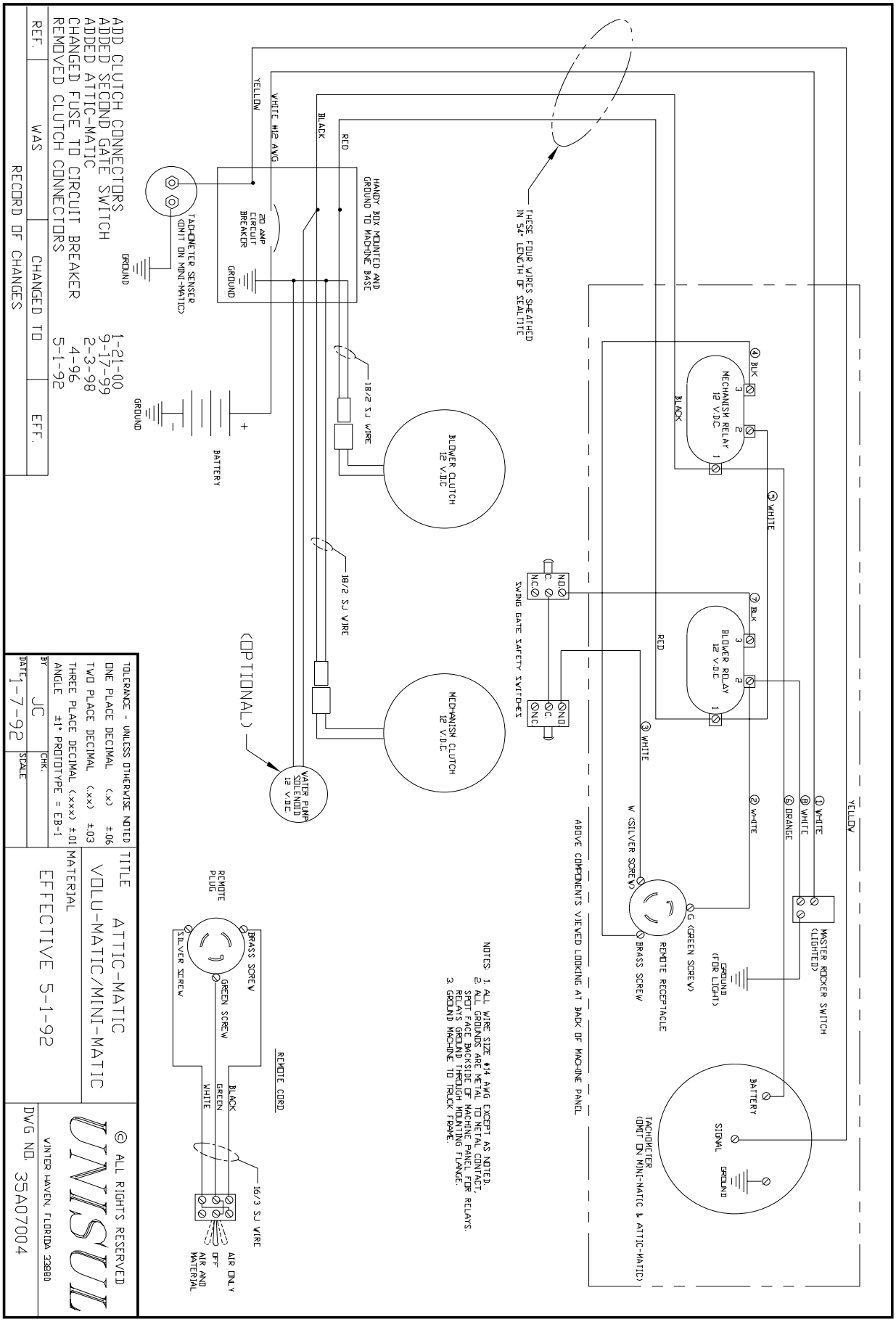
WINTER HAVEN, FLORIDA 33880
DWG. NO. 35A07026



NOTES:
1. ALL WIRE SIZE #14 AWG EXCEPT AS NOTED.
2. ALL GROUNDS ARE METAL TO METAL CONTACT, SPOT FACE BACKSIDE OF MACHINE PANEL FOR RELAYS. RELAYS GROUND THROUGH MOUNTING FLANGE.
3. GROUND MACHINE TO TRUCK FRAME.

REF.	WAS	CHANGED TO	EFF.
	RECORD OF CHANGES		
A	ADD CLUTCH CONNECTORS	1-21-00	
B	ADDED SECOND GATE SWITCH	9-17-99	
C	ADDED ATTIC-MATIC	2-3-98	
D	CHANGED FUSE TO CIRCUIT BREAKER	4-96	
E	REMOVED CLUTCH CONNECTORS	5-1-92	

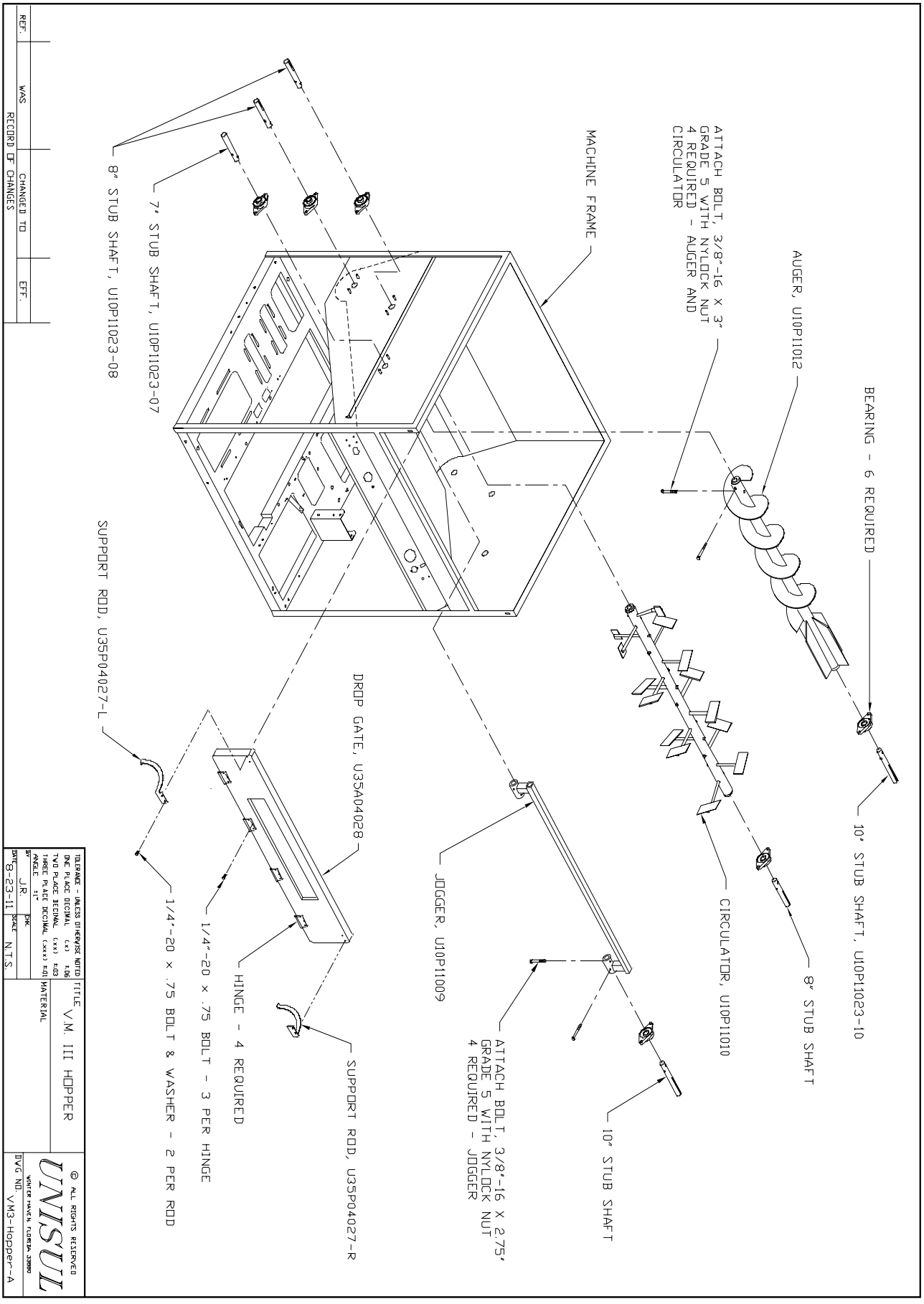
TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = EB-1

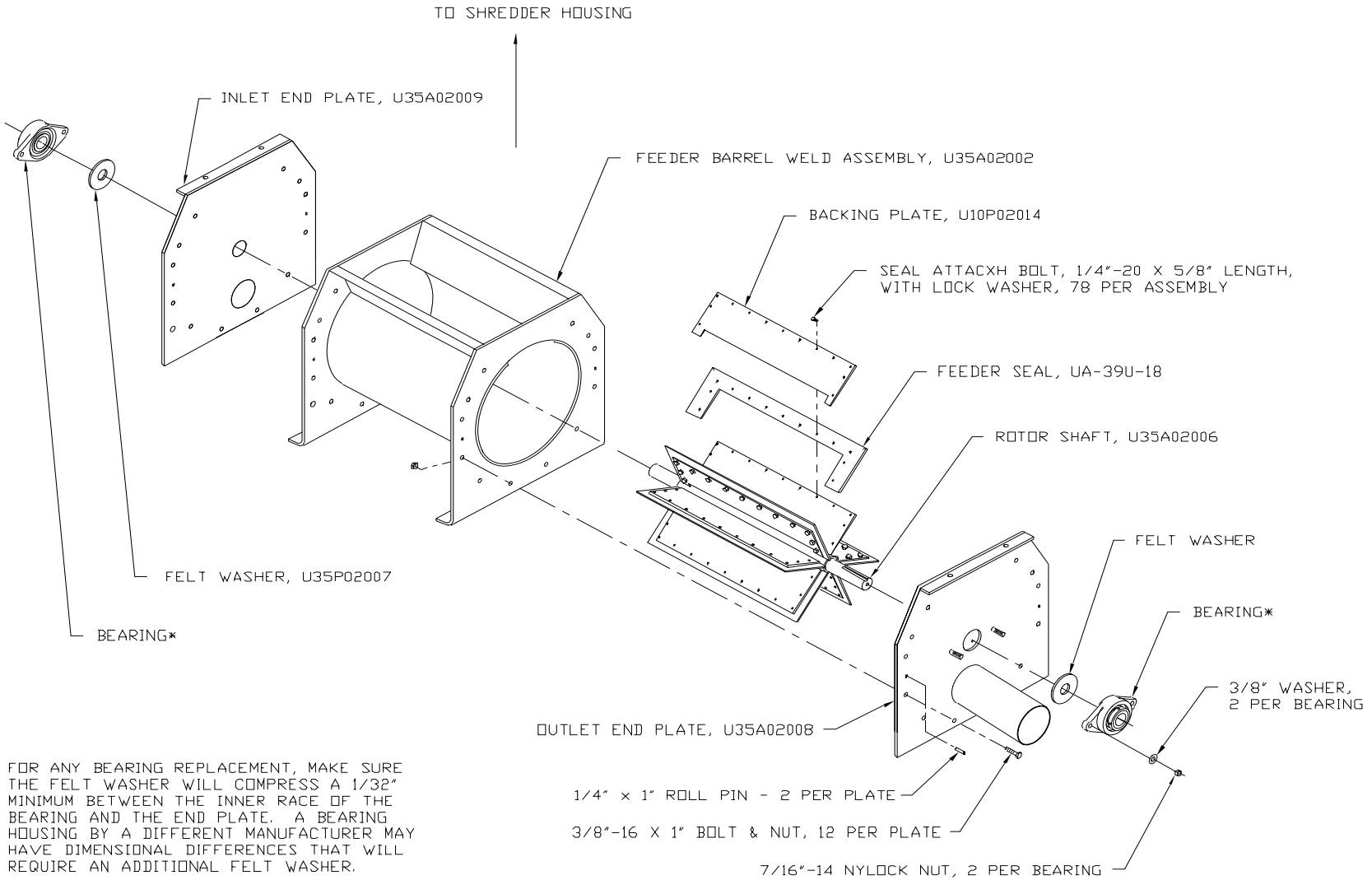
BY JC CHK.
DATE 1-7-92 SCALE

TITLE ATTIC-MATIC VOLU-MATIC/MINI-MATIC
MATERIAL
EFFECTIVE 5-1-92

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A0700 4

PARTS DRAWINGS





* FOR ANY BEARING REPLACEMENT, MAKE SURE THE FELT WASHER WILL COMPRESS A 1/32" MINIMUM BETWEEN THE INNER RACE OF THE BEARING AND THE END PLATE. A BEARING HOUSING BY A DIFFERENT MANUFACTURER MAY HAVE DIMENSIONAL DIFFERENCES THAT WILL REQUIRE AN ADDITIONAL FELT WASHER.

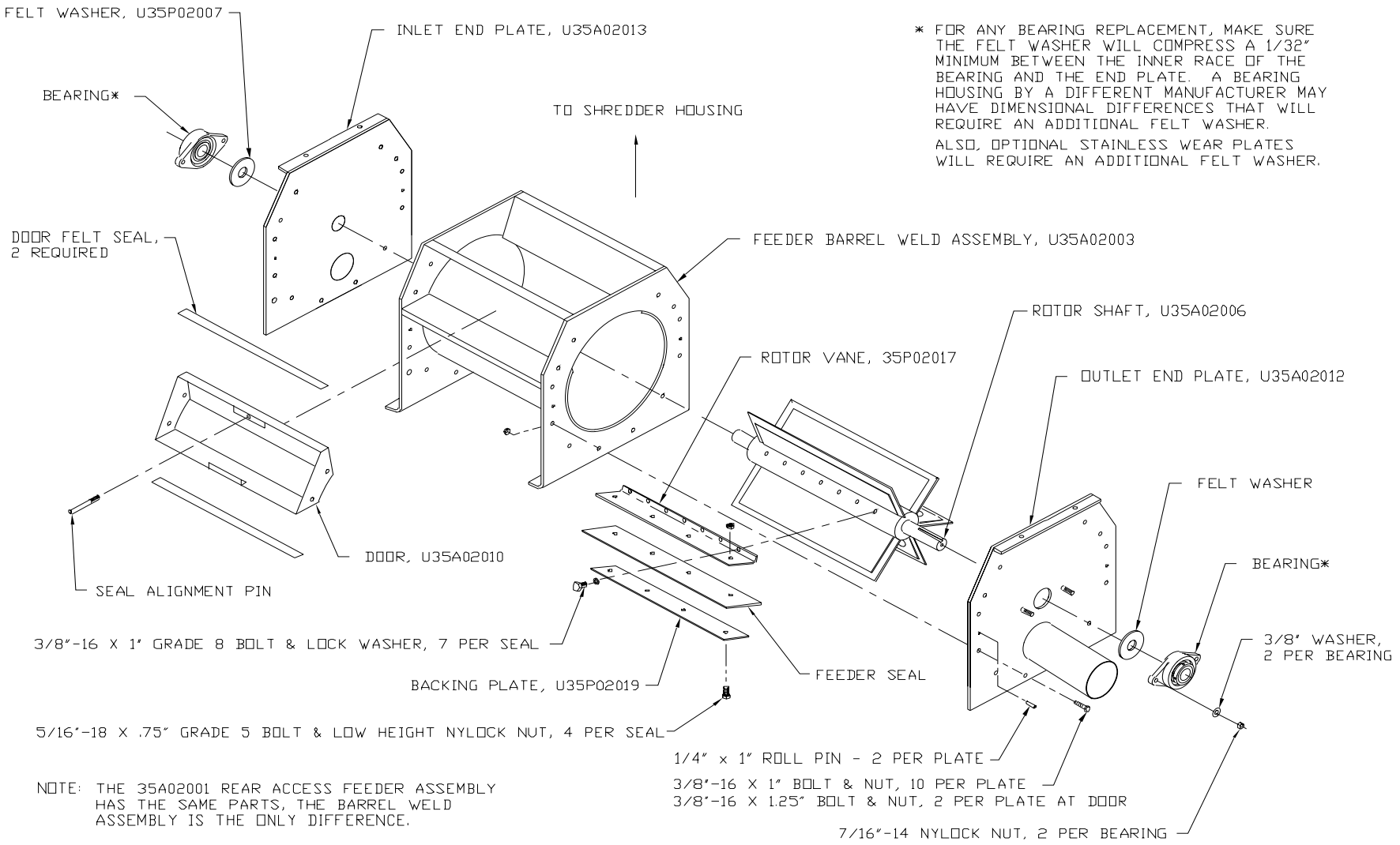
ALSO, OPTIONAL STAINLESS WEAR PLATES WILL REQUIRE AN ADDITIONAL FELT WASHER.

REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED	
ONE PLACE DECIMAL (.x) ±.06	
TWO PLACE DECIMAL (.xx) ±.03	
THREE PLACE DECIMAL (.xxx) ±.01	
ANGLE ±1° PROTOTYPE = AC-1-7	
BY JC	CHK.
DATE 4-8-94	SCALE 1/7

TITLE
VOLU-MATIC III & V
STANDARD FEEDER ASSEMBLY
MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A02000



* FOR ANY BEARING REPLACEMENT, MAKE SURE THE FELT WASHER WILL COMPRESS A 1/32" MINIMUM BETWEEN THE INNER RACE OF THE BEARING AND THE END PLATE. A BEARING HOUSING BY A DIFFERENT MANUFACTURER MAY HAVE DIMENSIONAL DIFFERENCES THAT WILL REQUIRE AN ADDITIONAL FELT WASHER.

ALSO, OPTIONAL STAINLESS WEAR PLATES WILL REQUIRE AN ADDITIONAL FELT WASHER.

NOTE: THE 35A02001 REAR ACCESS FEEDER ASSEMBLY HAS THE SAME PARTS, THE BARREL WELD ASSEMBLY IS THE ONLY DIFFERENCE.

FRONT ACCESS SHOWN

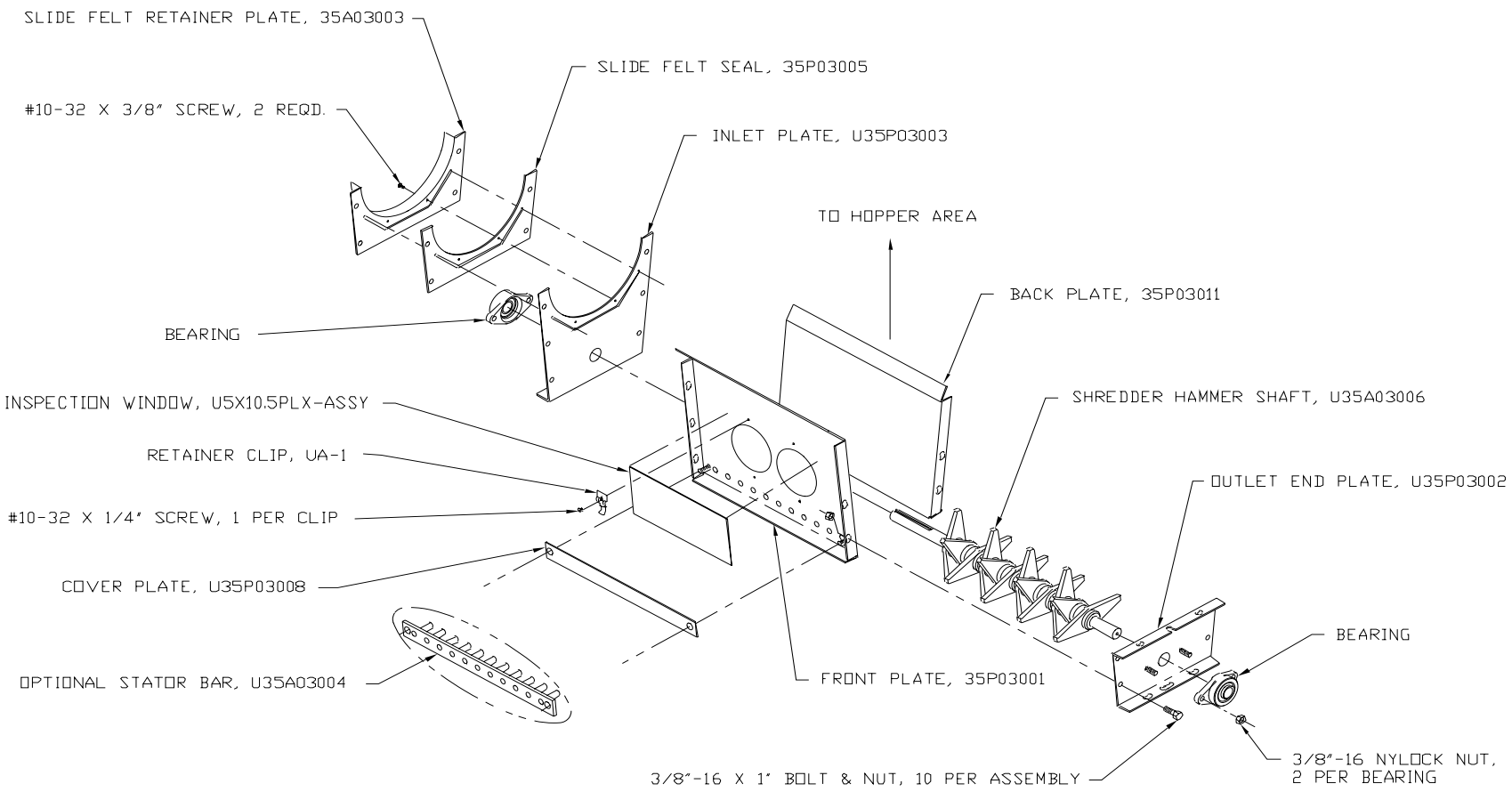
REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-7

BY JC CHK.
DATE 4-20-94 SCALE 1/7

TITLE
VOLU-MATIC III & V
SIDE ACCESS DOOR FEEDER
MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A02014



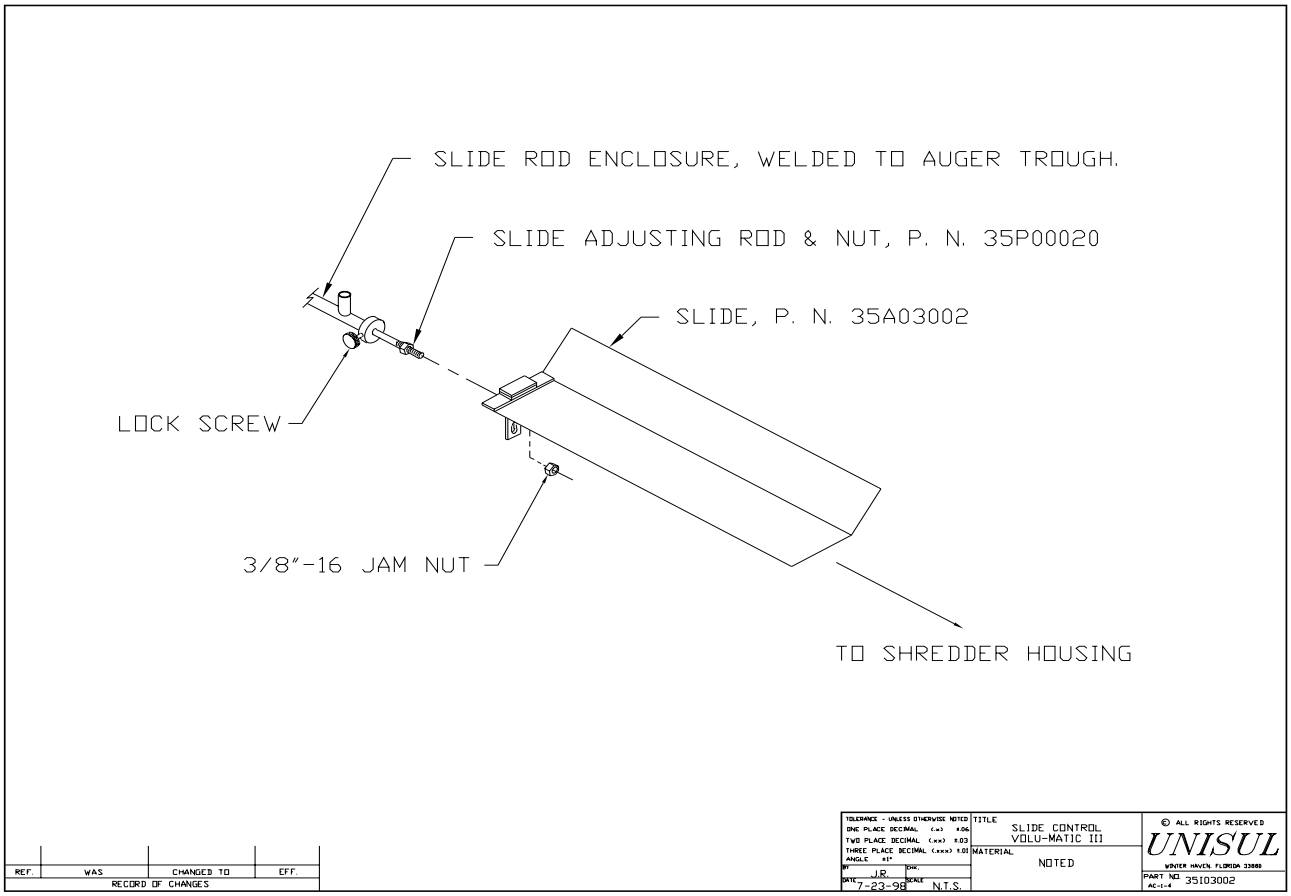
REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-7

BY JC CHK.
DATE 4-11-94 SCALE 1/7

TITLE
VOLU-MATIC III & V
SHREDDER HOUSING ASSY.
MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A03001

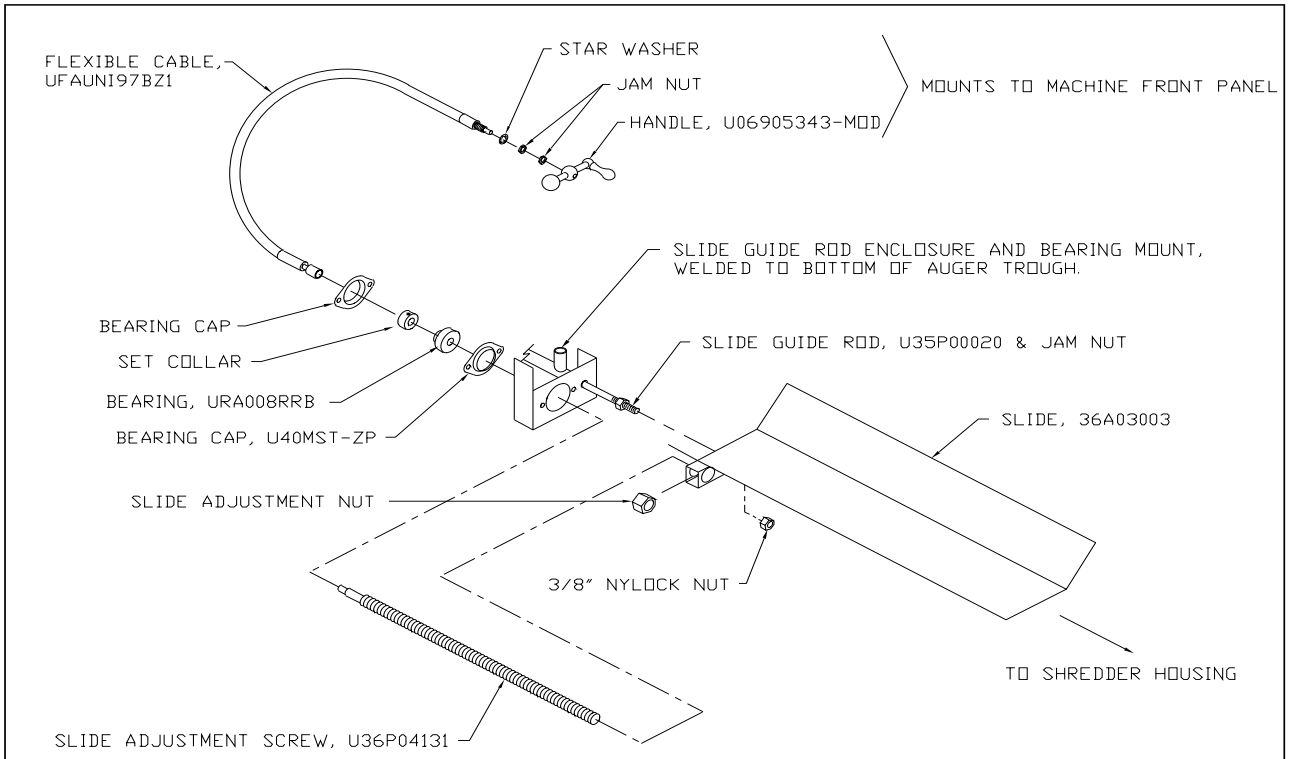


REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°
BY J.R. CHK.
DATE 7-23-98 SCALE N.T.S.

TITLE: SLIDE CONTROL VOLU-MATIC III
MATERIAL: NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
PART NO 35103002
AC-1-4

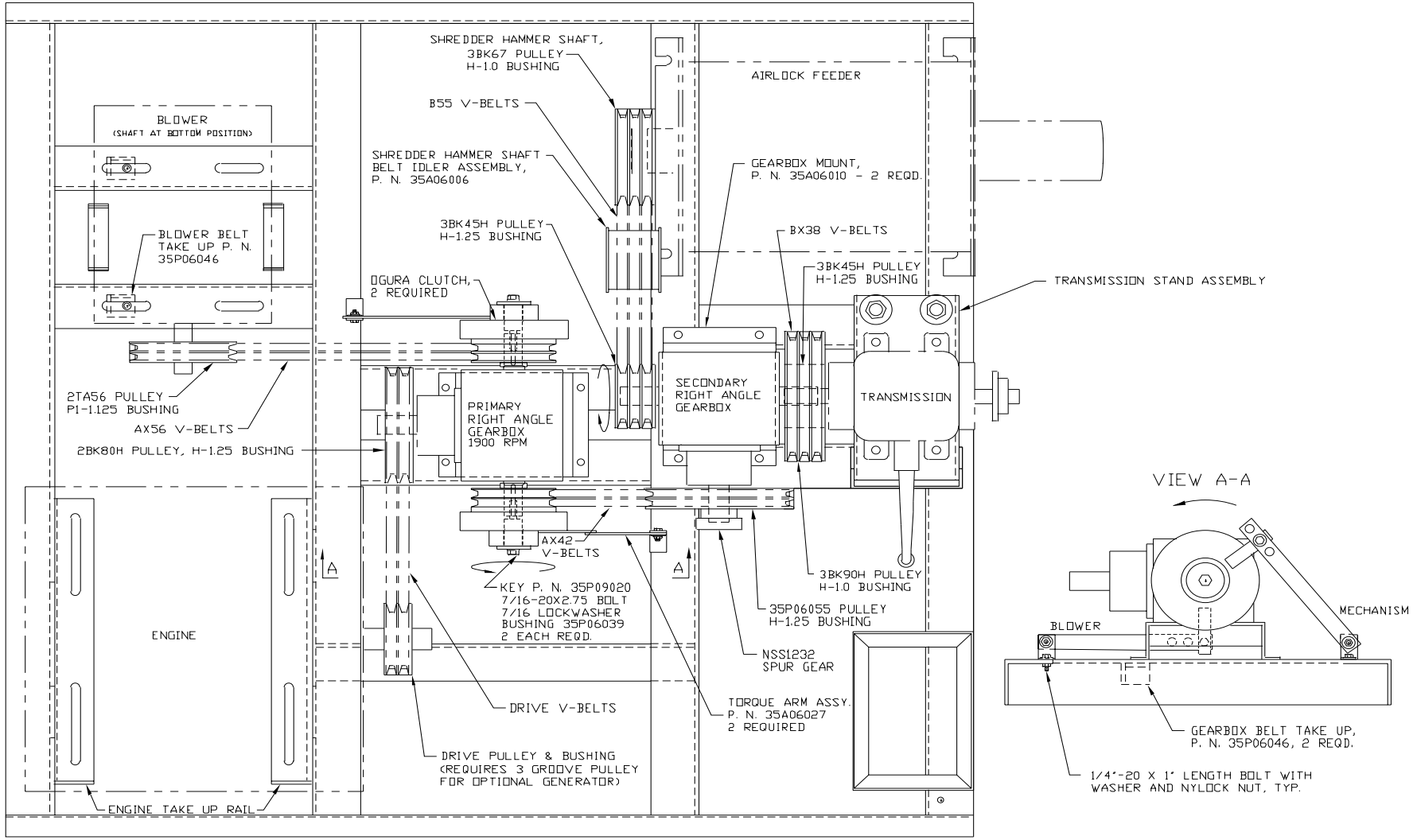


REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°
BY J.R. CHK.
DATE 8-10-98 SCALE N.T.S.

TITLE: SLIDE CONTROL VOLU-MATIC III
MATERIAL:

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. VM3SLIDE
AC-1-4



ENGINE VOLU-MATIC III
OGURA CLUTCHES WITH 4.62Ø PULLEY

DRIVE PULLEYS

2BK45 FOR AIR COOLED KOHLER CH-25 GAS ENGINE @ 3600 RPM - BX46 BELTS Ⓐ
2BK50 FOR AIR COOLED GAS ENGINE @ 3200 RPM - BX48 BELTS
2BK55 FOR AIR COOLED DIESEL ENGINE @ 2800 RPM - BX48 BELTS
2BK45 FOR WATER COOLED KUBOTA @ 3600 RPM, DH850B-1, DH905 & WG600B - BX48 BELTS
2TB48 FOR AIR COOLED HATZ @ 2800 RPM, 2L31C - BX48 BELTS
2BK52 FOR WATER COOLED KUBOTA @ 3050 RPM, D950 - BX46 BELTS

OPTIONAL GENERATOR DRIVEN PULLEY - 1VP44 @ 2 TURNS OPEN ABOVE 3150 RPM ENGINE SPEED AND 3 TURNS OPEN FOR SLOWER ENGINE SPEEDS, USE LINK BELTING.

NOTE: BELT LENGTH CHANGE DUE TO NEW GUARDS.

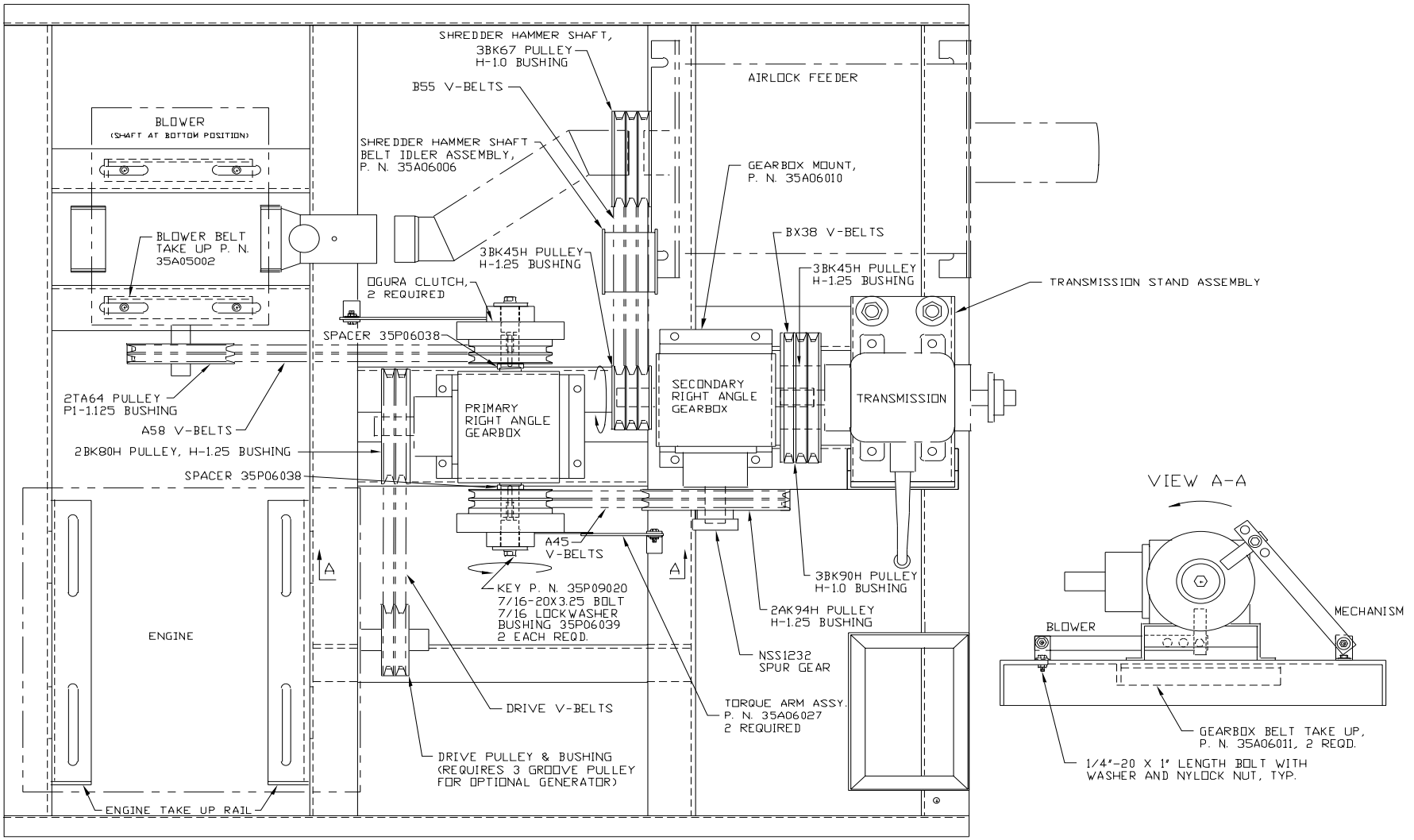
REF.	WAS	CHANGED TO	EFF.
Ⓐ	BX48 BELT	BX46 BELT	7-1-04

RECORD OF CHANGES

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-4
BY E.S.W.
DATE 1/93
REDRAVN J.E.R.
SCALE 1/4

TITLE: DRIVE COMPONENT BASE ASSEMBLY
MATERIAL: NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A06023 DRG2



DRIVE PULLEYS

Ⓐ
2BK45 FOR AIR COOLED KOHLER CH-25 GAS ENGINE @ 3600 RPM - BX46 BELTS
2BK50 FOR AIR COOLED GAS ENGINE @ 3200 RPM - BX48 BELTS
2BK55 FOR AIR COOLED DIESEL ENGINE @ 2800 RPM - BX48 BELTS
2BK45 FOR WATER COOLED KUBOTA @ 3600 RPM, DH850B-1 & WG600B - BX46 BELTS
2TB48 FOR AIR COOLED HATZ @ 2800 RPM, 2L31C - BX48 BELTS
2BK52 FOR WATER COOLED KUBOTA @ 3050 RPM, D950 - BX46 BELTS

OPTIONAL GENERATOR DRIVEN PULLEY - 1VP44 @ 2 TURNS OPEN ABOVE 3150 RPM ENGINE SPEED AND 3 TURNS OPEN FOR SLOWER ENGINE SPEEDS, USE LINK BELTING.

NOTE: BELT LENGTH CHANGE DUE TO NEW GUARDS.

REF.			
Ⓐ	BX48 BELT	BX46 BELT	7-1-04
REF.	VAS	CHANGED TO	EFF.

RECORD OF CHANGES

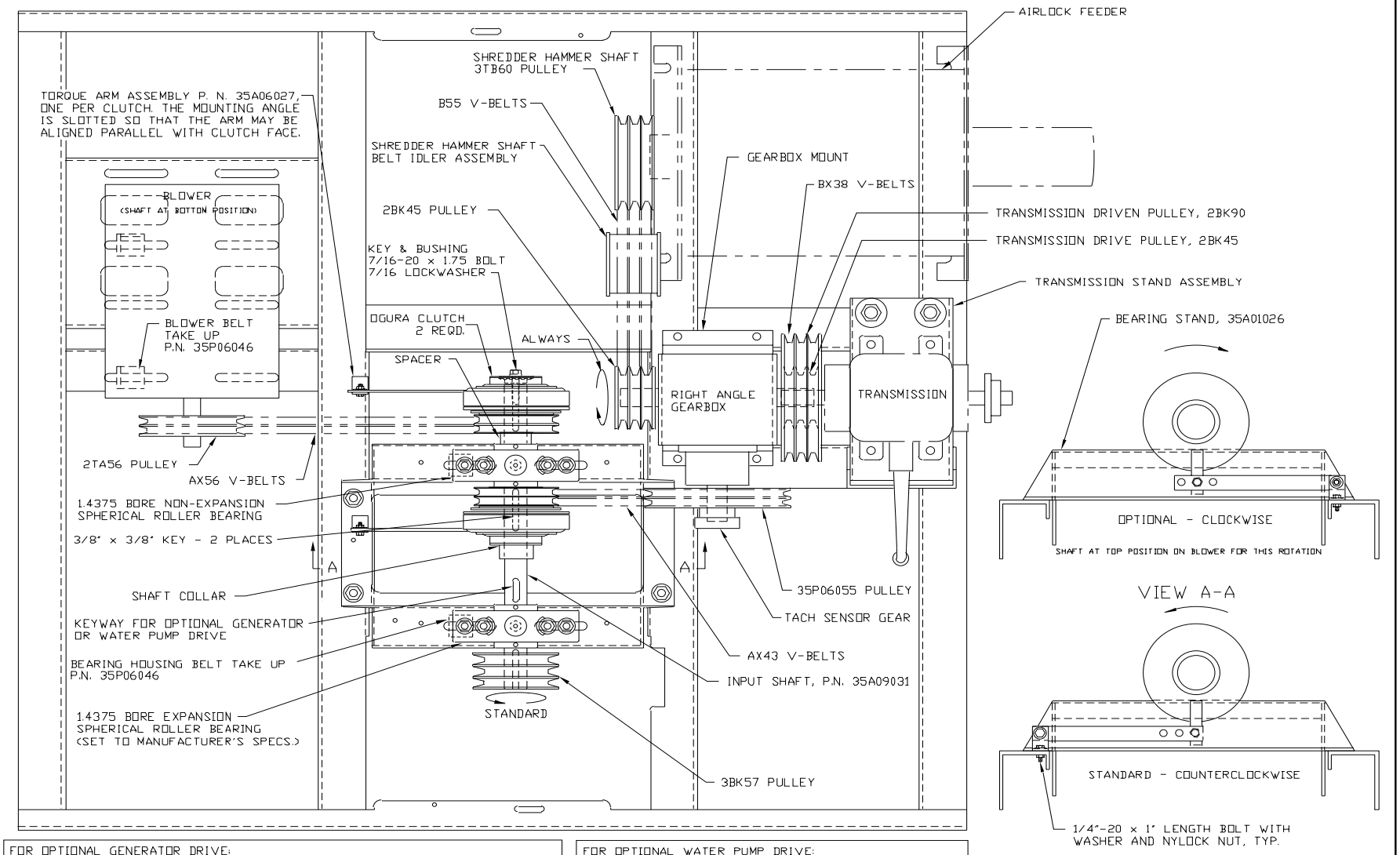
ENGINE VOLU-MATIC III
OGURA CLUTCHES WITH 5.25ø PULLEY

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-)-4

BY E.S.W. | REDRAWN J.E.R.
DATE 1/93 | SCALE 1/4

TITLE: DRIVE COMPONENT BASE ASSEMBLY
MATERIAL: NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A06023-org



FOR OPTIONAL GENERATOR DRIVE:
2400 and 4000 WATT GENERATOR DRIVE PULLEY 2AK84H WITH A H-1.437 BUSHING
2400 and 4000 WATT GENERATOR PULLEY 2AK46H WITH A H-.875 BUSHING
USE A-SECTION NU-T-LINK BELTING - 10 FEET REQUIRED

FOR OPTIONAL WATER PUMP DRIVE:
31P06022 DRIVE PULLEY WITH 1.437 BORE
WATER PUMP DELIVERED WITH PULLEY
USE A-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

P.T.O. VOLU-MATIC III

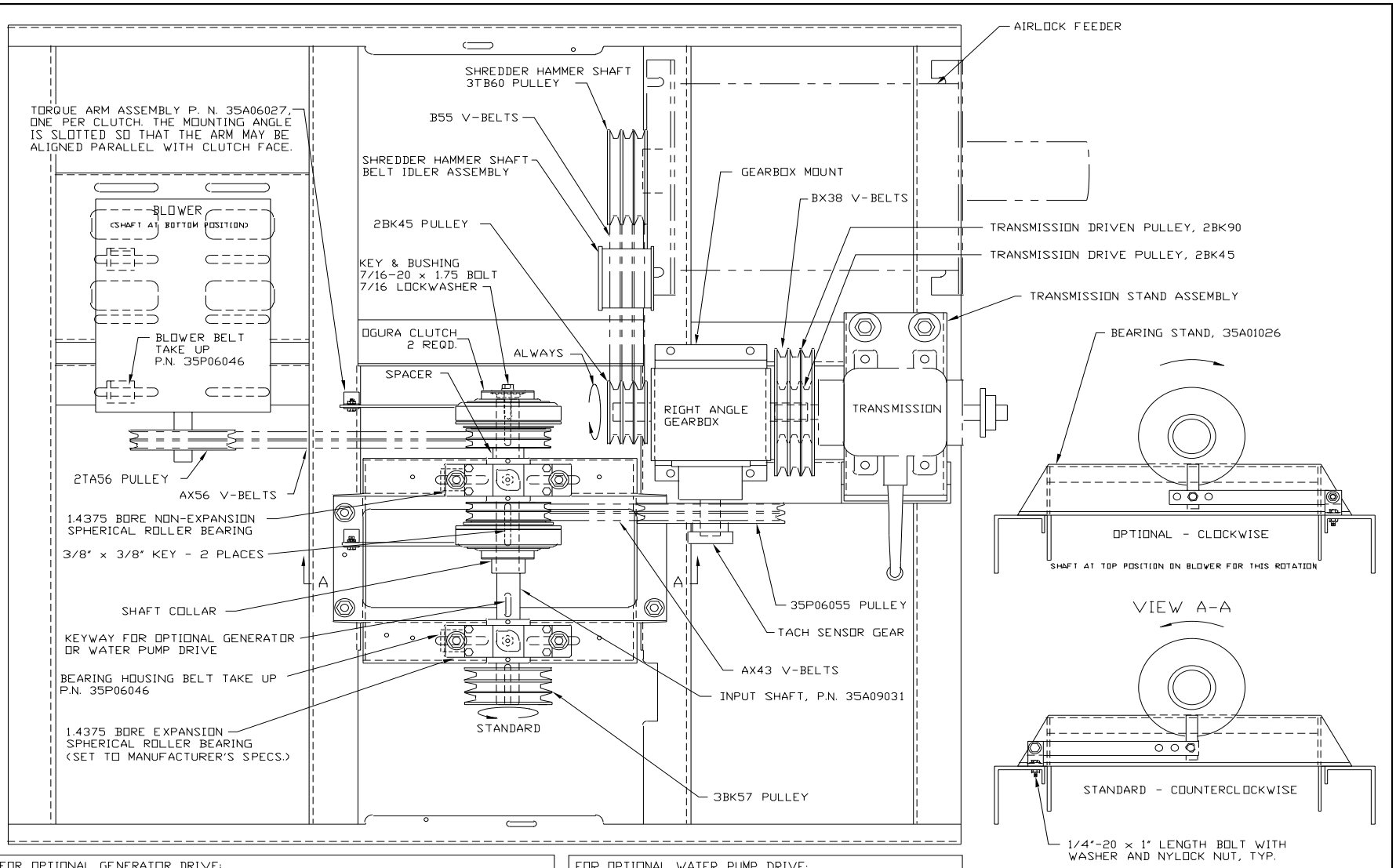
OGURA CLUTCHES WITH 4.62Ø PULLEY
DOUBLE LOCK COLLAR PB970 STYLE BEARINGS

REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-4
BY JC
DATE 12-03
REDRAWN
SCALE 1/4

TITLE: DRIVE COMPONENT BASE ASSEMBLY
MATERIAL: NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO 35A06024



FOR OPTIONAL GENERATOR DRIVE:
2400 and 4000 WATT GENERATOR DRIVE PULLEY 2AK84H WITH A H-1.437 BUSHING
2400 and 4000 WATT GENERATOR PULLEY 2AK46H WITH A H-.875 BUSHING
USE A-SECTION NU-T-LINK BELTING - 10 FEET REQUIRED

FOR OPTIONAL WATER PUMP DRIVE:
31P06022 DRIVE PULLEY WITH 1.437 BORE
WATER PUMP DELIVERED WITH PULLEY
USE A-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

P.T.O. VOLU-MATIC III

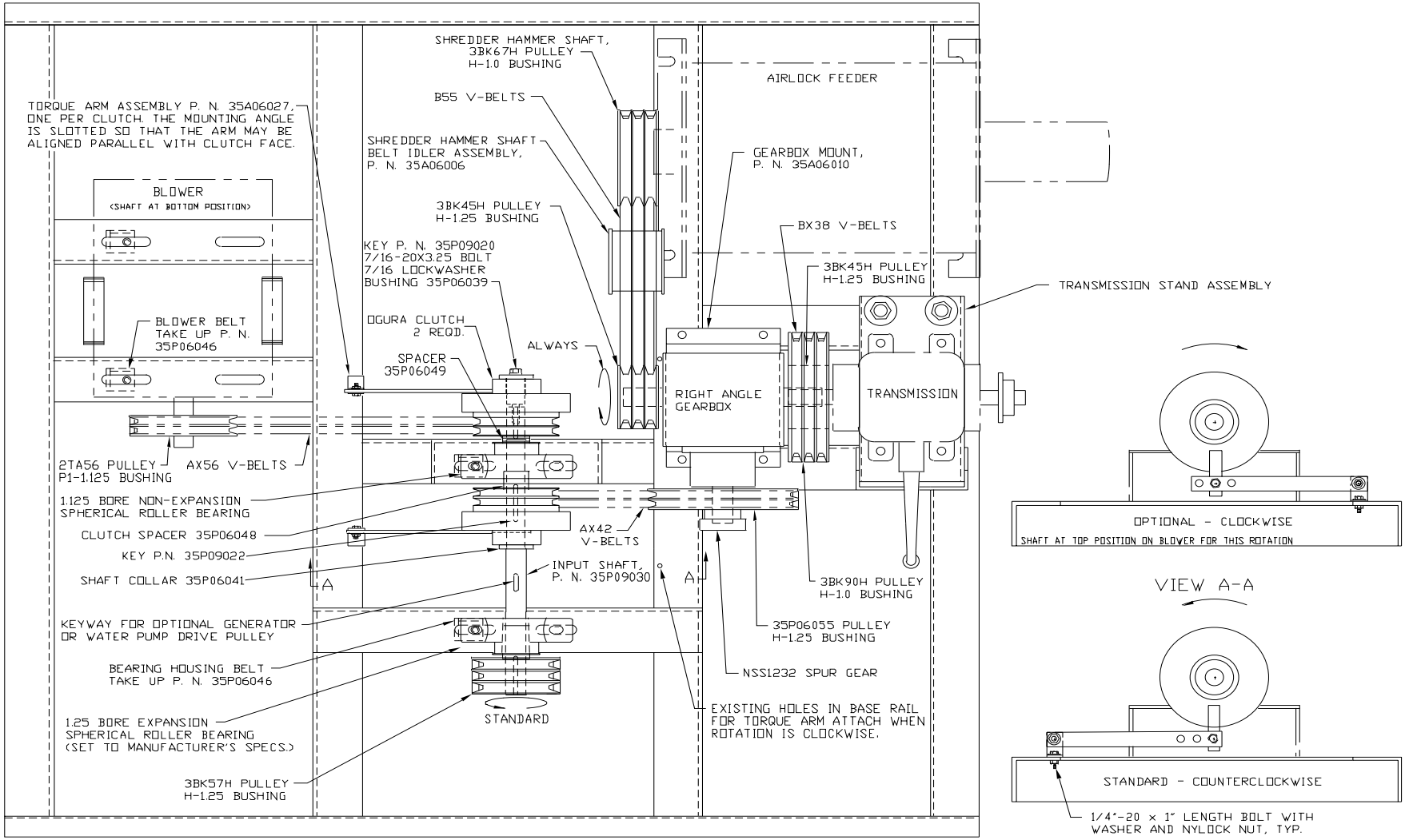
OGURA CLUTCHES WITH 4.62ø PULLEY
DOUBLE LOCK COLLAR "K" STYLE BEARINGS

REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-4
BY JC REDRAWN
DATE 12-03 SCALE 1/4

TITLE DRIVE COMPONENT BASE ASSEMBLY
MATERIAL NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A06024



FOR OPTIONAL GENERATOR DRIVE:
2400 WATT GENERATOR DRIVE PULLEY TB80 WITH A P1-1.500 BUSHING
2400 WATT GENERATOR PULLEY TB42 WITH A P1-.875 BUSHING
USE B-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

FOR OPTIONAL WATER PUMP DRIVE:
35P06028 DRIVE PULLEY WITH 1.500 BORE
WATER PUMP DELIVERED WITH PULLEY
USE A-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

P.T.O. VOLU-MATIC III

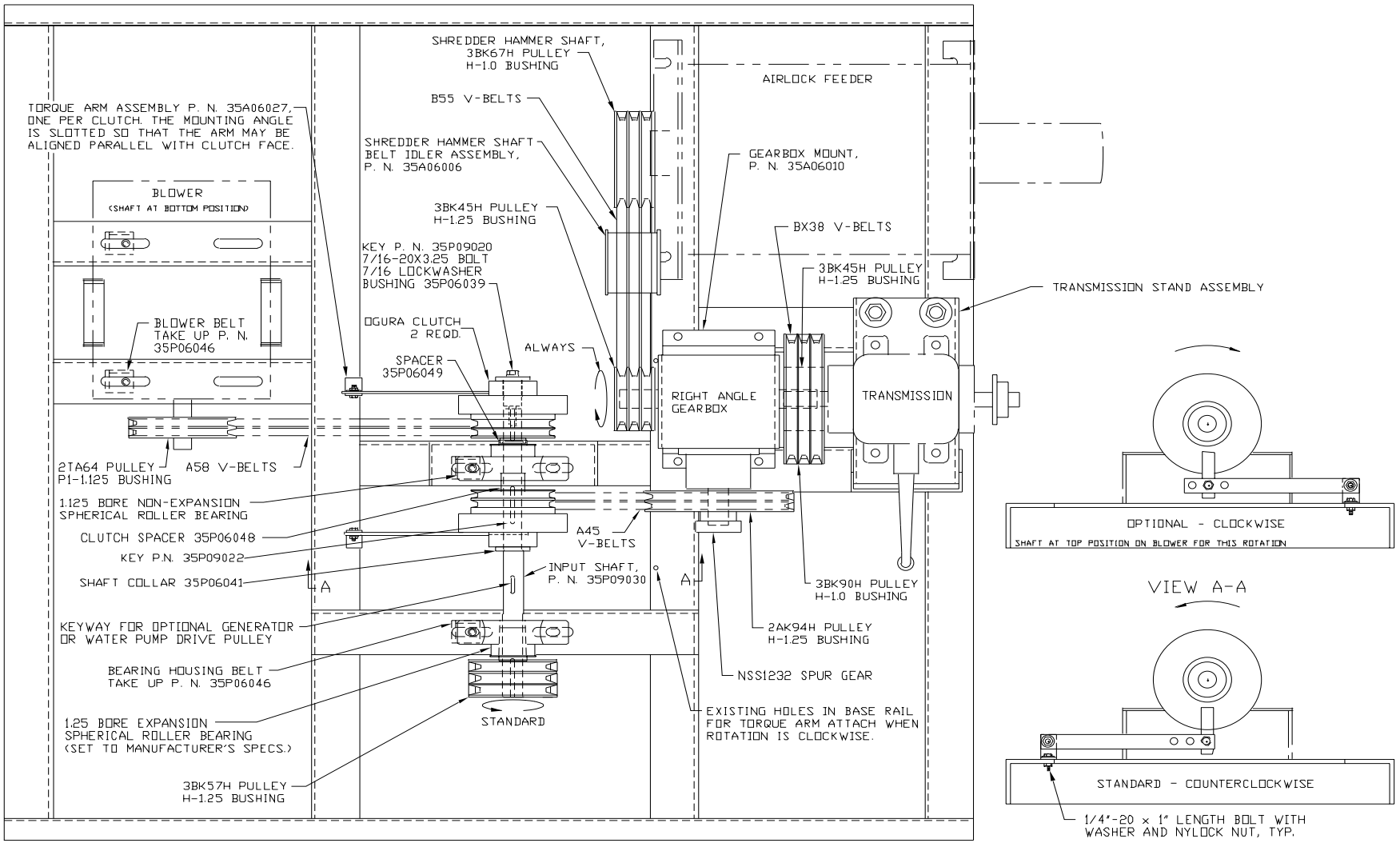
OGURA CLUTCHES WITH 4.62Ø PULLEY TAPER LOCK IMPERIAL BEARINGS

REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-4
BY JC
REDRAWN
DATE 12-03
SCALE 1/4

TITLE DRIVE COMPONENT BASE ASSEMBLY
MATERIAL NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO 35A06024 DRG2



FOR OPTIONAL GENERATOR DRIVE:
2400 WATT GENERATOR DRIVE PULLEY TB80 WITH A P1-1.500 BUSHING
2400 WATT GENERATOR PULLEY TB42 WITH A P1-.875 BUSHING
USE B-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

FOR OPTIONAL WATER PUMP DRIVE:
35P06028 DRIVE PULLEY WITH 1.500 BORE
WATER PUMP DELIVERED WITH PULLEY
USE A-SECTION NU-T-LINK BELTING - 5 FEET REQUIRED

P.T.O. VOLU-MATIC III

OGURA CLUTCHES WITH 5.25ø PULLEY TAPER LOCK IMPERIAL BEARINGS

REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

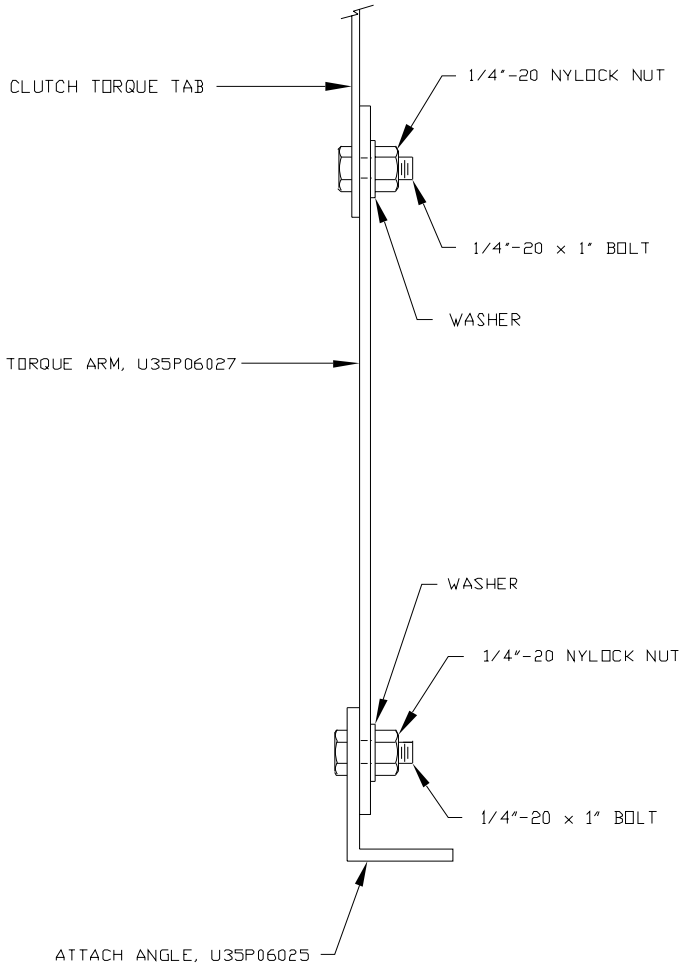
TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-4

BY JC | REDRAWN
DATE 12-03 | SCALE 1/4

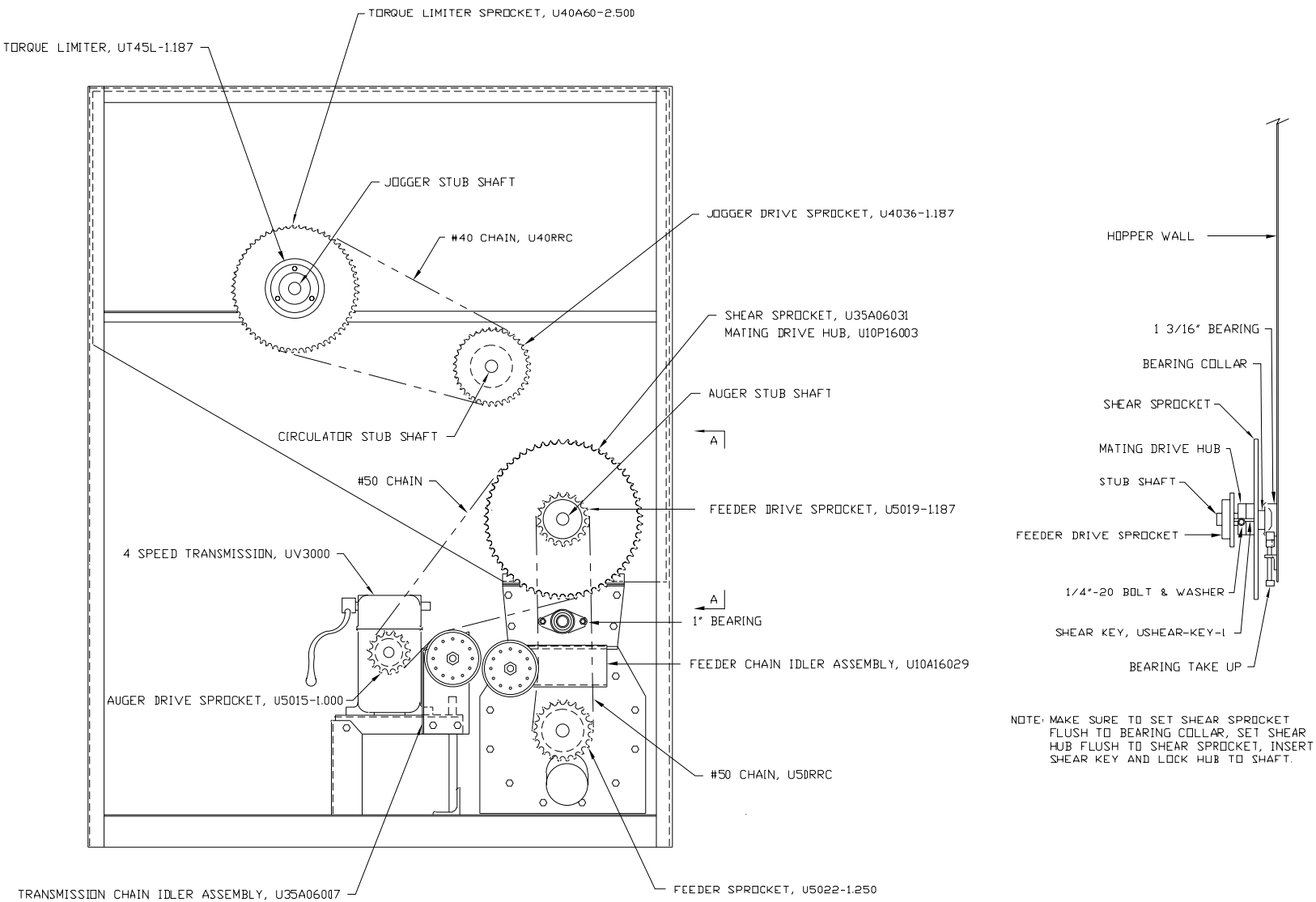
TITLE: DRIVE COMPONENT BASE ASSEMBLY
MATERIAL: NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A06024 ORG1

RECORD OF CHANGES			
REF.	WAS	CHANGED TO	EFF.



TOLERANCE - UNLESS OTHERWISE NOTED ONE PLACE DECIMAL (.x) ±.06 TWO PLACE DECIMAL (.xx) ±.03 THREE PLACE DECIMAL (.xxx) ±.01 ANGLE ±1°	TITLE RUBBER TORQUE ARM ASSEMBLY	 UNISUL WINTER HAVEN, FLORIDA 33880
BY J.R. / CHK.	MATERIAL NOTED	DWG. NO. 35A06027
DATE 1-21-00 / SCALE N.T.S.		



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

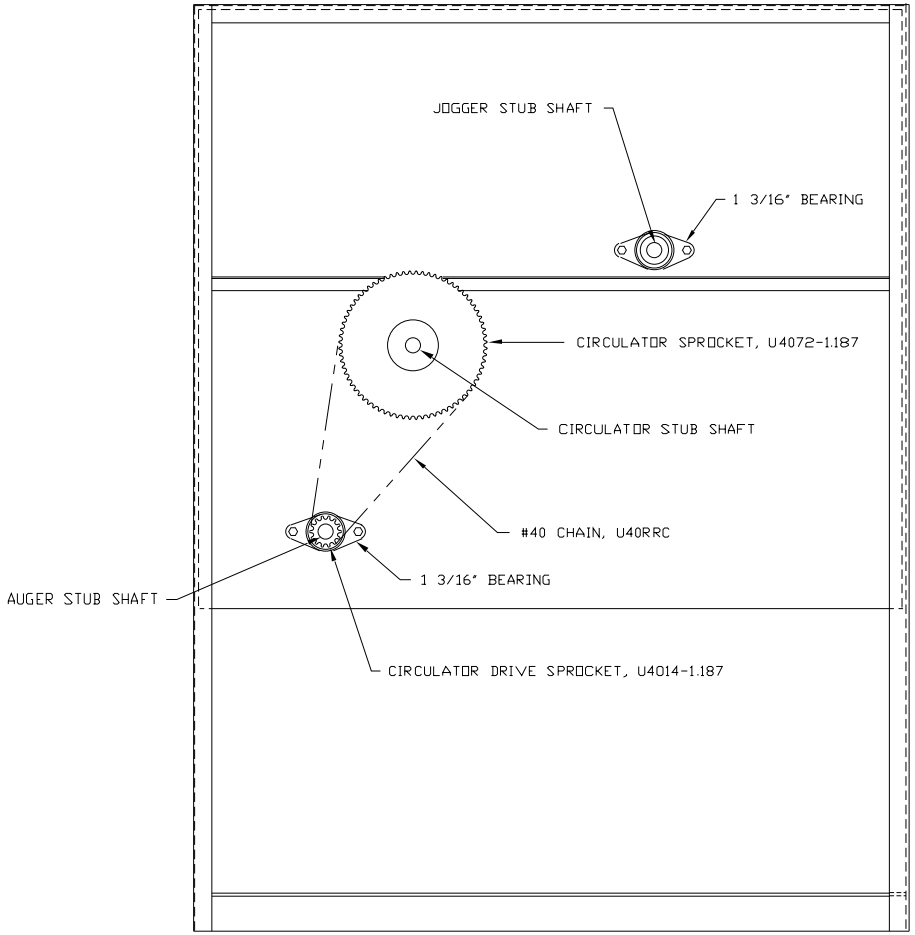
TOLERANCE - UNLESS OTHERWISE NOTED	
ONE PLACE DECIMAL (.x) ±.06	
TWO PLACE DECIMAL (.xx) ±.13	
THREE PLACE DECIMAL (.xxx) ±.01	
ANGLE ±1°	
BY J.R.	CHK.
DATE 8-21-98	SCALE N.T.S.

TITLE
V.M. III CHAIN DRIVE
RIGHT SIDE

MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. 35CHAINR



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

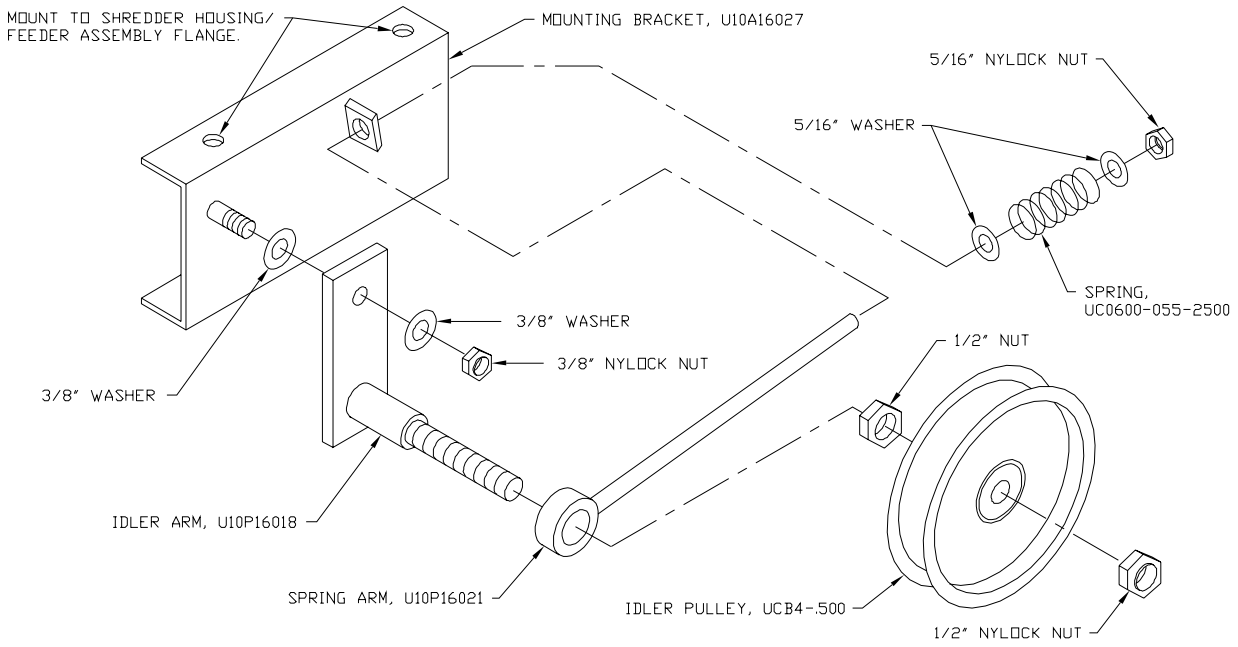
TOLERANCE - UNLESS OTHERWISE NOTED	
ONE PLACE DECIMAL (.x) ±.06	
TWO PLACE DECIMAL (.xx) ±.03	
THREE PLACE DECIMAL (.xxx) ±.01	
ANGLE ±1°	
BY J.R.	CHK.
DATE 8-21-98	SCALE N.T.S.

TITLE
V.M. III CHAIN DRIVE
LEFT SIDE

MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880

DVG NO. 35CHAINL



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

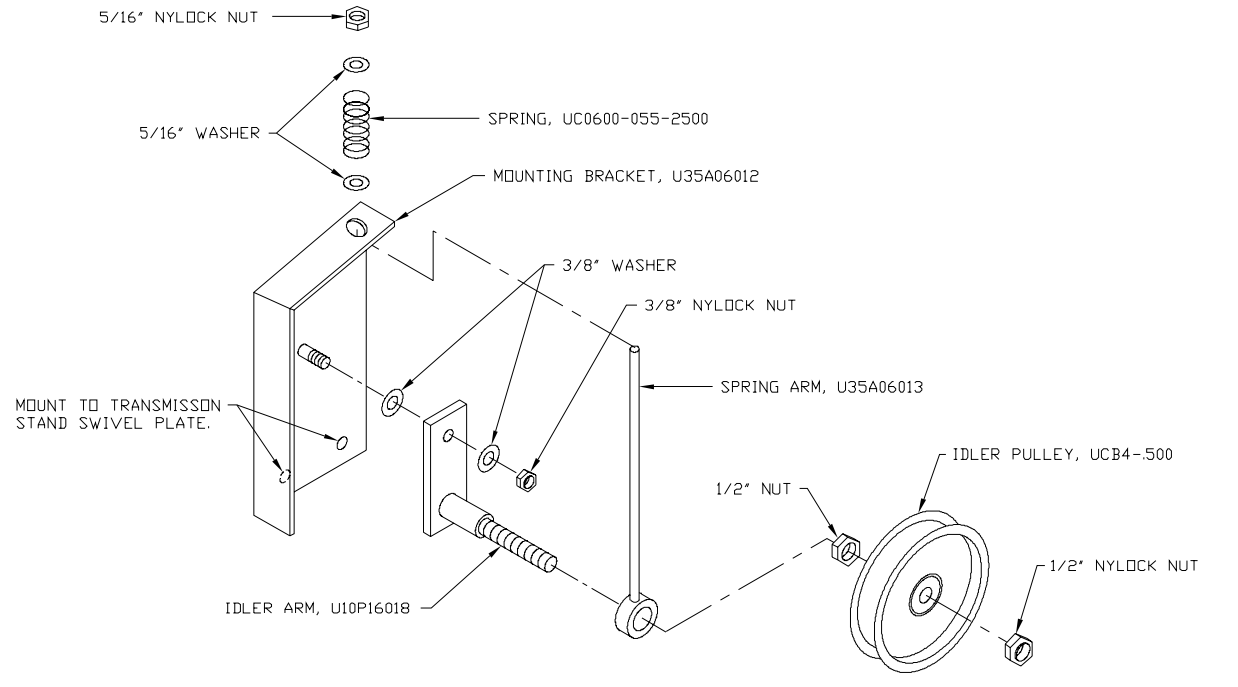
BY J.R. CHK.
DATE 4-8-98 SCALE N.T.S.

TITLE
CHAIN IDLER ASSEMBLY
AUGER TO FEEDER

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. EB-1-2 10A16029



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

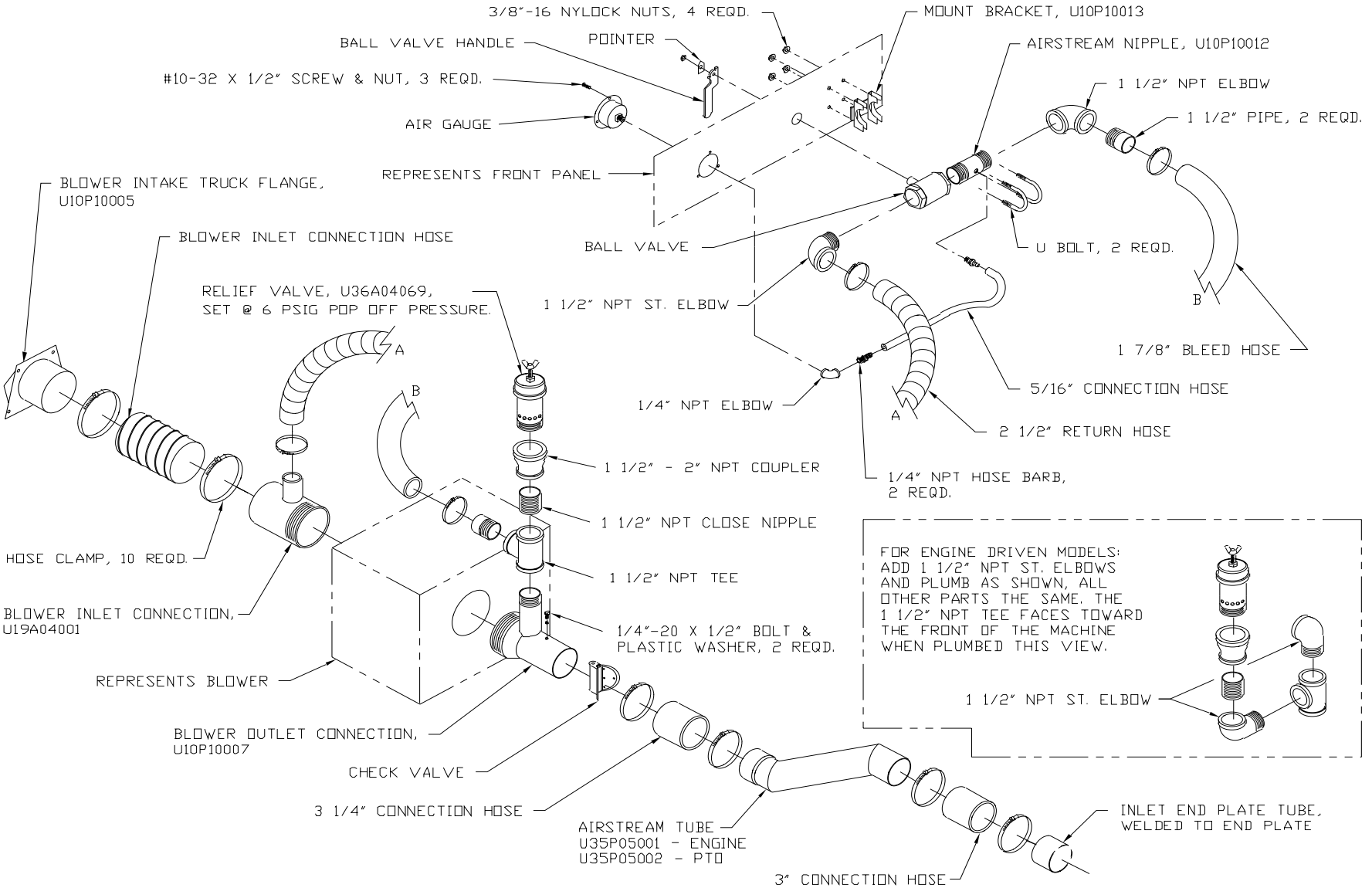
BY J.R. CHK.
DATE 7-17-98 SCALE N.T.S.

TITLE
CHAIN IDLER ASSEMBLY
TRANSMISSION TO AUGER

MATERIAL
NOTED

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. EB-1-3 35A06007

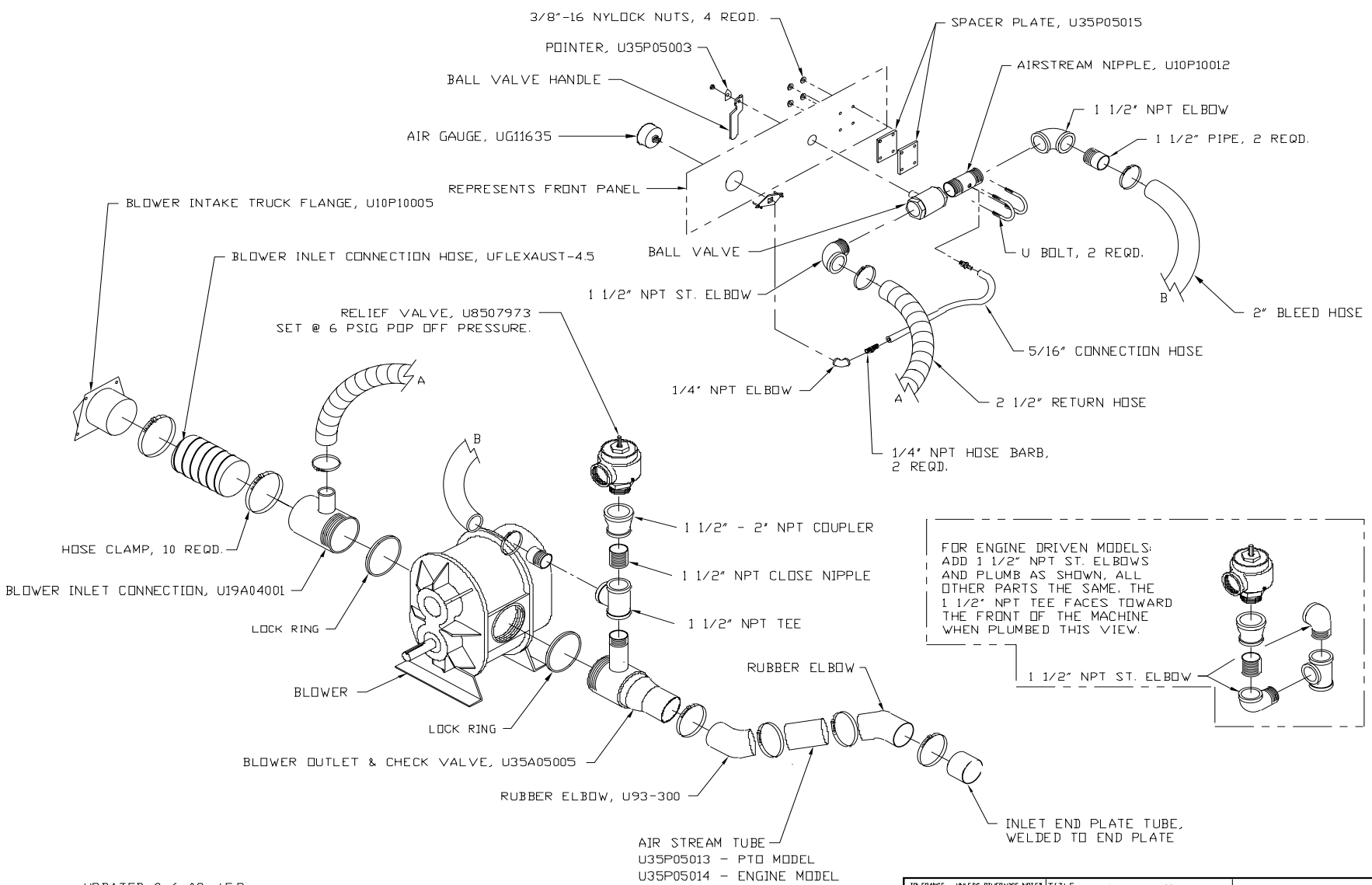


REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1° PROTOTYPE = AC-1-7
BY JC CHK.
DATE 4-13-94 SCALE 1/7

TITLE AIRSTREAM
VOLU-MATIC III
MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A05001



UPDATED 3-6-08 J.E.R.
UPDATED 5-24-06 J.E.R.
UPDATED 8-8-03 J.E.R.

REF.	WAS	CHANGED TO	EFF.

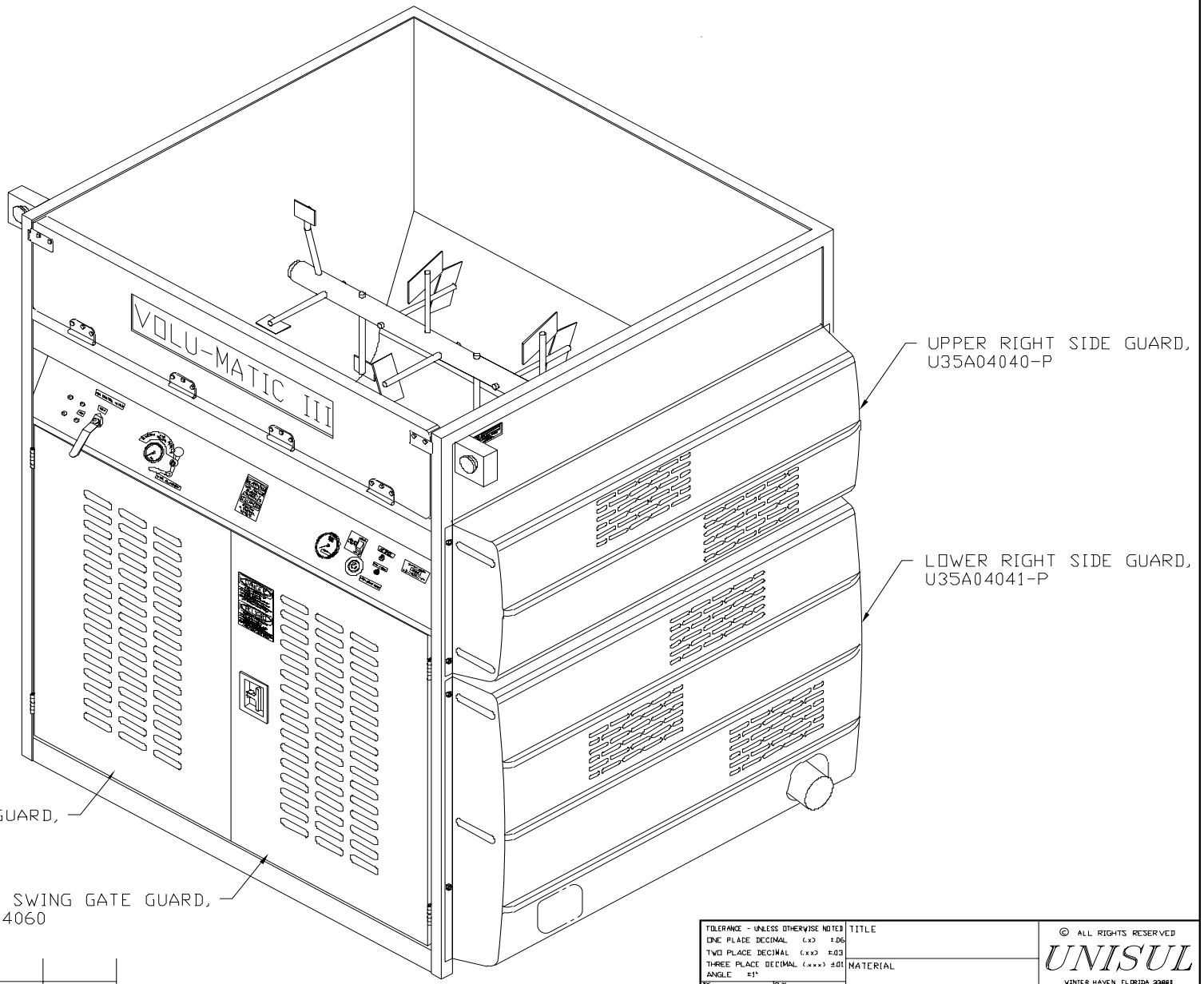
RECORD OF CHANGES

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

BY JC CHK.
DATE 8-8-03 SCALE N.T.S.

TITLE AIR STREAM
VOLU-MATIC III
MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880
DWG NO. 35A05006



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

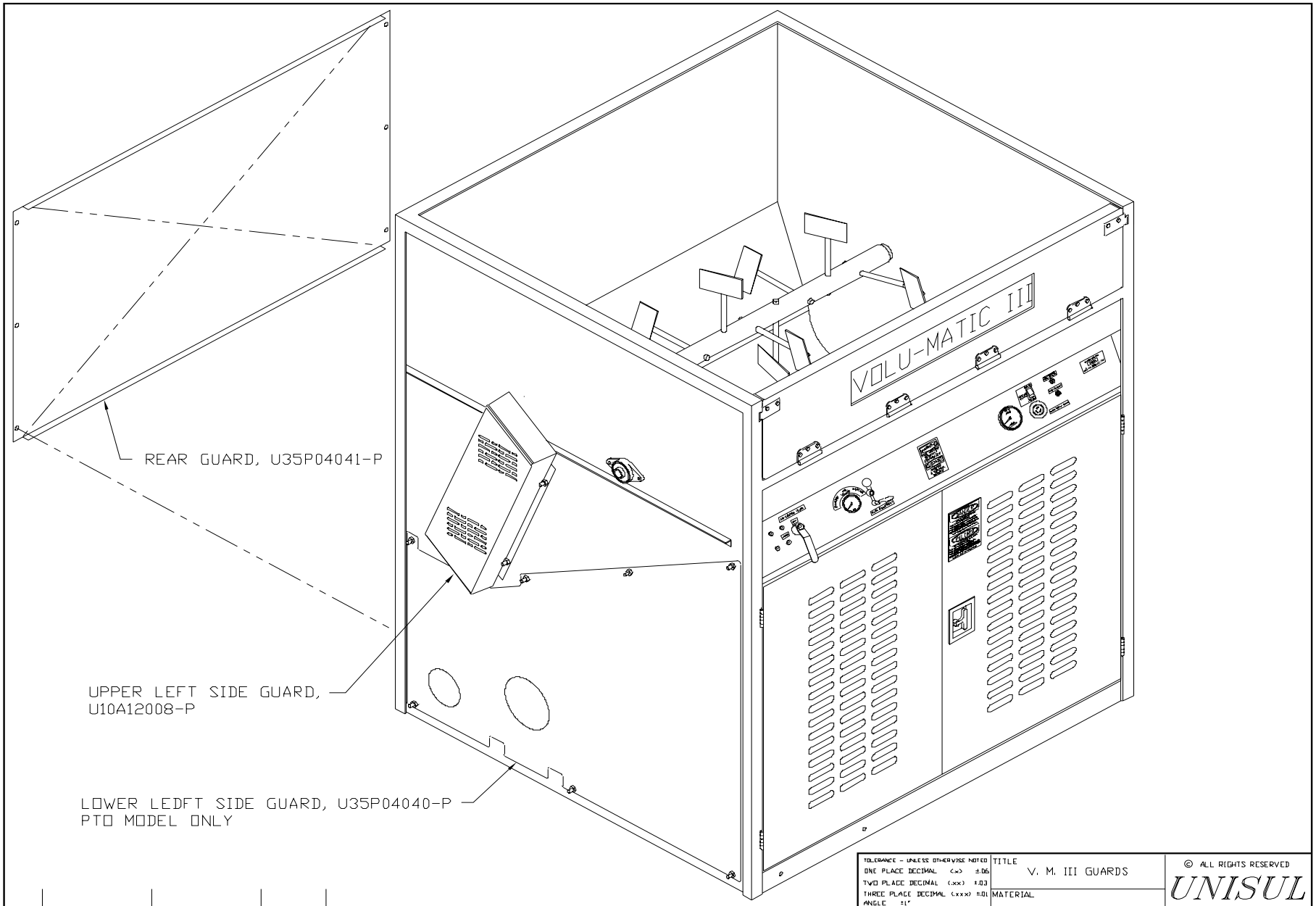
BY J.R. CHK
DATE 8-19-11 SCALE N.T.S.

TITLE

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33881

DWG NO. VM3-024-A
AC-1-B



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

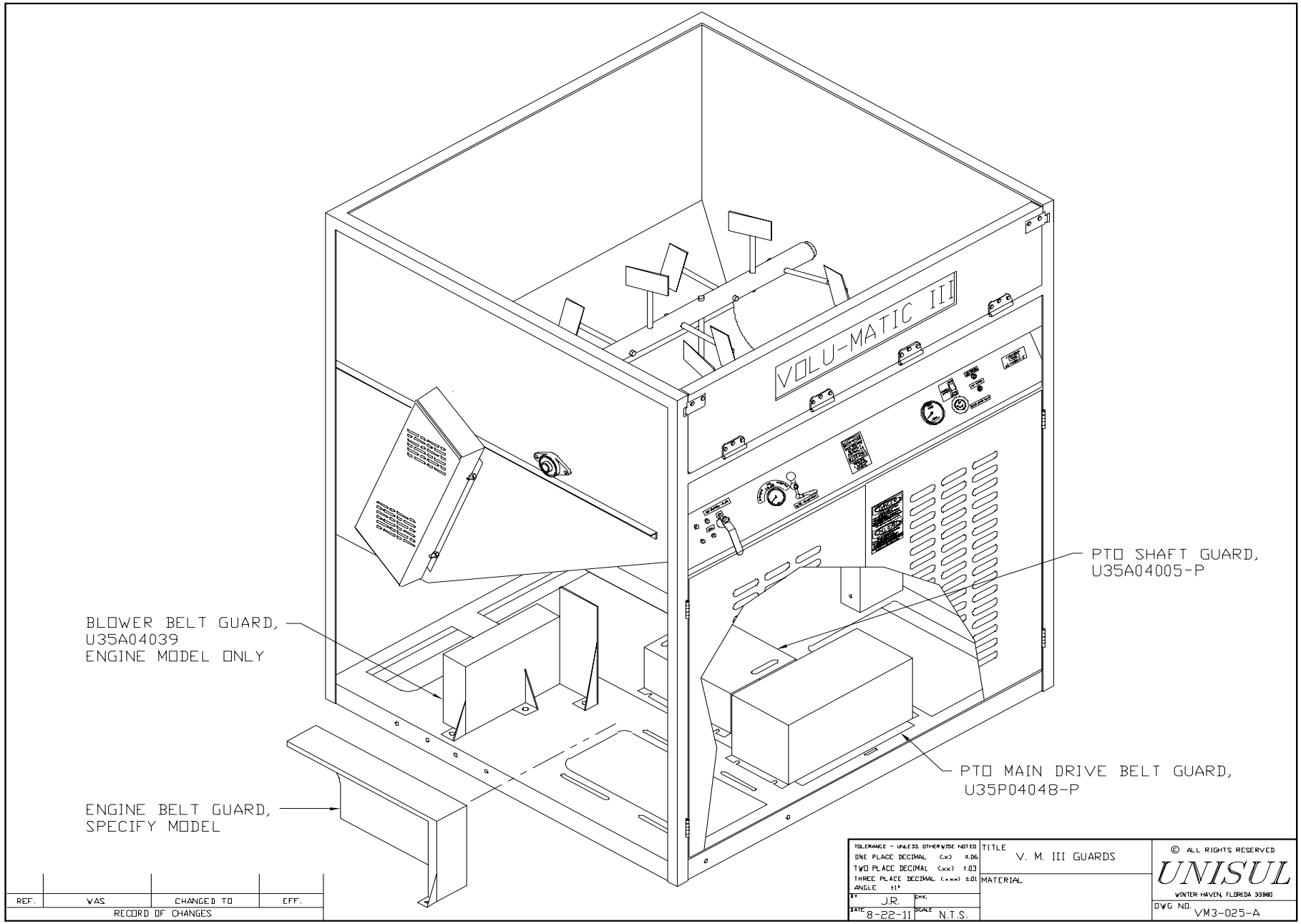
BY J.R. CHK.
DATE 8-19-11 SCALE N.T.S.

TITLE
V. M. III GUARDS

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. VM3-016-A
AC-1-B



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

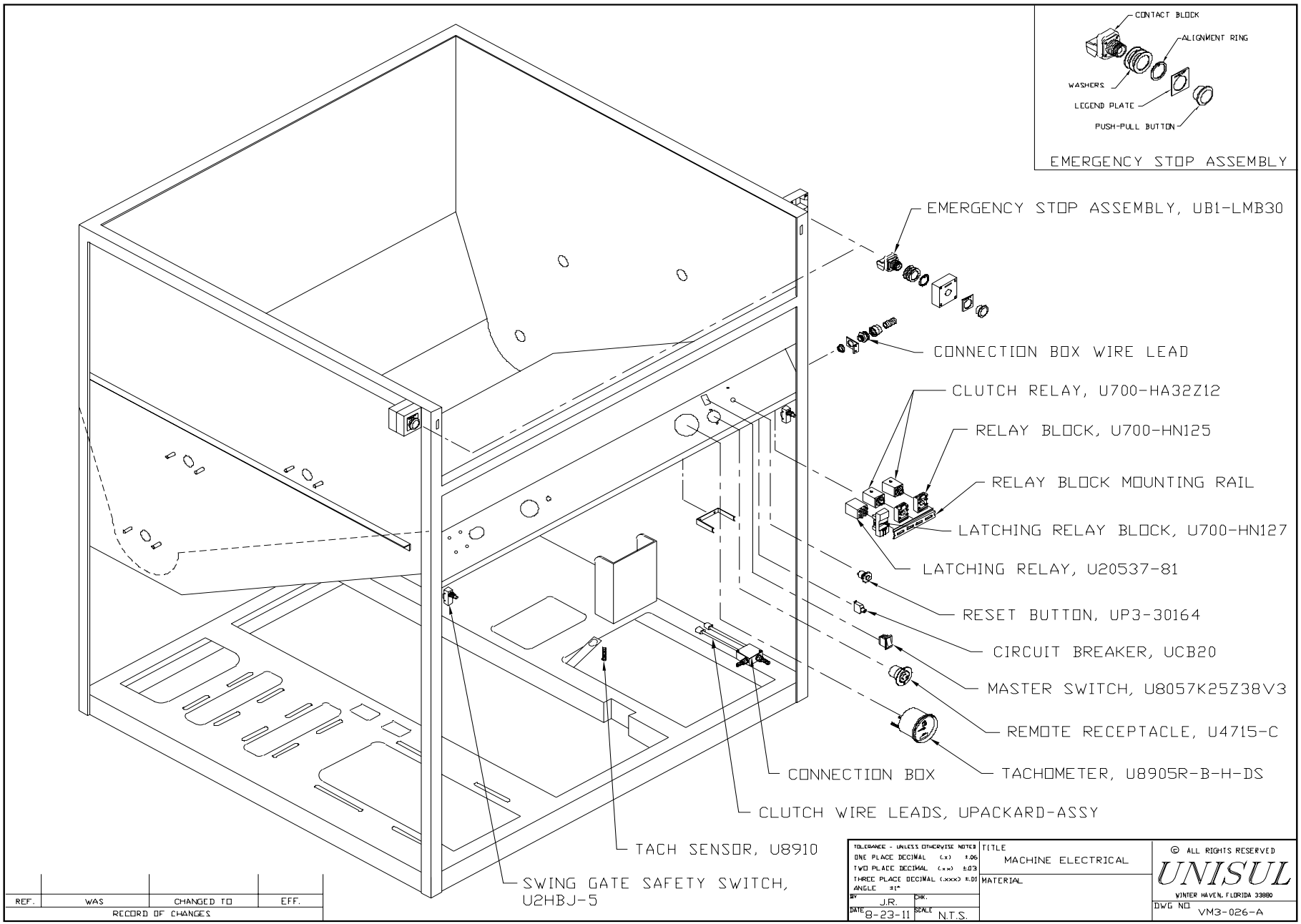
BY J.R. CHK.
DATE 8-22-11 SCALE N.T.S.

TITLE
V. M. III GUARDS

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. VM3-025-A



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

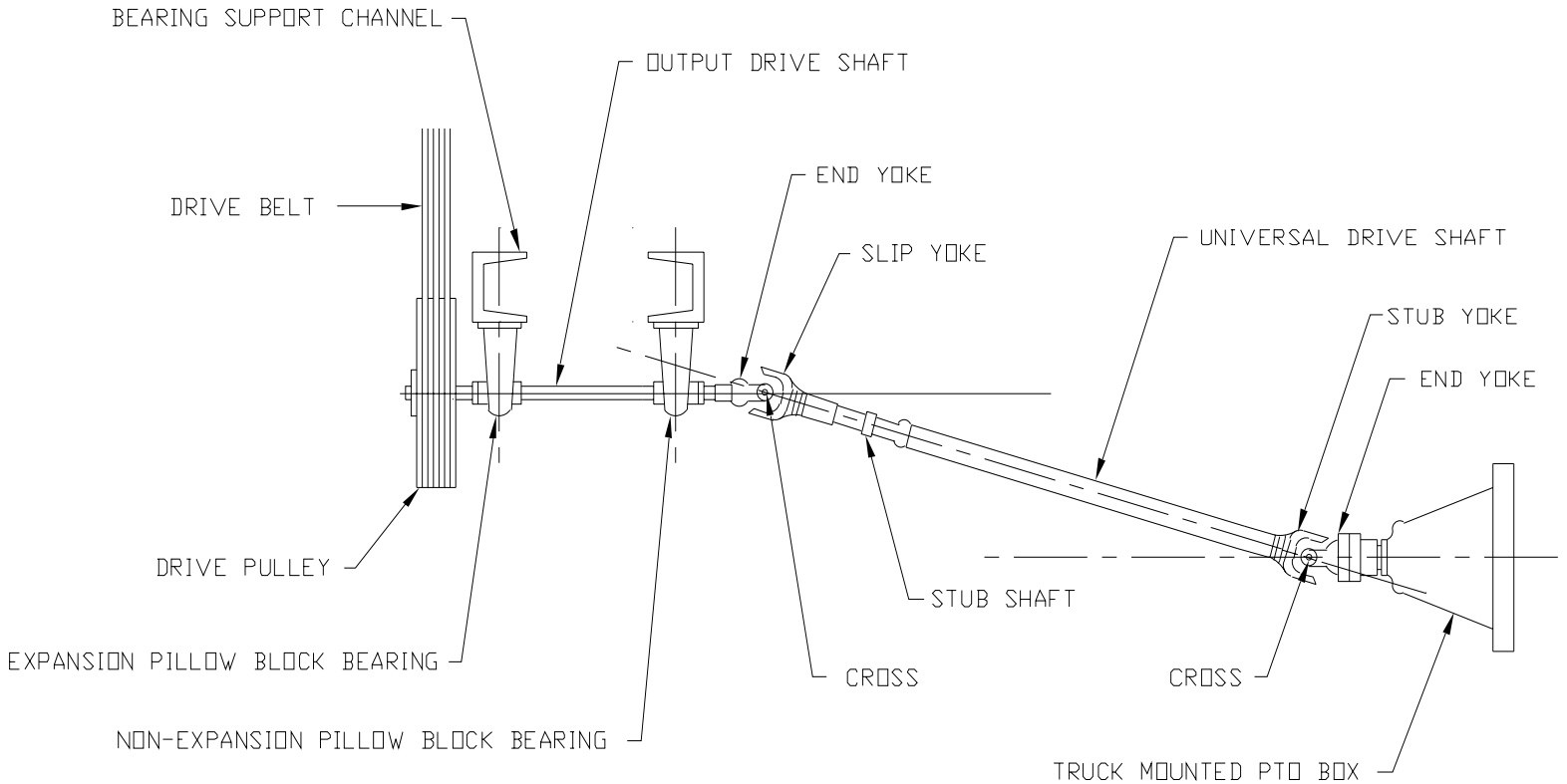
BY J.R. CHK.
DATE 8-23-11 SCALE N.T.S.

TITLE
MACHINE ELECTRICAL

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO VM3-026-A



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

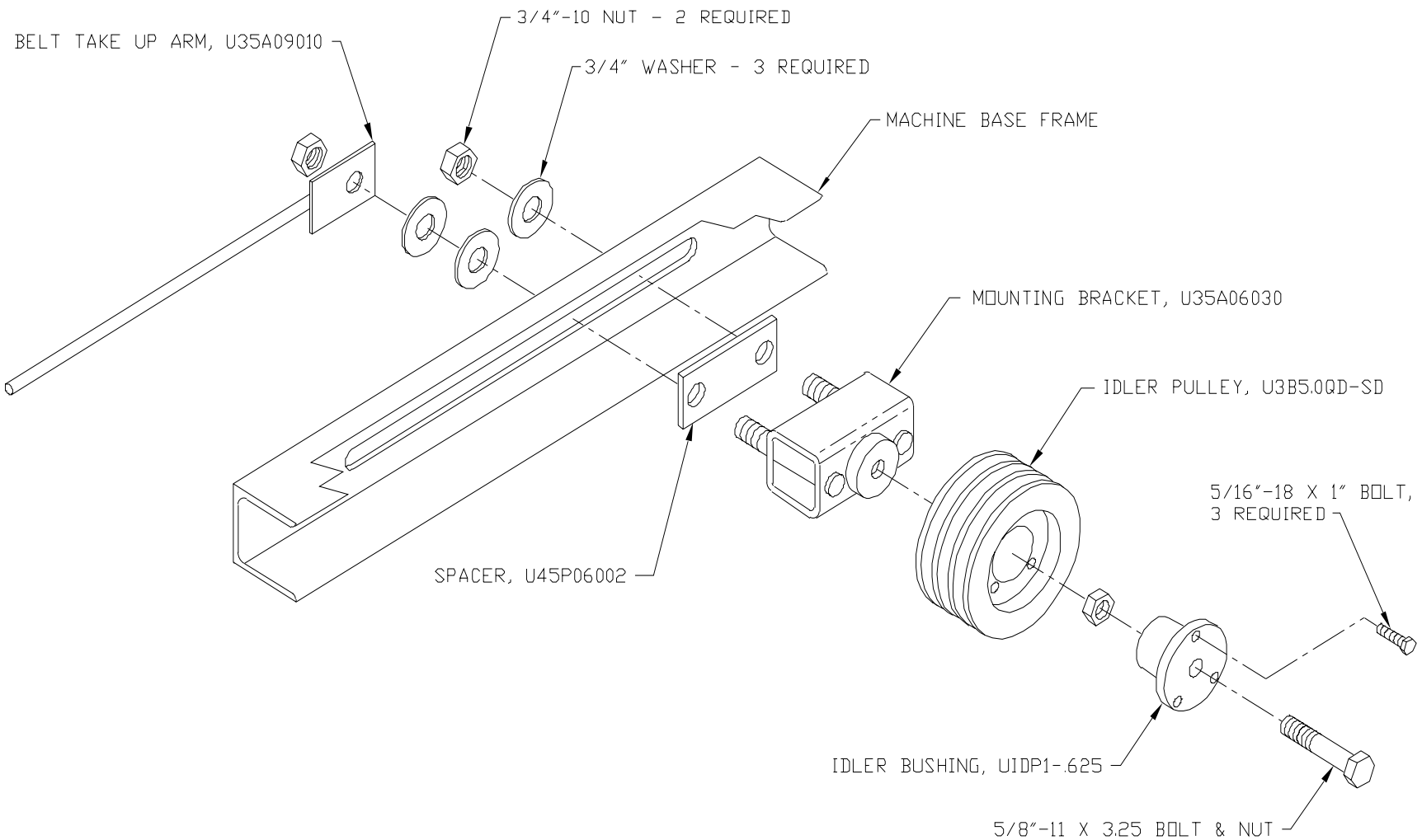
BY J.R. CHK.
DATE 8-21-98 SCALE N.T.S.

TITLE
VOLU-MATIC III
PTO DRIVE TRAIN

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. VM3PTO
EB-1



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

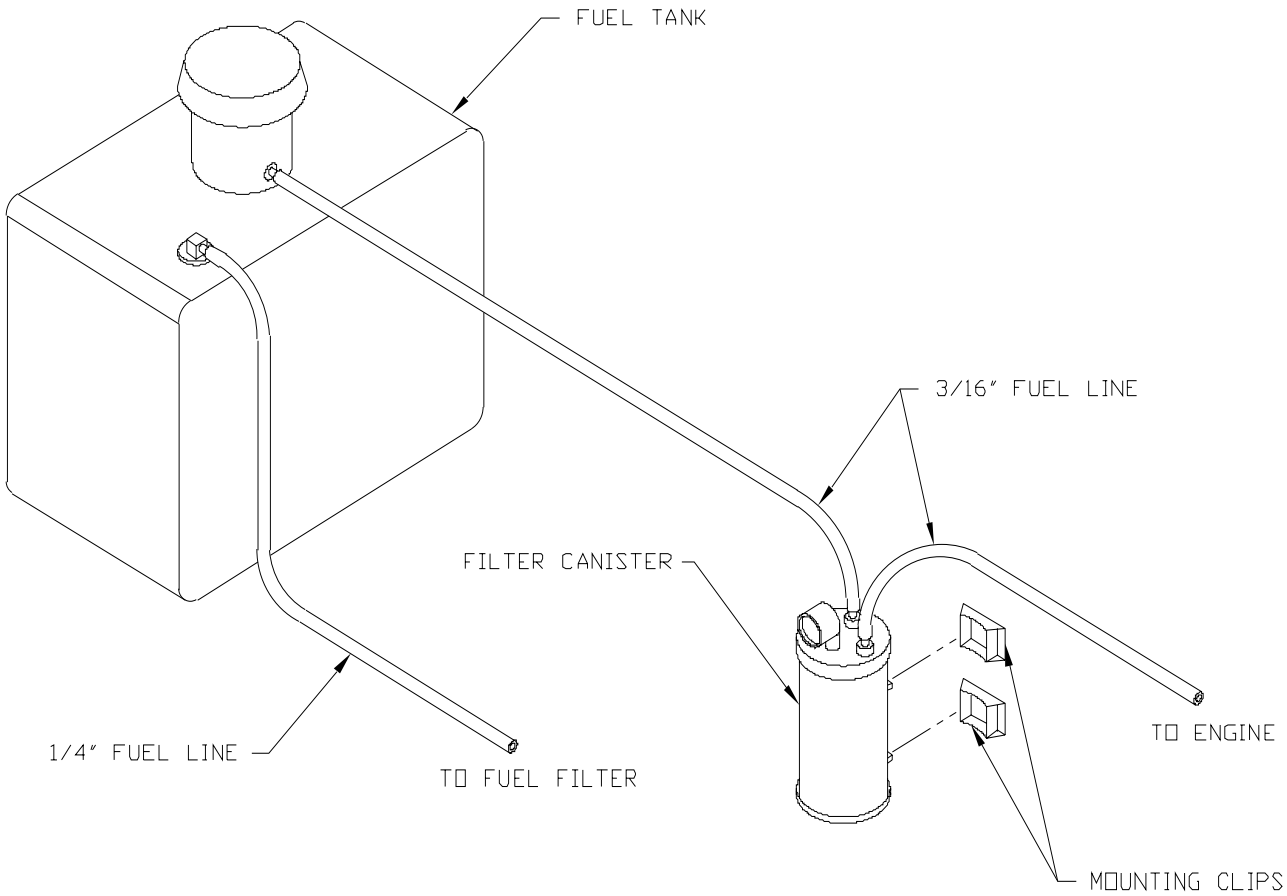
BY J.R. CHK.
DATE 10-14-04 SCALE N.T.S.

TITLE
PTO BELT IDLER
PULLEY ASSEMBLY

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. VM3-027
EB-1-4



REF.	WAS	CHANGED TO	EFF.
RECORD OF CHANGES			

TOLERANCE - UNLESS OTHERWISE NOTED
ONE PLACE DECIMAL (.x) ±.06
TWO PLACE DECIMAL (.xx) ±.03
THREE PLACE DECIMAL (.xxx) ±.01
ANGLE ±1°

BY J.R. CHK.
DATE 9-13-11 SCALE N.T.S.

TITLE
VOLU-MATIC III
GASOLINE FUEL SYSTEM

MATERIAL

UNISUL
WINTER HAVEN, FLORIDA 33880

DWG NO. V3 FUEL TANK

PREVENTIVE MAINTENANCE RECORD

DATE	JOB DESCRIPTION	PERFORMED BY

PREVENTIVE MAINTENANCE RECORD

DATE	JOB DESCRIPTION	PERFORMED BY

THE INFORMATION FOLLOWING THIS PAGE SHOULD BE REFERRED TO FOR ANY OPTIONAL EQUIPMENT INSTALLED ON THE VOLU-MATIC™ III MACHINE. MANUFACTURER'S LITERATURE FOR COMPONENTS INSTALLED ON THE MACHINE ARE ALSO INCLUDED.

OPTIONAL EQUIPMENT THAT MAY BE INSTALLED BUT NOT LIMITED TO:

GENERATOR

WATER PUMP

RADIO REMOTE CONTROL

MANUFACTURER'S LITERATURE INCLUDED IN MANUAL:

ENGINE

BLOWER

SPHERICAL ROLLER PILLOW BLOCK BEARING (PTO DRIVE SHAFT & MACHINE INPUT/CLUTCH SHAFT)

CERTAINTEED MACHINE WORKS BLOWING EQUIPMENT LIMITED TWO-YEAR WARRANTY

CertainTeed Machine Works (the Company) warrants to each original purchaser (the Buyer) of its blowing equipment that such products will be free of manufacturing defects for a period of two years from the date of shipment to the Buyer, except that no warranty is made with respect to:

1. Components or accessories manufactured and warranted by others. Warranties for component parts such as engine, blower, gearbox, transmission, ect., if furnished by the manufacturer of the component, are on file at the Company's main office and copies will be furnished with the blowing equipment when sold. In no event shall the Company provide service on any such component.

2. Any defect caused by alteration performed without the express written authorization of the Company.

3. Any machine that has not been operated and/or maintained in accordance with normal industry practice and the written recommendations of the Company, such as a machine operated with an improperly sized, worn or damaged hose.

4. The results of any application or use of the blowing equipment.

This limited warranty does not extend to component parts that need to be replaced on a regular basis due to normal wear and usage, including but not limited to seals, feeder, shredder, auger, fuses, switches, clutches, hoses, shaft seals, chains, belts, sprockets, pulleys, bearings, cables, batteries, etc.

The Company's obligation under this warranty is limited to repairing or replacing (at its option) any part that is determined by the Company to be suffering from a manufacturing defect. The Company or an authorized repair facility will provide any required parts and labor to the Buyer. If the equipment must be returned to the Company for repair, all transportation costs shall be the Buyer's responsibility.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEES AND/OR WARRANTIES, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. THE COMPANY SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR ECONOMIC LOSS, INCLUDING DAMAGES TO ANY BUILDING OR ITS CONTENTS, OR INJURY TO ANY PERSONS THEREIN, LOSS OF PROFITS, REVENUE, OR LOSS OF EQUIPMENT USE, EVEN IF THE COMPANY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSS, OR FOR ANY CLAIM AGAINST THE BUYER BY ANY OTHER PARTY.

This warranty is not transferable.

Any claimed defect for which the Company does not receive notice within the two-year warranty period is not covered by this warranty.

CertainTeed

Saint Gobain

Machine Works

101 HATFIELD ROAD WINTER HAVEN, FLORIDA 33880-1325
PHONE: 863-294-3206 SALES: 800-237-7841 FAX: 863-294-6771
WEBSITE: www.certainteed.com/unisul E-MAIL: unisul@unisul.com