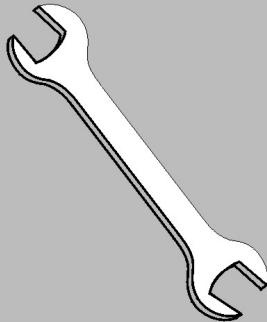


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# Kit Instruction— KHASTMSJ01



# Please Read

## About the Manual Identifying Information on the Cover

The front cover displays pertinent identifying information for this manual. Most important, are the published manual number (part number) /ECN (date code). Generally, when a replacement manual is furnished, it will have the same published manual number, but the latest available ECN. This provides the user with the latest information applicable to his machine. Similarly all documents comprising the manual will be the latest available as of the date the manual was printed, **even though older ECN dates for those documents may be listed in the table of contents.**

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## References to Yellow Troubleshooting Pages

This manual may contain references to "yellow pages." Although the pages containing troubleshooting procedures are no longer printed on yellow paper, troubleshooting instructions, if any, will be contained in the easily located "Troubleshooting" chapter or section. See the table of contents.

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## Comments and Suggestions

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Pellerin Milnor Corporation  
Attn: Technical Publications  
P. O. Box 400  
Kenner, LA 70063-0400

Fax: (504) 469-1849

## **ADDING STEAM and/or TEMPERATURE CONTROLS TO 300xx MxJ & SxJ**

### **Required Tools**

- 1) Basic hand tools - Screwdrivers, Wrenches 3/8" to 3/4", Sockets, Ratchet, etc.
- 2) 3/8" Drill and assorted drill bits.
- 3) Hole cutters 1", 3", 5.25"
- 4) Tig welding equipment and shielding gas for Stainless steel 304

### **Preparation**

- 1) Remove power from machine.
- 2) Remove top cover and belt guard.
- 3) Turn off and disconnect the water supplies.
- 4) Remove fill hose and nipple from shell bung.
- 5) Remove the shell front and door assembly.
- 6) Remove the cylinder (basket).
- 7) Remove the Shell
- 8) Remove the standard snubber board.
- 9) Remove the processor board.

### **Modification of Shell and Console**

- 1) Mark and cut hole in front console for access plate as per drawing (3020M5AB/94042D) right side #2. This hole is to be 5.25" in diameter, 8.5" to C/L from front edge and 7" from top of console.
- 2) Mark and cut a hole in the shell side to accept the steam elbow. This elbow must be welded to the shell below the water line, see drawing BMP920021/93251V.
- 3) Starting at the rear of the console drill a 1" hole 18.75" from bottom and 3.5" from outside edge, see drawing BD3022M5AB/94042D.
- 4) Mark and drill 3" hole in rear of front console 18.75 from bottom and 3.25 from inside edge. This hole will accept the Steam pipe weldment, part # W2 03609, and will be attached using the four mounting holes provided in the weldment.

**Reassembly - Mechanical**

- 1) Connect all plumbing for the steam connection and reinstall the shell making final steam line connection from Steam pipe weldment, item #4(BMP920021), to steam elbow, item #1 using 2.5"i.d. X10" long hose, item #3.
- 2) Install cover plate to right side of console.
- 3) Reinstall basket and shell front.

**Installation - Electrical**

- 1) Install the A/D Board to the processor board using the four(4) nylon screws, spacers and nuts provided with the board. Connect the ribbon cable from the A/D board to the processor board, observing the pin numbering, the stripe on the ribbon indicates pin one (1). Reinstall the processor / A-D board.
- 2) Install the wiring harness provided with the auxiliary output board. This harness must follow existing wiring and be secured with tie wraps. Install with the MTA-9 connection to the upper left edge of the processor board.
- 3) Install the 10-pin plug marked MTA-9 to the processor board. The other end is MTA-29, and is connected to the matching connector on the auxiliary output board. There are two additional MTA connectors, MTA-30 and MA-31. These are to be attached to the auxiliary snubber board MTA-30 and MTA-31 respectively.
- 4) Position, mark and drill as required to mount the bracket for the snubber, auxiliary snubber and output boards. Install these boards to the bracket and mount the bracket to control panel.
- 5) Install the temperature probe to the special -tee attached to the sump fill line. Wire the probe to the A/D board input, pins 1&2.
- 6) Connect 2MTA30-1 to MTA24-1 wire 011, 2MTA30-2 to the steam valve "A" side of coil, and the "B" side will be connected to wire 006, MTA32-8.
- 7) Reestablish power and water connections.

**Testing**

- 1) Power up machine, allow warm up time delay.
- 2) Insert the program key and turn to program. Scroll to menu 2 - CONFIGURE. Select the following decisions;
 

A) TEMP CONTROL? 0=NO 1=YES	Set to 1
B) TEMP UNITS ? 0=F 1=C	Set for desired range
C) STEAM ERROR 0= NO STEAM	Set for 2
1=5 MINUTES	
2=10 MINUTES	
3=20 MINUTES	

Using the NEXT key to accept the settings. When display reads ” PROGRAM 0 MENU / OK TURN KEY TO RUN” turn the key and press the NEXT button. This will return you to normal operation.
- 3) Insert the key into the TEST/AUTOMATIC switch and turn to TEST, this will enter the test mode. The display will show “MANUAL MENU / 1 SOFTWARE DATE CODE. Press the scroll button to advance to “MANUAL MENU 3 / TEST OUTPUTS . Select output 20, press the START button twice, 1 to select the output , 2 to turn the output on. Check the steam valve for operation. Depress the start button again to turn the output off.
- 4) Return the key to automatic and press next display will read “RUN FORMULA / 00 OK TO POWER OFF” At this point you will need to adjust the formulas to accept steam and temperature.

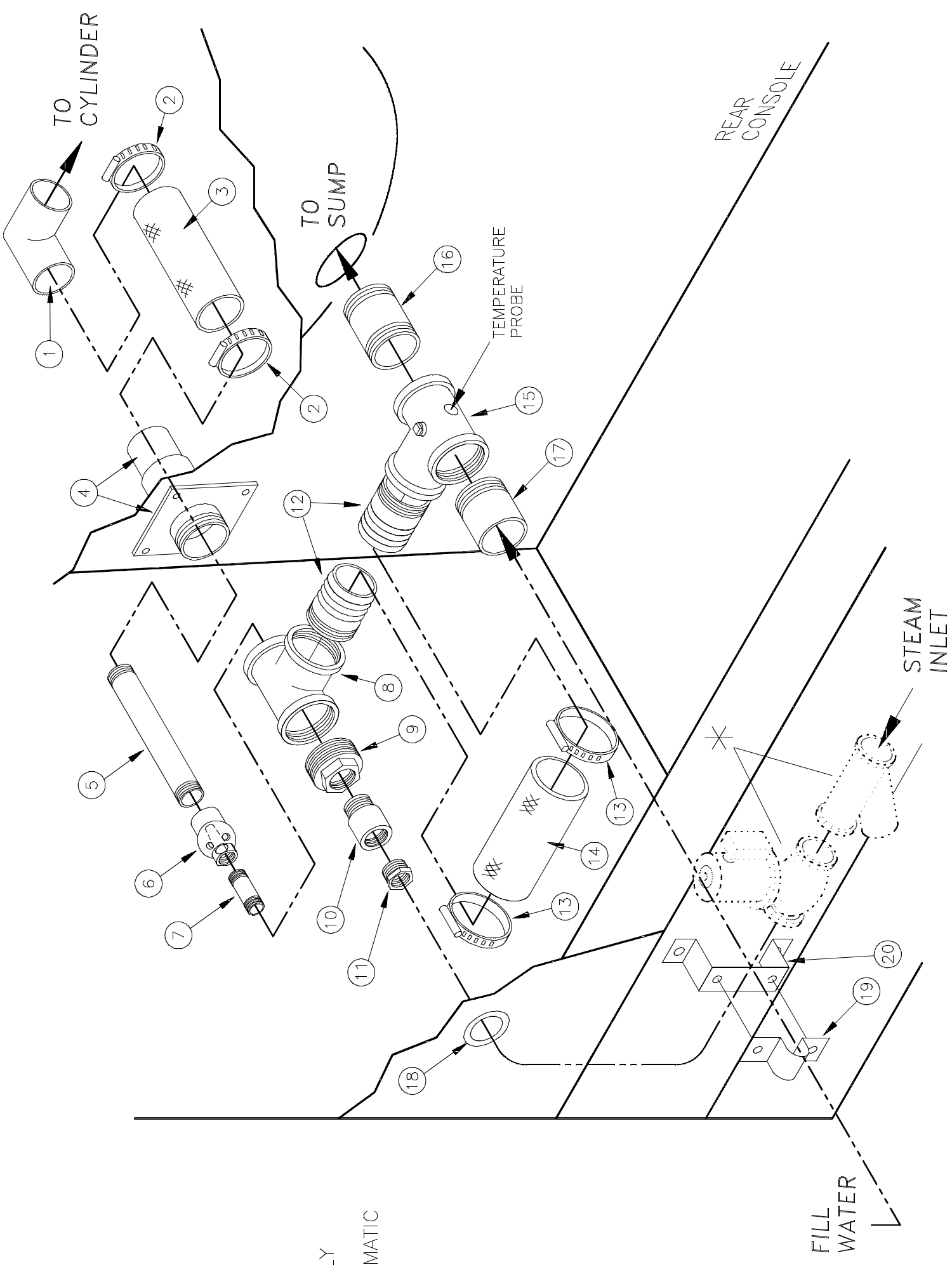


**DRAWING**

(See other page for parts list,  
 if applicable.)

**STEAM INSTALLATION**  
**30015, 30020 & 30022 RIGID MOUNT WASHER-EXTRACTORS**

**BMP920021/93251V (Page 1)**



\* FOR STEAM INLET ASSEMBLY  
 REPAIR PARTS - SEE  
 WATER/STEAM/DRAIN SCHEMATIC  
 BMP920015.

**PARTS LIST**

(See other page for drawing.)

**STEAM INSTALLATION  
30015, 30020 & 30022 RIGID MOUNT WASHER-EXTRACTORS**

**BMP920021/93251V (Page 2)**

ITEM	PART NUMBER	DESCRIPTION	HOW PART IS USED IN ASSEMBLY (Only if pertinent)
00A	AD 33 028B	90482@*STM INLET ASSY=N4S 3020 120V	REFERENCE 30020M5P/M7P
00B	AD 33 028C	90482@*STM INLET ASSY=N4S 3015 120V	REFERENCE 30015M4P/M6P
00C	AD 33 028D	90482@ STEAM INLET ASSY 3020 240V	REFERENCE 30020M5J/M7J
00D	AD 33 028E	90482@ STM INLET ASSY= 3015 240V	REFERENCE 30015M4J/M6J
00E	A33 10500	77427Q* STEAM INJECTOR ASSY C4/C6M	00B,00D(CONTAINS 004-012)
00F	A33 10500A	77427Q*STEAM INJECTOR ASSY C5M	00A,00C(CONTAINS 004-012)
00G	A33 10600	77427M*TEE ASSY-STEAM 2 MOTOMETER	00A-00D(CONTAINS 015-017)
00H	A33 10600A	77427M*TEE ASSY-STEAM 3 MOTOMETER	00A-00D(CONTAINS 015-017)
00J	A33 10700A	90482#\$STEAM INLET ASSY 120V/60C+	00A,00B
00K	A33 10700B	90482# STEAM INLET ASSY 240V/50/60	00C,00D
001	W2 03608	92042B* STEAM ELBOW=C4M+C6M ONLY	
002	27A075	T-BOLT HOSECLAMP 2.75"-3.06"	
003	60E301A10A	HOSE= *2.5"ID PE X10"	
004	W2 03609	74488B* STEAMPIPE WLMT=3015CWM L=9"	
005	51LQ1AG07A	NIPPLE PIPE 1 X 7 GALSTL	00E,00F
006	27A500	STEAM HEATER 3/4" BRZ. PENB.#NWH	00E,00F
007	51LQ0PG03A	NIPPLE PIPE 3/4 X 3 GALSTL	00E,00F
008	51V108C	TEE PIPE 2+1/2X2+1/2X2 GALMAL 150#	00E,00F
009	51A059	HEXPIPBUSH 2+1/2X1 GAL 125#CI	00E,00F
010	51E037	01Z COUP 3/4"F W/1" M NPTONOD 304S	00E,00F
011	51A032	HEXPIPBUSH 3/4X1/2 GAL 150#	00E,00F
012	02 15847C	85426B ADAPTER,CARBSTL2-1/2HOSX2NPT	00E,00F
013	27A075	T-BOLT HOSECLAMP 2.75"-3.06"	
014	60E301A10A	HOSE= *2.5"ID PE X10"	
015A	02 03657	77406A SPECIAL-TEE=2HOLES=STEAM CWM	00G
015B	02 03657A	77406# SPECIAL-TEE=3HOLES=STEAM CWM	00H
016	51LQ2AD02M	05Z 2 X2+5/8" STD TOE NON-STD	00G,00H
017	02 03447	91247B FILL TUBE NIPPLE (2X3TOE)GAL	00G,00H
018	12P11ESB	SNAPBUSH 1.25MH X.94 T=1/8SB1250-15	00A-00D
019	12K077	STRAP 1/2"HVYCONDUIT 2HOLE VICTR23S	
020	02 14170	89526B SUPPORT=PIPE SUPPLEMNT STEAM ***** END OF PARTS LIST *****	

**How to Read Parts List**

**Reference Item Numbers**—Items 00A, 00B, 00C, etc., or 00X, 00Y, 00Z, etc., appearing at the top of some parts lists, are for reference and provide:

1. The part number for the entire assembly depicted in the drawing or a major sub-assembly thereof, and/or
  2. The range of machine models this drawing applies to.
- If more than one reference item appears, this usually means this drawing applies to more than one assembly (and thus to more than one range of machines).

**Component Item Numbers**—For any item on the drawing (e.g., item ①), there may be several corresponding items on the parts list (e.g., 001A, 001B, 001C, etc.) which are similar components on different assemblies. "How Part Is Used In Assembly" identifies which components apply to your machine, by listing either the machine model, or the reference item number from the top of the parts list (e.g., 00A, 00B, 00C, etc.), or a particular characteristic (e.g., bronze or stainless steel), or special ordering information, such as a repair kit number.







**PARTS LIST**

(See other page for drawing.)

**CYLINDER + SHELL + BEARING + CONSOLE INSTALLATION  
 30015, 30020 & 30022 RIGID MOUNT WASHER-EXTRACTORS**

**BMP910037/93251V (Page 2)**

ITEM	PART NUMBER	DESCRIPTION	HOW PART IS USED IN ASSEMBLY (Only if pertinent)	ITEM	PART NUMBER	DESCRIPTION	HOW PART IS USED IN ASSEMBLY (Only if pertinent)
00A	ACA02CWE	91431C* CYL ASSY=3015CWE/NMA/C4M/OE	30015C4A,M4X,C4T,K5X,S5X	012	02 03444	79381M RING=SHELL BACK CLAMP	30015 ONLY
00B	ACA33C6M	91431C* CYL ASSY=3015C6M	30015M6X	013A	02 03446	93123A1 GASKET=SHELLBACK CLAMP RING	30015 ONLY
00C	ACA33C5M	91386C* CYL ASSY=3020C5M	30020M4A,C4A,M5X	013B	02 03575	93123A GASKET=SHELLBACK CLAMP RING=CWM	30020+30022 MODELS ONLY
00D	ACA3020M7	92161C*CYL ASSY=3020 M7J/G/P	30020M7X	014	02 03574	92601B GASKET=MAIN BEARINGHOUSE=CWM	30020+30022 MODELS ONLY
00E	ACA3022M5	93000Z CYL ASSY=3022 M5/C/K/S	30022M4X,M5X,K5X,C5X	015	02 03568	90127D PLATE-BG HOUSING REINFORCING	30020+30022 MODELS ONLY
00F	ASH33023	91396Z SHELL+CONSOLE 3015M4A	30015M4A,M4T	016A	02 03574	92601B GASKET=MAIN BEARINGHOUSE=CWM	30020+30022 MODELS ONLY
00G	ASH33008	90387E SHELL+CONSOLE 3015C4-MICRO	30015C4A,C4T	016B	02 03335	92601B GASKET BEARING HOUSING CWE	30015 MODELS ONLY
00H	ASH33015	89000Z SHELL+CONSOLE 3015M4	30015M4G,M4J,M4P	017	02 03749	84442B BAR=REINF STRIP 3015	30015 MODELS ONLY
00I	ASH33007	88000Z SHELL+CONSOLE 3015 M6-MICRO	30015M6A,M6G,M6J,M6P,M6T	018	02 03560	70093A TAPSTRIP=BEARING SUPPORT	30020+30022 MODELS ONLY
00J	ASH33030	93000Z SHELL+CONSOLE 3015K4	30015K5A,K5T	019A	15K126	HEXCAPSCR 3/8-16NCX2+1/2SS18-8	30015 MODELS ONLY
00K	ASH33031	93000Z SHELL+CONSOLE 3015S5	30015S5A,S5G,S5J,S5T	019B	15K196	HEXCAPSCR 1/2-13UNC2X3 18-8SS	30020+30022 MODELS ONLY
00L	ASH33024	91396Z SHELL+CONSOLE 3020M4A	30020M4A	020	20C013C	GASKET ELIMINATOR 250 CC LOC#504-41	
00M	ASH33010	88000Z SHELL+CONSOLE 3020C4A-MICRO	30020C4A	021	20C036A	PERMATEX NO 2C IN 11 OZ TUBES	
00N	ASH33009	88000Z SHELL+CONSOLE 3020M5-MICRO	30020M5G,M5J,M5P	022	15K182	HEXTAPSCR 1/2-13XZINC GR5 FULLTHRD	
00O	ASH33019	91041D SHELL+CONSOLE 3020M7-MICRO	30020M7G,M7J,M7P	023	02 02293	92601A DOOR HANDLE NUT GASKET	
00P	ASH33032	93000Z SHELL+CONSOLE 3022K4	30022K5A,K5T	024	15U245	01Z FLT WASH 3/8 STD COMM 18-8 SS	
00Q	ASH33033	93000Z SHELL+CONSOLE 3022S5	30022S5A,S5G,S5J,S5T	025	24G030N	ROLLED WASHER .379"ID NYLTITE #37W	
00R	ASH33034	93000Z SHELL+CONSOLE 3022M5	30022M4X,M5X	026A	15K096	HEXCAPSCR 3/8-16UNC2X1SS18-8	30015C4A,M4A
00S	ASH33035	93000Z SHELL+CONSOLE 3022C4	30022C5X	026B	15K100	HEXCAPSCR 3/8-16X1+1/4 SS18-8	30015M6X,30020+30022ZALL
001	15B200	HEXCAPSCR 3/4-10X1+3/4 SS18-8		027	15K086	HEXCAPSCR 3/8-16NCX3/4 SS18-8	
002	15U350	LOCKWASHER 3/4 MED SS18-8		028	15K086	HXCAPSCR 3/8-16NCX3/4 SS18-8	
003	02 11196	92567B COVER=SHAFT RETAINER=304S/S		029	17N071	NUT J-TYPE T#C33952-3816-3B 3/8-16	
004	02 14359	SPACER SHAFTRETAINER-LG		030	15G218	01Z HXLOKNUT NYL 3/8-16 STL/ZNC	
005A	ACA02CWE	91431C* CYL ASSY=3015CWE/NMA/C4M/OE	00A	031	15U245	01Z FLT WASH 3/8 STD COMM 18-8 SS	
005B	ACA33C6M	91431C* CYL ASSY=3015C6M	00B	032	15U312	FLAWASHER 3/4ODX33/64IDX11GA ZINCPL	
005C	ACA33C5M	91386C* CYL ASSY=3020C5M	00C	033	02 03397	87173A CYLINDER ALIGNING WASHER	
005D	ACA3020M7	92161C*CYL ASSY=3020 M7J/G/P	00D	034	15U300	LOK WASHER REGULAR 1/2 ZINC PLT	
005E	ACA3022M5	93000Z CYL ASSY=3022 M5/C/K/S	00E	035	15K182	HEXTAPSCR 1/2-13XZINC GR5 FULLTHRD	
006A	02 02138A	87517A CYLTIEROD-3/3015W+CWU 18-8SS	PART OF 005A & 005B	036	02 02181	85332B GUARD=SHELL MOUNT RING CLIP	
006B	02 03703	74486B CYLINDER TIE ROD C5M	PART OF 005C	037	15K046S	HEXCAPSCR 1/4-20UNC2A X 2.25 SS18-8	
006C	02 03703A	91386B CYLINDER TIE ROD 3020M7	PART OF 005D	038	15G168	SQ NUT 1/4-20UNC2 SS18-8	
006D	02 03703J	93191B CYLINDER TIE ROD 3022S5	PART OF 005E	039	15N146	RDMACHSCR 10-24UNC2X1 SS18-8	
007A	X2 02758	87382C SPIDER=1/CWU+25W	PART OF 005A	040	15G130	HEXMACHSCR NUT 10-24UNC2 SS18-8	
007B	X2 03561	92087# SPIDER=C6M ONLY-CASTIRON	PART OF 005B			***** END OF PARTS LIST *****	
007C	X2 03561A	92087C SPIDER C5M	PART OF 005C & 005E				
007D	X2 03561B	92242C SPIDER=FABRICATED 3020M7	PART OF 005D				
008	Y2 02059	70256A* SHELL CLAMP RING=30" MACHINE					
009	02 02087C	EXTRUS*ION-SHELL=30" MACHINES (8.5FT					
010	02 03629	70238A LOCKSTRAP=BEAR HOUS S/S					
011	X2 03576	87326C RING=SHELL BACK CLAMP=1/C6M	30020+30022 MODELS ONLY 30020+30022 MODELS ONLY				