

FREEMAN

MODEL 1600

MOISTURE EXTRACTOR

**889 PARTS LIST
AND
OPERATOR'S MANUAL**

manufactured and distributed by



J. A. FREEMAN & SON, INC.





BE CAREFUL

1. KEEP ALL SHIELDS IN PLACE.
2. STOP ENGINE OR MOTOR BEFORE LEAVING OPERATORS POSITION TO ADJUST, LUBRICATE, CLEAN, OR UNCLOG MACHINE, UNLESS OTHERWISE SPECIFICALLY RECOMMENDED IN THE "OPERATOR'S MANUAL."
3. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING MACHINE.
4. KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER DRIVEN PARTS.
5. KEEP OFF EQUIPMENT UNLESS SEAT OR PLATFORM FOR OPERATION AND OBSERVATION IS PROVIDED.
6. KEEP ALL OTHERS OFF.
7. USE APPROPRIATE SIGNS OR WARNING LIGHTS WHEN OPERATING.
8. MAKE CERTAIN EVERYONE IS CLEAR OF MACHINE BEFORE STARTING ENGINE, MOTOR OR OPERATION.

POLICY

1. It is the policy of J.A. Freeman & Son, Inc. to constantly improve its products whenever it is practical to do so.
2. J.A. Freeman & Son, Inc. reserves the right to redesign or change its equipment or component parts thereof without incurring any obligation to install or furnish such changes on equipment previously delivered.
3. Unauthorized changes or additions to equipment manufactured by J.A. Freeman & Son, Inc. relieves the company of further responsibility for warranted operation and breakage replacement.

INSTRUCTIONS FOR ORDERING PARTS

1. Order by part number and description of part.
 - (a) Parts should NOT be ordered from illustration only.
 - (b) Parts should NOT be ordered from numbers on castings.
2. Order by MOISTURE EXTRACTOR serial number and model.
3. Much delay and confusion can be avoided if parts numbers are arranged in sequence on all orders.
4. State how to ship: whether by truck, stage, parcel post, air parcel post, UPS, or air freight.
5. Claims for shortage or error in handling of an order for parts must be made upon receipt of goods.
6. Address all orders for parts as follows:

Place serial number of machine here for your convenience:

MOISTURE EXTRACTOR Serial No. _____

Motor Serial No. _____

Left and right of machine are understood to mean from a position facing the rear of the machine, looking into the Bale Chamber.

Permission must be secured before any parts are returned for credit. When parts are returned, the freight must be prepaid or arrangements made so that they can be brought in by our trucks.

"NOTE"

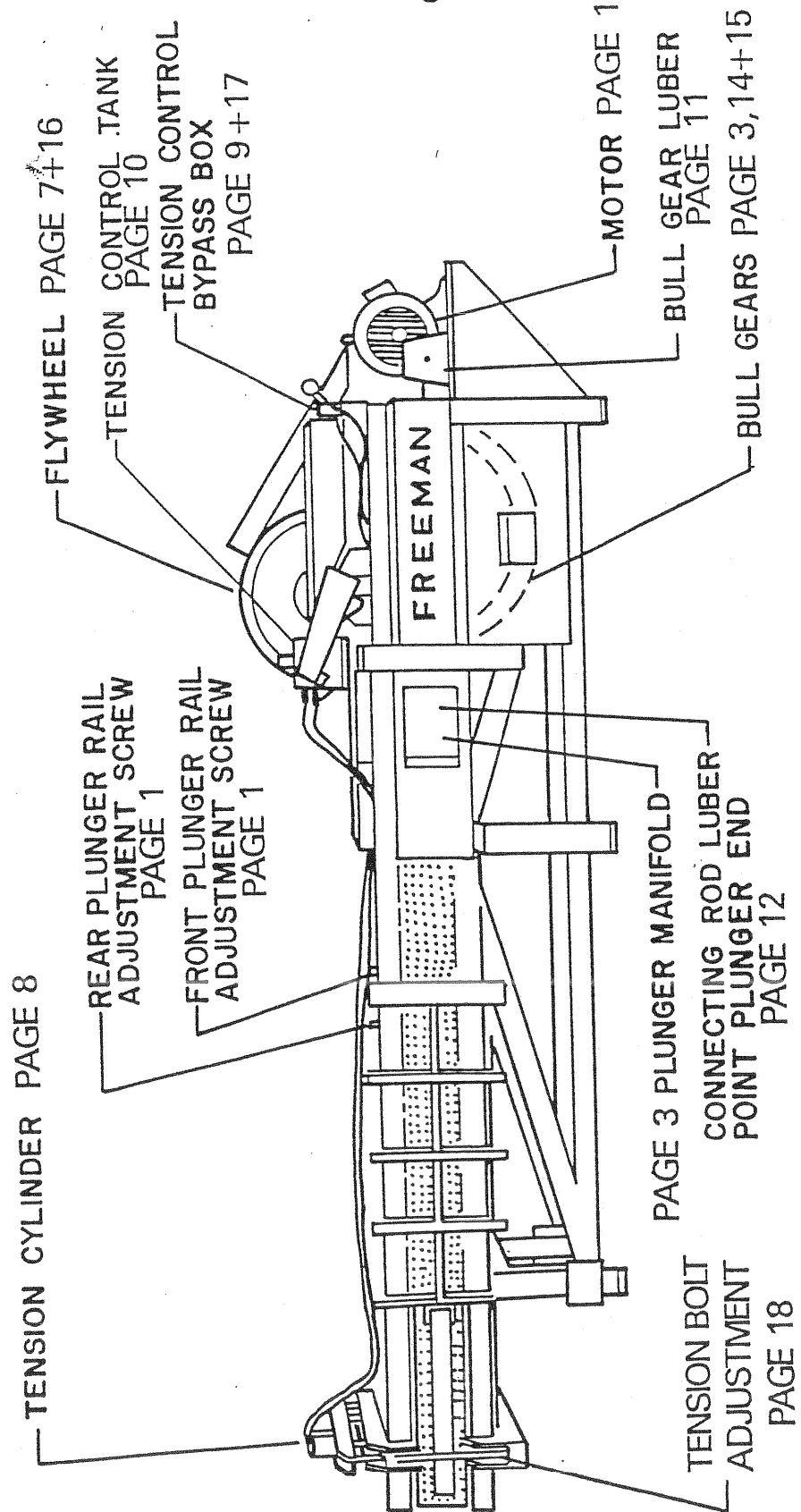
Parts are identified by reference numbers. See parts list for correct part numbers. DO NOT USE REFERENCE NUMBERS AS PART NUMBERS.

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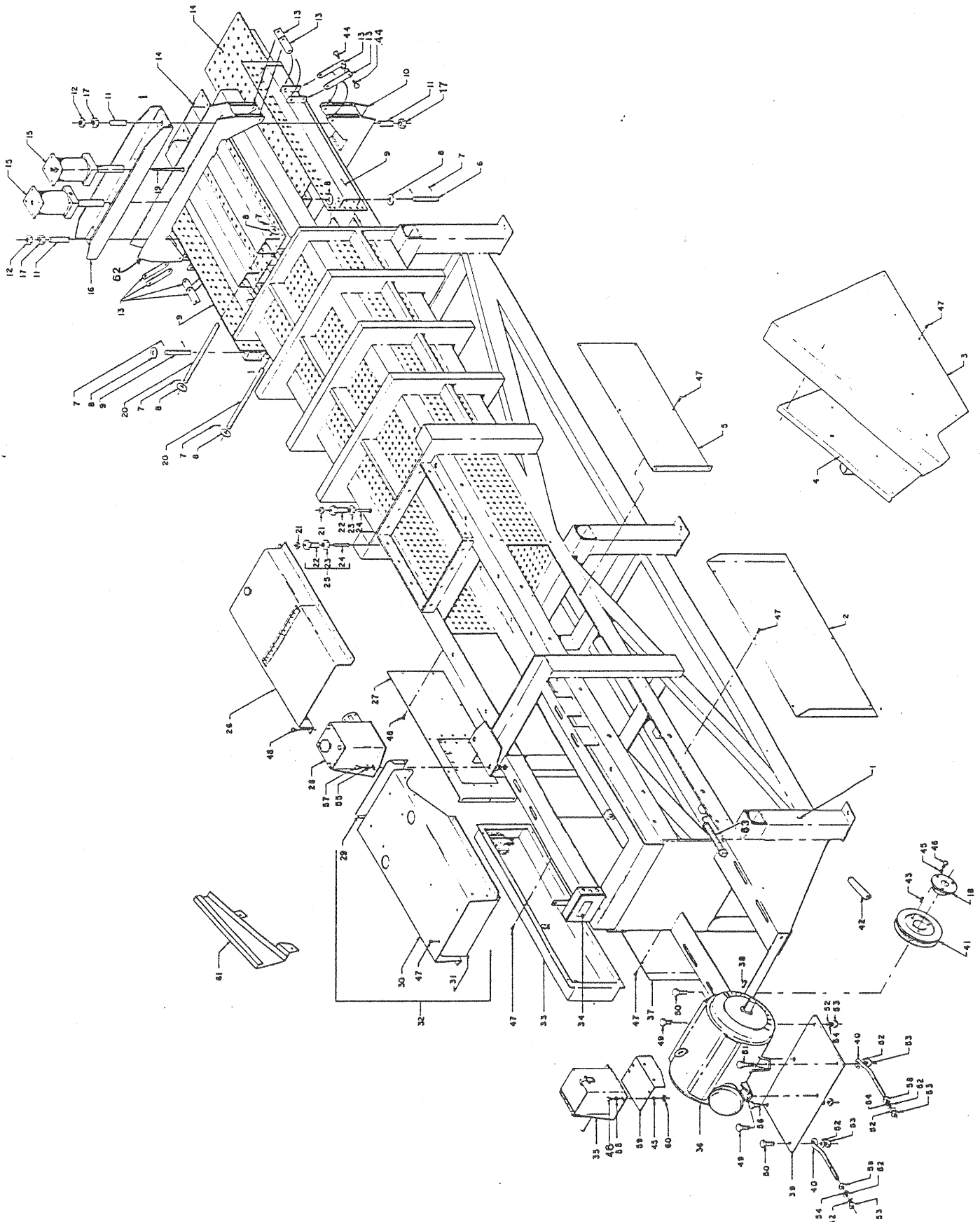
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BRG0024375	7	FT 0000556	10	SHM0115770	4
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F 0000774	4	HOS0014341	8,10	TNS0008393	2
F 0000967	4,7	HOS0014342	9,10	TNS0008441	2
F 0000986	4	HOS0022012	8	TNS0008443	2
F 0001134	4	HOS0022014	8,10	TNS0008445	2,8
F 0001441	11	HSN0014135	4	TNS0008572	2
F 0001537	4,6	HTB0500008	6	WAS0000123	4
F 0001614	7	HUB0007157	7	WAS0000136	4
F 0001661	4	HYD0060030	10	WAS0000137	4,6
F 0001849	4	HYD0068030	10	WAS0011857	4
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F 0004073	10	HYD3409030	9	WIP0013750	4,6
F 0004074	10	HYD3709030	10	ZZ 0000100	4,6
F 0005264	11	HYD5205022	10,11	ZZ 0000101	4
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F 0006719	10	HYD5405020	4	ZZ 0000401	2
F 0007000	2,7	HYD5405022	11	ZZ 0000403	10,11
F 0007010	2	HYD5755030	8	ZZ 0000426	2
F 0007032	4	HYD5924040	10,11	ZZ 0000701	9
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F 0007035	4	LUB0323060	11		
F 0007036	4	MNT0011824	4,6		
F 0007037	4	MNT0014181	2		
F 0007038	4	MNT0015234	2	BRG0004016	4
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F 0007626	11	NFH0000625	4		
F 0008148	2	NFE0081500	4,6		
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BRG0004016	4
BSH0014106	4
F 0001132	7
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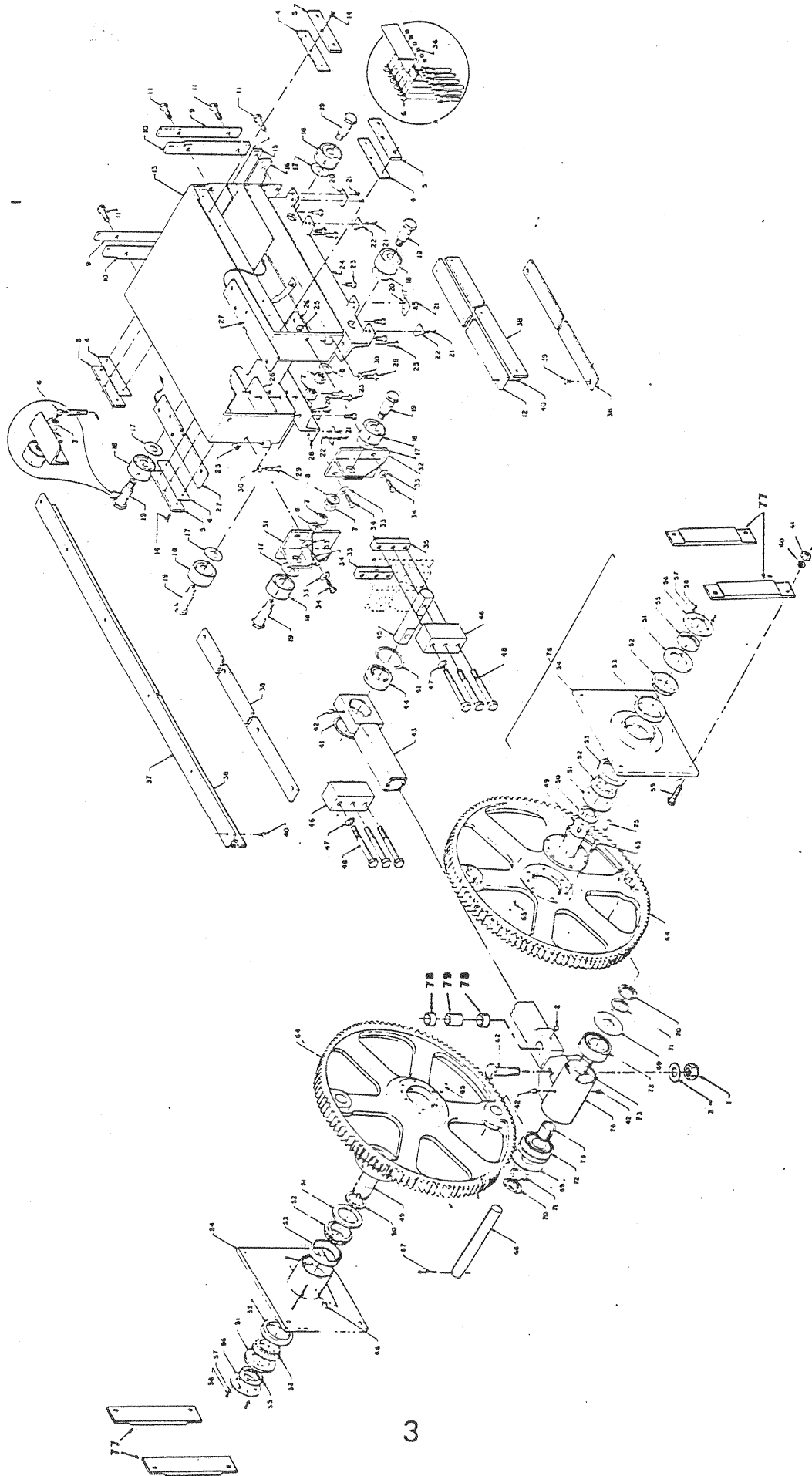
Main Frame And Shields



Main Frame And Shields

REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	FRMO014153	FRAME ASSEMBLY	1
2	SHDO014155	LOWER BULL GEAR SHIELD-WE-1600	1
3	F 0008325	DRIVE BELT SHIELD	1
4	F 0008324	DRIVE BELT SHIELD BRACKET	1
5	SHDO014241	L. H. REAR CHAMBER SHIELD-1600	1
6	PIN0014250	TENSION RAIL HINGE PIN -1600	2
7	COTO000504	1/8 X 1-1/2 COTTER PIN	8
8	WCT0007500	3/4" FLATWASHER	8
9	TNS0008392	SIDE TENSION RAIL	2
10	TNS0008443	BOTTOM TENSION ANGLE	1
11	TNS0008572	TENSION BOLT	2
12	NCH0010000	1" NC HEX NUT	4
13	F 0000497	FLAT LINKAGE BAR	8
14	TNS0008393	TOP & BOTTOM TENSION RAIL ASSY	2
15	FT 0008567	TENS CONTR CYL-MOIST EXTR-COMP	2
16	TNS0008445	RAM FRAME	1
17	NCH0010000	1" NC HEX NUT	4
18	BSH0001875	Q1-1/7/8" BUSHING	1
19	FT 0011739	TENSION CONTROL CYL TIE ROD	8
20	PIN0014249	TENSION RAIL HINGE PIN -1600	2
21	NCH0003125	5/16" NC HEX NUT	4
22	SMS0006981	TOP GUIDE RAIL TENSION BOLT	4
23	NFJ0007500	3/4" NF JAM NUT	4
24	SMFO000212	5/16 X 3-1/2 FH MACHINE SCREW	4
25	*****	RAIL ADJUSTER ASSEMBLY	4
26	SHDO011796	REAR TOP CHAMBER SHIELD	1
27	SHDO014243	R.H REAR CHAMBER SHLD ASB-1600	1
28	FT 0015049	TENS CONT PUMP & TANK COMP	1
29	F 0008148	REAR SECT BULLGEAR SHIELD	1
30	SHDO008027	BULLGEAR SHIELD-MAIN SECT	1
31	SHDO008028	BULLGEAR SHIELD-FRONT SECT	1
32	SHDO008648	BULLGEAR SHIELD COMPLETE	1
33	SHDO014158	UPPER BULL GEAR SHIELD-WE-1600	1
34	FT 0000263	TENS CONTR-BYPASS BOX-MOIS EXT	1
35	LUB0014332	BULL GEAR LUBER -CRN 1600	1
36	MTR0010038	MOTOR 30HP 1800RPM 286T 230460	1
37	SHDO014155	LOWER BULL GEAR SHIELD-WE-1600	1
38	ZZ 0000401	3/8 X 3/8 X 2-3/4 KEY	1
38	ZZ 0000426	1/2 X 1/2 X 3-1/4 KEY	1
39	MNT0014181	MOTOR MOUNT PLATE-286T-WE-1600	1
39	MNT0015234	MOTOR MOUNT PLATE F/326T-50HP	1
40	F 0007010	ENGINE ADJUSTING BOLT-PLATED	2
41	PUL0013725	DRIVE SHEAVE PULLEY	1
42	F 0007000	DRIVE BELT D-165	1
43	*****	KEY FOR BSH0001875	1
44	SCC0000503	1/2 X 1-1/4 NC HT CAP SCREW	8
45	WLK0003750	3/8" LOCKWASHER	5
46	SCC0000303	3/8 X 1-1/4 NC HT CAP SCREW	5
47	SMR0000100	1/4 X 1/2 RH MACH SCREW	48
48	SMS0000107	1/4 X 1/2 NC SELF-TAP CS-PLTD	21
49	SCC0000506	1/2 X 2 NC HT CAP SCREW	2
50	SCC0000508	1/2 X 2-1/2 NC HT CAP SCREW	2
51	SCC0000510	1/2 X 3 NC HT CAP SCREW	1
52	WCT0005000	1/2" FLATWASHER	8
53	NCH0005000	1/2" NC HEX NUT	8
54	WLK0005000	1/2" LOCKWASHER	8
55	WCT0003750	3/8" FLATWASHER	4
56	SCC0000505	1/2 X 1-3/4 NC HT CAP SCREW	1
57	SCC0000302	3/8 X 1 NC HT CAP SCREW	4
58	NCJ0000500	1/2" NC JAM NUT - PLATED	2
59	BKT0007873	LUBER TANK MOUNTING BRACKET	1
60	NCH0000375	3/8" NC HEX NUT - PLATED	2
61	SHDO011803	TENSION CONTROL PMP SHLD -1600	1
62	TNS0008441	TOP TENSION ANGLE	1
63	SQS5006000	1/2 X 6 SQUARE HD SCREW	12

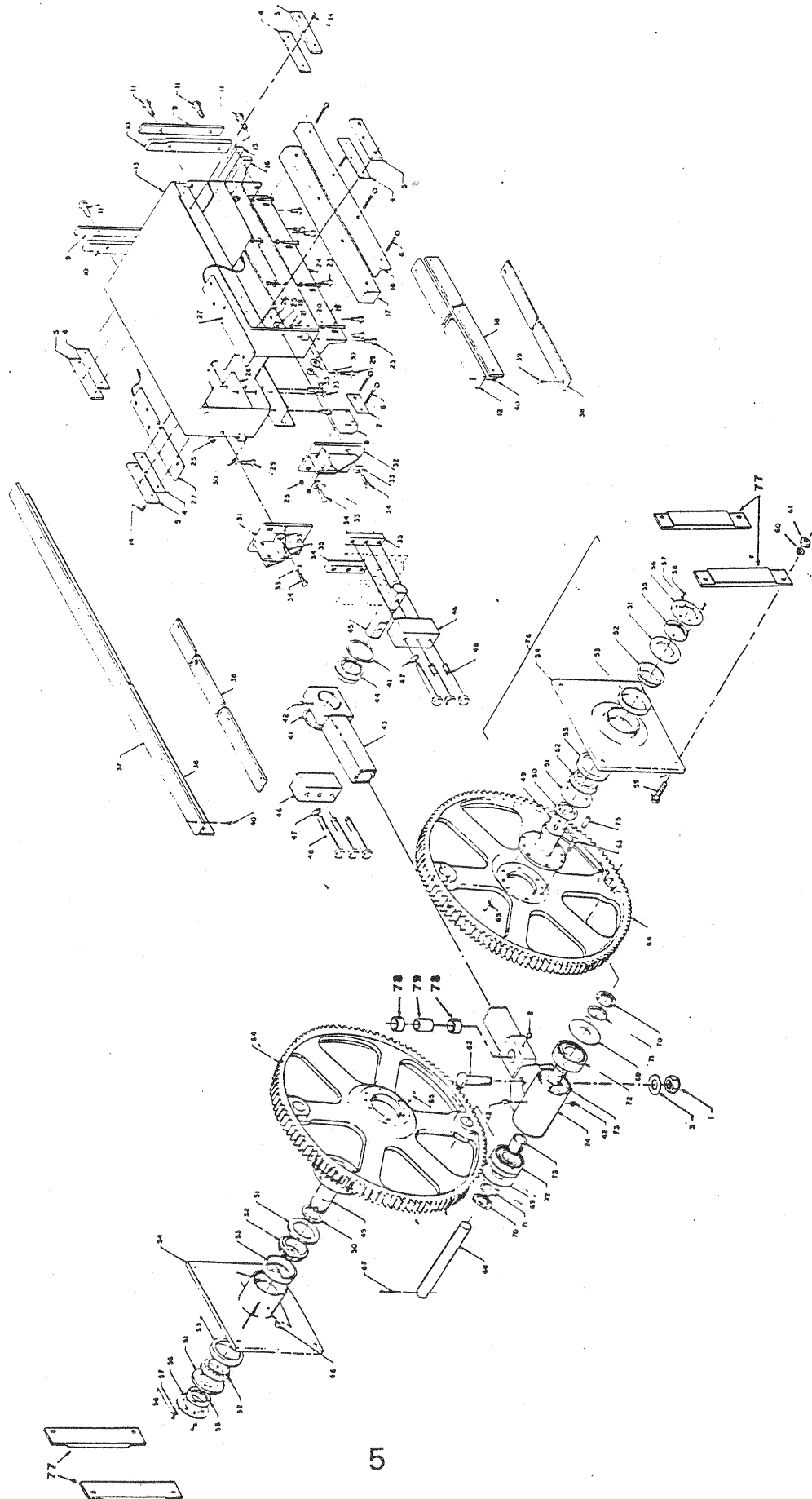
Bullgears And Plunger With Rollers



Bullgears And Plunger With Rollers

REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	NFE0081500	1-1/2" NF ESNA NUT - GRADE 8	1
2	ZZ 0000100	1/4-28 STR 5/16 HEX ZERK	1
3	WAS0000137	MH BSH 30DX1 5/8IDX3/16TK A325	1
4	SHM0115770	1/4" SLIDE PLATE SHIM -1600	4
4	SHM0115771	16 GA. SLIDE PLATE SHIM -1600	1
4	SHM0115772	20 GA. SLIDE PLATE SHIM -1600	1
5	F 0001537	HARD SLIDE FOR PLUNGER	4
6	HYD5405020	1/4 JIC X 1/8 NPT 90° MALE ELB	6
7	NFH0010000	1" NF HEX NUT	6
8	WAS0000123	1" STRUCTURAL WASHER	6
9	BAR0013751	SIDE BAR-SPEC PLUNG-WIP BACKUP	2
10	WIP0013750	WIPER-SPEC PLUNG SIDE FACE	2
11	SCC0070006	5/8 X 2 NC HT CS - PLATED	7
12	PLG1185101	LH TOP PLUNGER RAIL -ME 1600	1
13	PLG0011819	PLUNGER FRAME -1600	1
14	SCC0000202	5/16 X 1 NC HT CAP SCREW	12
15	BAR0013749	BOT SPEC PLUNG WIPE BACKUP BAR	1
16	WIP0013748	WIPER-SPEC PLUNG BOT FACE	1
17	WAS0000136	1-1/8 STRUCTURAL WASHER	6
18	BRG0000994	PLUNGER ROLLER BEARING	6
19	PIN0011424	PLUNGER ROLLER PIN -WE-1600	6
20	F 0000986	WIPER REAR	6
21	SMR0000101	1/4 X 3/4 RH MACH SCREW	16
22	F 0000774	WIPER FRONT	1
23	SCC0000505	1/2 X 1-3/4 NC HT CAP SCREW	14
24	MNT1182001	L.H. LOWER ROLLER MNT ASB-1600	1
25	NCE0003750	3/8" NC ESNA NUT	1
26	PLT0013148	PLUNG ROLLER MNT RETAINER PLT	2
27	MNT0011824	PLUNG ROLLER MNT RETAIN PLATE	2
28	MNT1182000	R.H. LOWER ROLLER MNT ASY-1600	1
29	SCC0000506	1/2 X 2 NC HT CAP SCREW	2
30	NCJ0005000	1/2" NC JAM NUT	2
31	MNT1182800	R.H. PLUNG UPPER ROLL MNT-1600	1
32	MNT1182801	L.H. PLUNG UPPER ROLL MNT-1600	1
33	WCT0003750	3/8" FLATWASHER	4
34	SCC0000305	3/8 X 1-3/4 NC HT CAP SCREW	4
35	PLT0011566	PLUNGER PIN BOLT PLATE	2
36	ZZ 0000103	1/8 NPT STR 7/16 HEX ZERK	6
37	PLG1185100	RH TOP PLUNGER RAIL -ME 1600	1
38	PLG0008346	SIDE PLUNGER RAIL -ME1400/1600	4
38	PLG0834601	HARDENED PLUNGER RAIL	4
39	SMF0000202	5/16 X 1 FH MACHINE SCREW	14
40	SMF0000304	3/8 X 1-1/2 FH MACHINE SCREW	14
41	F 0001850	SNAP RING	1
42	ZZ 0000101	1/4-28 90° 3/8 HEX ZERK	3
43	CNRO014134	CONNECTING ROD ASSEMBLY-WE-1600	1
44	F 0001849	BEARING F/CONN ROD END HOUSING	1
45	PIN0008373	PLUNGER PIN	1
46	PLT0011560	PIN SUPPORT PLATE	2
47	WLK0007500	3/4" LOCKWASHER	6
48	SFC0000820	3/4 X 7 NF HT CAP SCREW	6
49	F 0007032	L. H. BULLGEAR MOUNTING SHAFT	2
50	F 0007036	SEAL RACE-BULL GEAR BEARING	2
51	F 0007035	SEAL F/SIDE PLATE	4
52	F 0007033	BEARING CONE F/SIDE PLATE	5
53	F 0007034	BEARING CUP F/SIDE PLATE	4
54	PLT0016304	SIDE PLATE-LH-W/BEARING CUPS	2
55	F 0007037	SIDE PLATE BRG ADJUSTING NUT	2
56	F 0007038	LOCKING WASHER	2
57	F 0007040	L/W F/ADJ SCREW,#8 MED	10
58	F 0007039	8-32 X 1/2 NC SOCKET HD CAP SC	10
59	SFC0000710	5/8 X 3 NF HT CAP SCREW	8
60	WLK0000625	5/8" LOCKWASHER - PLATED	8
61	NFH0000625	5/8" NF HEX NUT - PLATED	8
62	PIN0014125	1-1/2" PIVOT PIN -WE-1600	1
63	SCC0000207	5/16 X 2-1/4 NC HT CAP SCREW	12
64	F 0007438	BULL GEAR-88 TOOTH	2
65	F 0007239	3/8 X 1-1/2 ROLL PIN	4
66	F 0001661	FITTING-HYD SHUT OFF-1/8 NPT	2
67	COT0001204	3/8 X 2-1/2 COTTER PIN	2
68	F 0001134	CRANK PIN-GEAR END-22" CHAMBER	1
69	WAS0011857	GREASE SEAL WASHER	2
70	*****	LOCK NUT, FOR BRG1111938	2
71	*****	STAR LOCK, FOR BRG1111938	2
72	BRG0022311	DOUBLE ROLLER BEARING - SKF	2
73	BRG1111938	1-15/16" BORE ADAPTER -WE-1600	2
74	HSN0014135	CONN ROD BRG HSN-AFT/3-82-1600	1
75	F 0000225	1/2 X 1/2 X 2 KEY -ZZ 424	1
76	F 0007463	SIDE PLATE LH W/BEARINGS-SHAFT	1
77	SPC0014220	SPACER-BULL GEAR SIDE PLATE	4
78	BRG0004016	INNER RACE BEARING	2
79	BSH0014106	CONN ROD SWIVEL BUSHING	1

Plunger With Slides

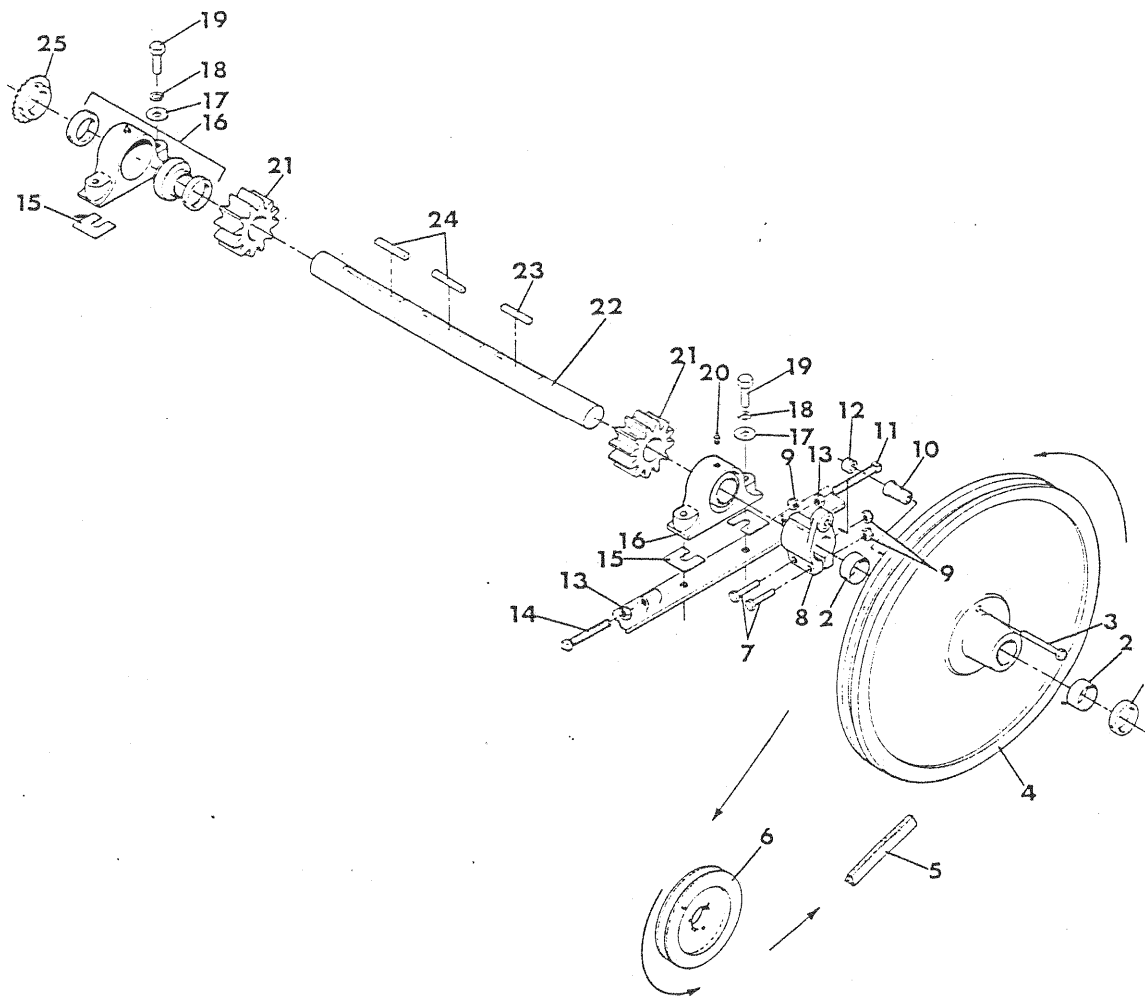


Plunger With Slides

REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	NFE0081500	1-1/2" NF ESNA NUT - GRADE 8	1
2	ZZ 0000100	1/4-28 STR 5/16 HEX ZERK	1
3	WAS0000137	MH BSH 30DX1 5/8IDX3/16TK A325	1
4	SPC0011577	HARD SLIDE, SPACE PLATE	4
5	F 0001537	HARD SLIDE FOR PLUNGER	4
6	SCCS000514	1/2 X 4 NC HEX CS-STNLS	12
7	PLT0021973	UPPER SLIDE CLAMP PLT 1600	2
8	PLG0021968	PLUNGER TOP SLIDE 1600	2
9	BAR0013751	SIDE BAR-SPEC PLUNG-WIP BACKUP	2
10	WIP0013750	WIPER-SPEC PLUNG SIDE FACE	2
11	SCC0070006	5/8 X 2 NC HT CS - PLATED	7
12	PLG1185101	LH TOP PLUNGER RAIL 1600	1
13	PLG0011819	PLUNGER FRAME 1600	1
14	SC00000202	5/16 X 1 NC FH SOCKET CS	12
15	BAR0013749	BOT SPEC PLUNG WIPE BACKUP BAR	1
16	WIP0013748	WIPER-SPEC PLUNG BOT FACE	1
17	PLG0021967	PLUNGER BOTTOM SLIDE 1600	2
18	SUP0021965	PLUNGER SLIDE SUPPORT 1600	2
19	SCCS000508	1/2 X 2-1/2 NC HEX CS-STNLS	8
20	NCHS000500	1/2" NC HEX NUT - STAINLESS	16
21	WLKS000500	1/2" LOCKWASHER - STAINLESS	8
22	+++++	REFERENCE NO LONGER USED	1
23	SCC0000505	1/2 X 1-3/4 NC HT CAP SCREW	14
24	MNT0021959	PLUNGER SLIDE MOUNT ANGLE-1600	2
25	NCES000500	1/2 NC ESNA NUT-STAINLESS	12
26	PLT0013148	PLUNG ROLLER MNT RETAINER PLT	2
27	MNT0011824	PLUNG ROLLER MNT RETAIN PLATE	2
28	+++++	REFERENCE NO LONGER USED	1
29	HTBS050008	1/2 X 2-1/2 NC TAP BOLT-STNLS	2
30	NCJ0005000	1/2" NC JAM NUT	2
31	MNT2196901	RT OPPOS-UPPER SLIDE MNT -1600	1
32	MNT2196900	LEFT SHWN-UPPER SLIDE MNT-1600	1
33	WCTS000500	1/2" FLATWASHER-STAINLESS	12
34	SCCS000506	1/2 X 2 NC HEX CS-STLNS	4
35	PLT0011566	PLUNGER PIN BOLT PLATE	2
36	+++++	REFERENCE NO LONGER USED	1
37	PLG1185100	RH TOP PLUNGER RAIL 1600	1
38	PLG0008346	SIDE PLUNGER RAIL	4
38	PLG0083460	HARDENED PLUNGER RAIL	4
39	SMF0000202	5/16 X 1 FH MACHINE SCREW	14
40	SMF0000304	3/8 X 1-1/2 FH MACHINE SCREW	24
41	F 0001850	SNAP RING	1

FOR ITEMS 42 THRU 79, REFER TO PAGE 4.

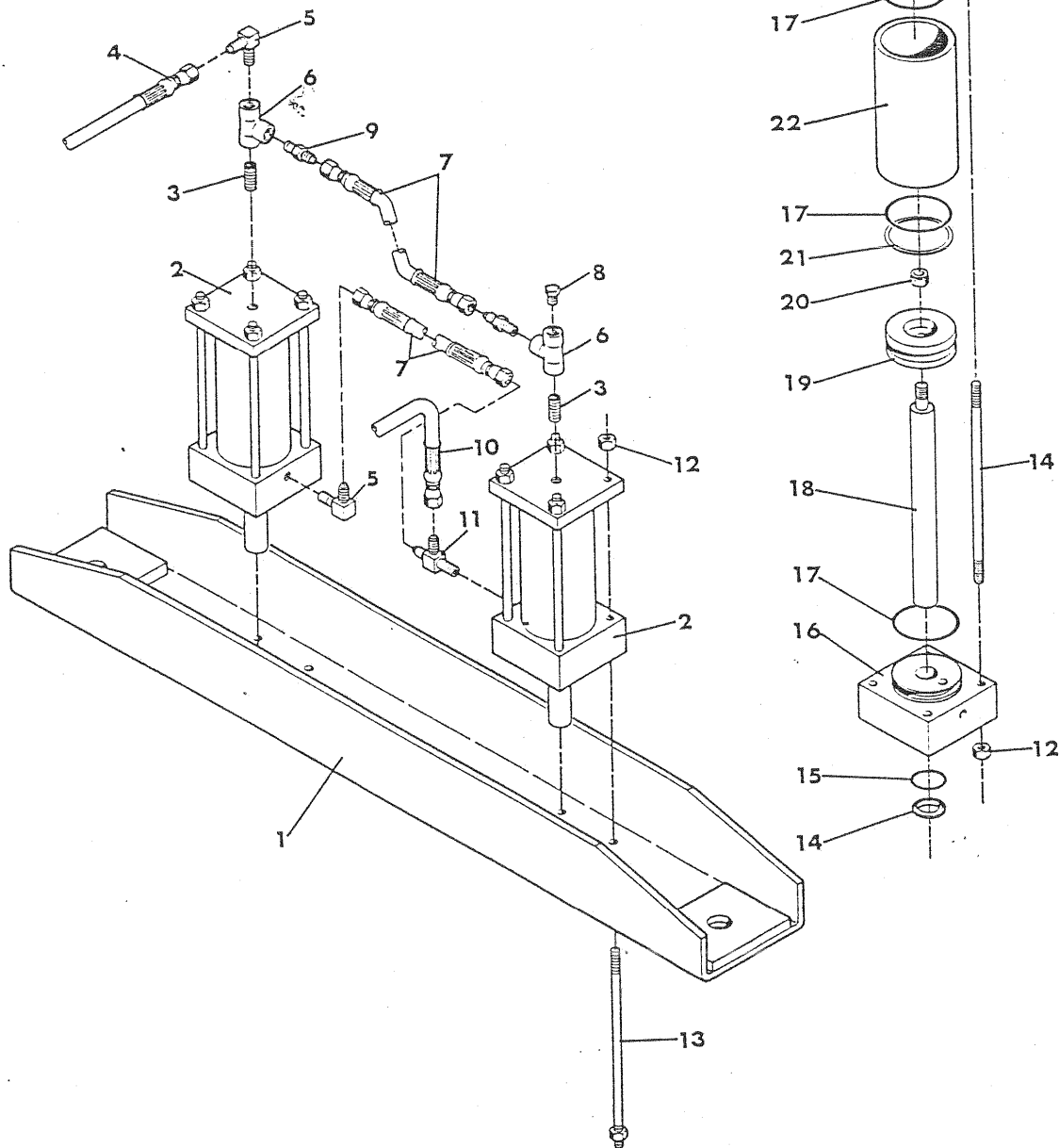
Flywheel And Pinion Shaft Assembly



Flywheel And Pinion Shaft Assembly

REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	ZZ 0002008	2-7/16 SET COLLAR	1
2	BSH0007127	2-7/16" FLYWHEEL BUSHING-PAIR	2
3	SCC0000516	1/2 X 5 NC HT CAP SCREW W/NUT	1
4	FLW0007127	FLYWHEEL F/2-7/16" SHAFT	1
5	F 0007000	DRIVE BELT D-165	1
6	PUL0013725	DRIVE SHEAVE PULLEY	1
7	SCC0000512	1/2 X 3-1/2 NC HT CAP SCREW	2
8	HUB0007157	SHEAR HUB F/2-7/16" SHAFT	1
9	NCE0000500	1/2" NC ESNA NUT - PLATED	3
10	F 0001614	FLYWHEEL SHEAR BUSHING-FLANGED	1
11	SQS5002500	1/2 X 2-1/2 SQUARE HD SCREW	2
12	F 0001614	FLYWHEEL SHEAR BUSHING-FLANGED	1
13	NCH0000500	1/2" NC HEX NUT - PLATED	4
14	SQS5003000	1/2 X 3 SQUARE HD SCREW	2
15	F 0000967	SHIM F/PINION SHAFT BRG - 16GA	4
16	BRG0024375	PILLOW BLOCK BEARING - TYPE E	2
17	WCT0000750	3/4" FLATWASHER - PLATED	4
18	WLK0000750	3/4" LOCKWASHER - PLATED	4
19	SCC0000811	3/4 X 3-1/4 NC HT CAP SCREW	4
20	ZZ 0000103	1/8 NPT STR 7/16 HEX ZERK	2
21	GER0007128	PINION GEAR F/2-7/16" SHAFT	2
22	SHF0011986	2-7/16" PINION SHAFT	1
23	F 0000072	1/2 X 1/2 X 3-1/2 KEY	1
24	F 0007488	TAPERED KEY F/PINIONS 3-1/2"	2
25	SPK0004030	SPRKT 2-7/16 BORE W/SET SCREWS	1

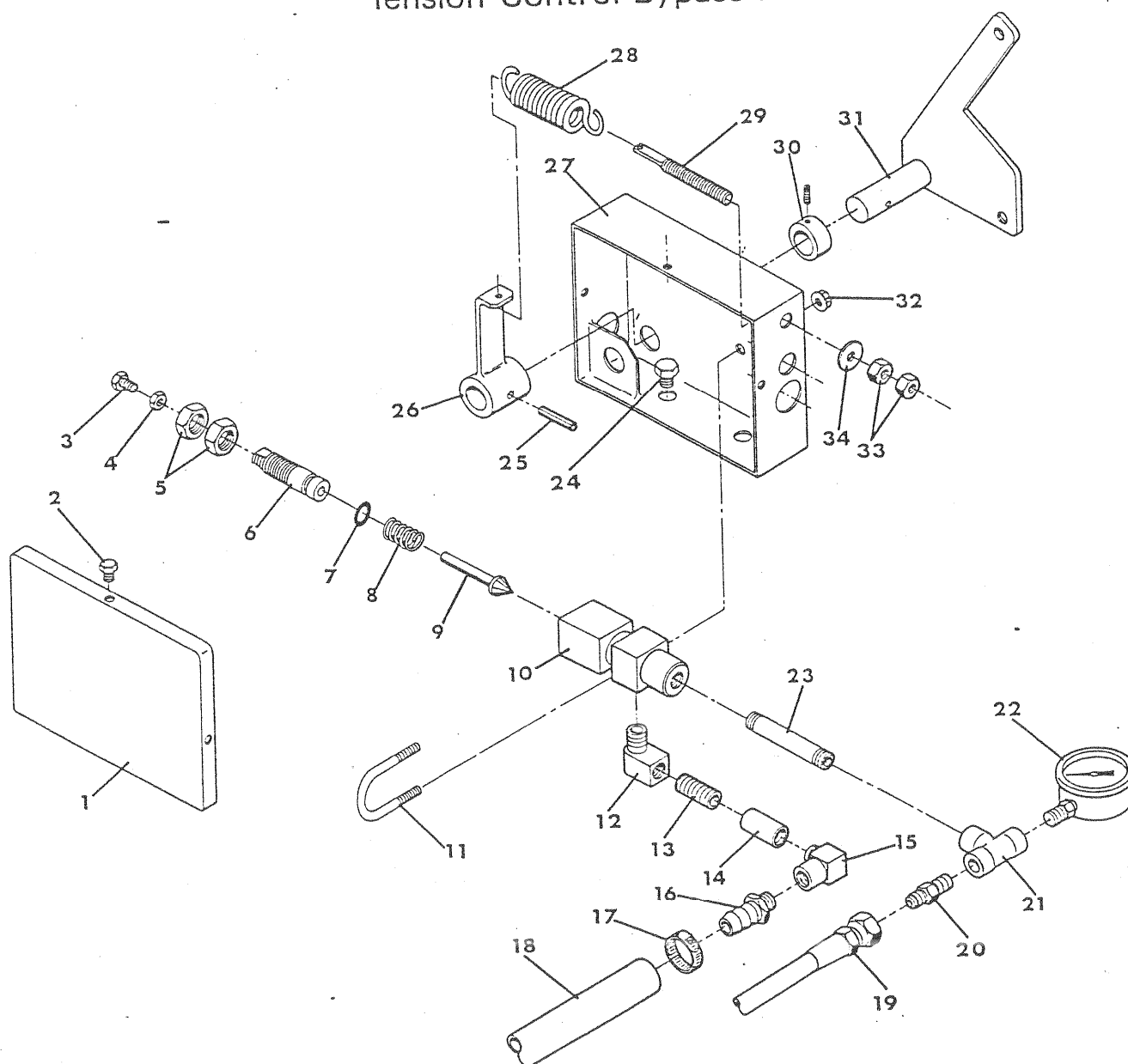
Tension Control Rams



Tension Control Rams

REF NO.	PART NO.	DESCRIPTION	QTY. USED	REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	TNS0008445	RAM FRAME	1	13	FT 0011739	TENSION CONTROL CYL TIE ROD	8
2	FT 0008567	TENS CONTR CYL-MOIST EXTR-COMP	2	14	ROD0001000	ROD-WIPER RING	1
3	FT 0000217	1/4 CLOSE XH BLACK NIPPLE	2	15	RNG0000214	O-RING	1
4	HOS0022014	PRESS FRM PMP TO RAM	1	16	FT 0008424	TENS CYLIND HEAD-CORN SQUEEZE	1
5	F 0006638	3/8 JIC X 1/4 NPT 90° MALE ELB	1	17	FT 0000012	TENSION CYL O-RING - 3 INCH	3
6	FT 0000218	1/4" 2000 PSI STEEL PIPE TEE	2	18	FT 0008566	TENSION CYL PISTON ROD	1
7	HOS0022012	RETURN HOSE-CYL TO CYL	2	19	FT 0000236	3" TENSION CYL. PISTON HEAD	1
8	FT 0000075	1/4"STEEL HEX HEAD PIPE PLUG	1	20	NFJ0005000	1/2" NF JAM NUT	1
9	FT 0000219	3/8 JIC X 1/4 NPT MALE CONN	3	21	FT 0000137	BACKUP RING F/FT12 - 3 INCH	1
10	HOS0014341	RETURN HOSE RAM TO TANK	1	22	FT 0000250	3" TENSION CYLINDER BARREL	1
11	HYD5755030	3/8 JIC X 1/4 NPT MALE RUN TEE	1	23	FT 0000251	3" TENS. CYLINDER TOP PLT	1
12	NFH0003750	3/8" NF HEX NUT	16				

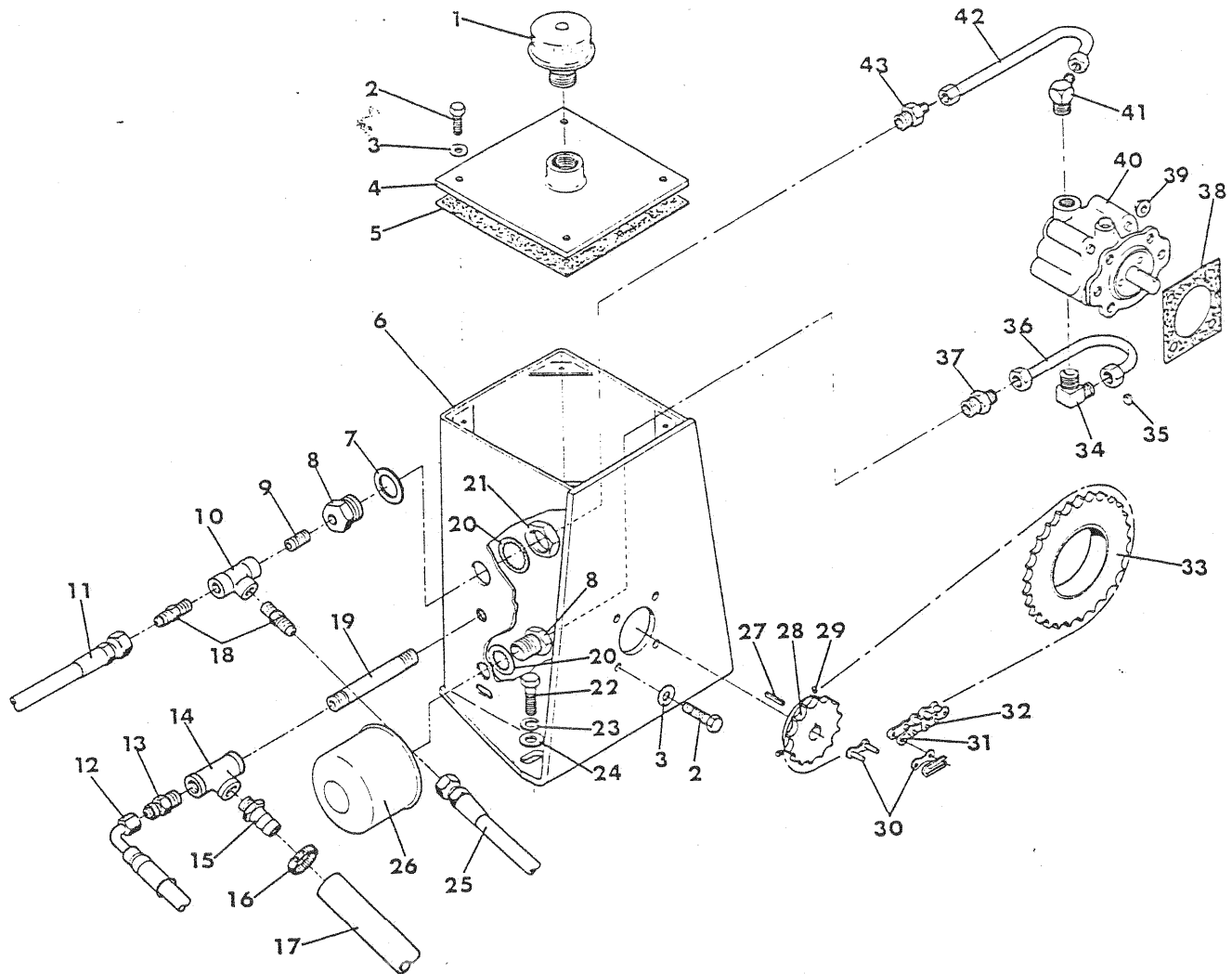
Tension Control Bypass Box



Tension Control Bypass Box

REF NO.	PART NO.	DESCRIPTION	QTY. USED	REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	FT 0000050	COVER F/BYPASS BOX	1	18	HOS0014342	BYPASS HOSE CNTL BOX TO TANK	1
2	SCC0000100	1/4 X 1/2 NC HT CAP SCREW	3	19	HOS0014340	PRES HSE FROM PUMP TO CTNL BOX	1
3	SCC0000103	1/4 X 1-1/4 NC HT CAP SCREW	1	20	FT 0000219	3/8 JIC X 1/4 NPT MALE CONN	1
4	NCH0002500	1/4" NC HEX NUT	1	21	FT 0000218	1/4" 2000 PSI STEEL PIPE TEE	1
5	FT 0000055	5/8" NC JAM NUT	2	22	GAG0002111	500# HYD PRES GUAGE LIQ FILLED	1
6	FT 0000054	BYPASS PLUNGER-LESS NUTS	1	23	FT 0000223	1/4 X 3 EX HEAVY NIPPLE	1
7	FT 0000053	"O"RING-BYPASS	1	24	SCC0000301	3/8 X 3/4 NC HT CAP SCREW	2
8	SPG0000026	SPRING #26	1	25	ZZ 0000701	1/4 X 1-1/4 ROLL PIN	1
9	FT 0000087	BYPASS CHECK PIN	1	26	FT 0000245	BYPASS BOX LEVER	1
10	FT 0000184	BYPASS CYLINDER BODY	1	27	FT 0000194	BYPASS BOX (BOX ONLY)	1
11	FT 0000058	#06 "U"BOLT	1	28	SPG0013399	TENSION CONTROL ADJUST SPRING	1
12	FT 0000188	3/8 X 90° STREET ELBOW	1	29	FT 0006205	ADJUSTING SCREW	1
13	01-718	3/8 X CLOSE STD NIPPLE	1	30	F 0000172	3/4" SET COLLAR	1
14	PPE0030375	3/8 STD BLK PIPE COUPLING	1	31	FT 0000246	PENETRATION WHEEL ARM	1
15	HYD3409030	3/8 X 90° STEEL STREET ELBOW	1	32	NMS0000250	1/4 NC WHIZ NUT - PLATED	2
16	FT 0000193	3/8 X 1/2" HOSE COUPLER	1	33	NCH0000375	3/8" NC HEX NUT - PLATED	2
17	FT 0000252	1/2" MINI-HOSE CLAMP	1	34	WCT0003750	3/8" FLATWASHER	1

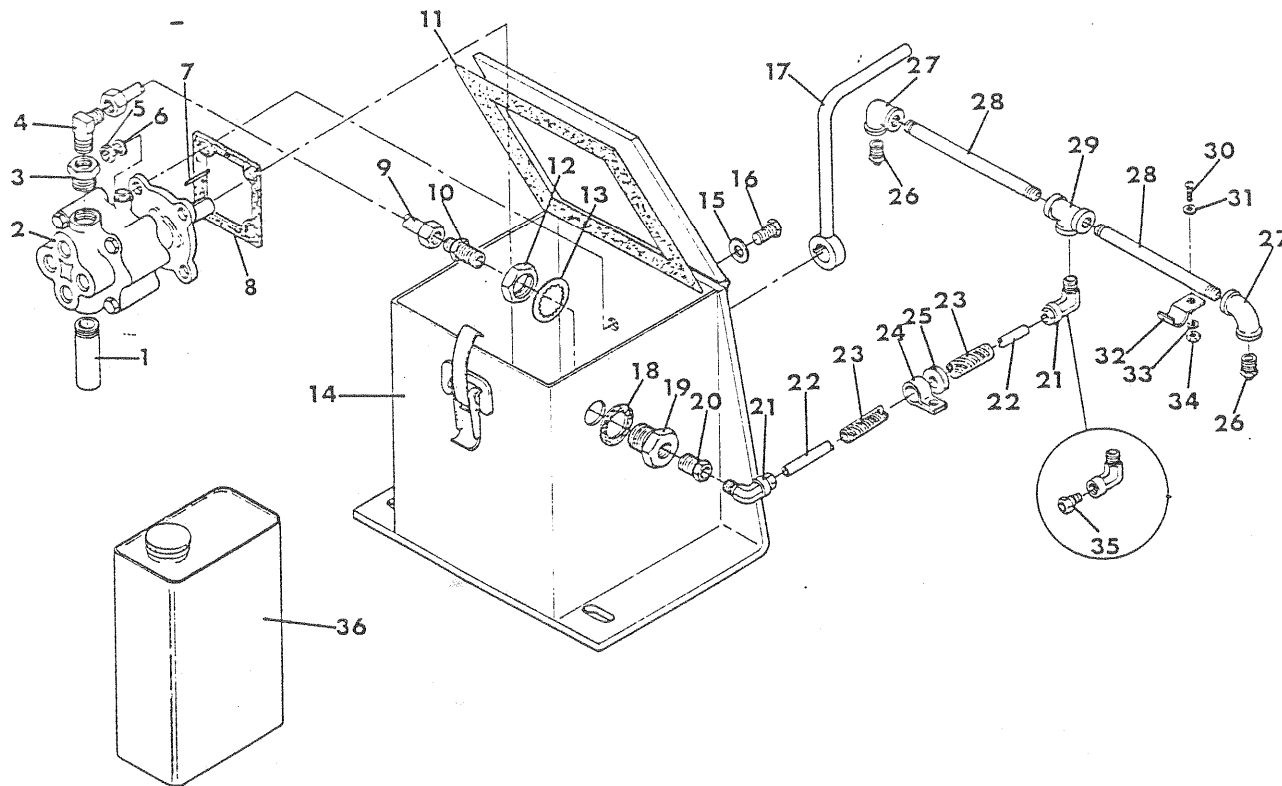
Tension Control Pump



Tension Control Pump

REF NO.	PART NO.	DESCRIPTION	QTY. USED	REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	FT 0000530	FILTER ASB-BF2113 OR 13829-98	1	23	WLK0003750	3/8" LOCKWASHER	2
2	SCC0000202	5/16 X 1 NC HT CAP SCREW	8	24	WCT0003750	3/8" FLATWASHER	2
3	FT 0000538	5/16 COPPER SEALING WASHER	8	25	HOS0014340	PRES HSE FROM PUMP TO CTNL BOX	1
4	COV0016871	TENS CNTL TANK COVER	1	26	FT 0000546	FILTER F/TENSION CONTROL PUMP	1
5	FT 0000559	BULLGEAR LUBER TANK GASKET	1	27	ZZ 0000403	1/8 X 1/8 X 1 KEY	1
6	TNK0015049	TENS CONTROL TNK ONLY-PULL TYP	1	28	FT 0000555	DRIVE SPROCKET-40B15-9/16"BORE	1
7	FT 0000553	3/4 X 1 X 1/16 FIBER WASHER	1	29	STS2500250	1/4 X 1/4 NC SOCKET SET SCREW	2
8	FT 0000549	1/4" BULKHEAD FITTING	2	30	F 0004074	CONNECTING LINK - RC 40	1
9	FT 0000217	1/4 CLOSE XH BLACK NIPPLE	1	31	F 0004073	OFFSET LINK - RC 40	1
10	FT 0000218	1/4" 2000 PSI STEEL PIPE TEE	1	32	FT 0000556	DRIV CHAIN 73P#40 W/2OFF-1 CON	1
11	HOS0022014	PRESS FRM PMP TO RAM	1	33	SPK0004030	SPRKT 2-7/16 BORE W/SET SCREWS	1
12	HOS0014341	RETURN HOSE RAM TO TANK	1	34	HYD0069033	3/8"90°MALE BRASS ELBOW	1
13	HYD5205033	3/8 JIC X 3/8 NPT MALE CONN	1	35	HYD0060030	3/8 SLEEVE	2
14	HYD3709030	3/8 STEEL FEMALE PIPE TEE	1	36	FT 0000562	TUBE 3/8"F/TENS PMP(WAS F8331)	1
15	FT 0000193	3/8" X 1/2" HOSE COUPLER	1	37	HYD0068030	3/8 X 1/4 BRASS MALE CONNECTOR	1
16	FT 0000252	1/2" MINI-HOSE CLAMP	1	38	FT 0000548	GASKET - PUMP FLANGE	1
17	HOS0014342	BYPASS HOSE CNTL BOX TO TANK	1	39	NMS0000117	5/16 NC WHIZ NUT - PLATED	4
18	FT 0000219	3/8 JIC X 1/4 NPT MALE CONN	2	40	FT 0000547	PUMP, WEBSTER 22YBADO12-2RB	1
19	01-719	3/8 X 4 EH BLACK NIPPLE	1	41	F 0006719	1/4 JIC X 3/8 NPT 90° MALE ELB	1
20	WIS0007500	3/4 INTERNAL STAR WASHER-PLT	2	42	TBE0016135	TUBING ASSY-TENSION PUMP	1
21	HYD5924040	1/2" BULKHEAD NUT	1	43	HYD5205022	1/4 JIC X 1/4 NPT MALE CONN	1
22	SCC0000302	3/8 X 1 NC HT CAP SCREW	2				

Bullgear Luber



Bullgear Luber

REF NO.	PART NO.	DESCRIPTION	QTY. USED	REF NO.	PART NO.	DESCRIPTION	QTY. USED
1	PPE3752500	3/8 X2-1/2 STD BLK PIPE NIPPL	1	19	FT 0000549	1/4" BULKHEAD FITTING	1
2	FT 0000547	PUMP, WEBSTER 22YBADO12-2RB	1	20	F 0007418	1/4 X 1/8 STD BLK PIPE BUSHING	1
3	FT 0000103	3/8 X 1/4 BLK HEX PIPE BUSHING	1	21	F 0001441	1/4 X 1/8 90° ELBOW	2
4	HYD5405022	1/4 JIC X 1/4 NPT 90° MALE ELB	1	22	NYL0000250	1/4" NYLAFLOW TUBING - TYPE H	58'
5	NCH0003125	5/16" NC HEX NUT	4	23	AO 0000312	5/16" FABRIC WIRE LOOM	50'
6	WLK0003125	5/16" LOCKWASHER	4	24	F 0005264	CLMP-GAS LIN-FUEL INDICAT WIR	1
7	ZZ 0000403	1/8 X 1/8 X 1 KEY	1	25	F 0007550	GROMMET F/BULL GEAR SHIELD	1
8	FT 0000548	GASKET - PUMP FLANGE	1	26	LUB0323060	1/8" PRESSURE FITTINGS-VALVES	2
9	TBE0016135	TUBING ASSY-TENSION PUMP	1	27	FT 0000171	1/8 STD BLK PIPE 90° ELBOW	2
10	HYD5205022	1/4 JIC X 1/4 NPT MALE CONN	1	28	PPE1250500	1/8 X 5 STD BLK PIPE NIPPL	2
11	FT 0000559	BULLGEAR LUBER TANK GASKET	1	29	PPE0040125	1/8 STD BLK PIPE TEZ	1
12	HYD5924040	1/2" BULKHEAD NUT	1	30	SMR1032050	10-32X1/2 RH MACH SCREW	2
13	WIS0007500	3/4 INTERNAL STAR WASHER-PLT	1	31	WCT0000100	#10. FLATWASHER - PLATED	2
14	LUB0006739	BULLGEAR LUBER TANK ONLY	1	32	CLP0000115	VINYL CLAMP-1/4" W/ 9/32" HOLE	2
15	FT 0000538	5/16 COPPER SEALING WASHER	4	33	WLK0000100	#10 LOCKWASHER - PLATED	2
16	SCC0020002	5/16 X 1 NC HT CS - PLATED	4	34	NFH0001032	10-32 NF HEX NUT - PLATED	2
17	CRA0013775	BULLGEAR LUBER CRANK HANDLE	1	35	F 0008312	1/4 SLEEVE F/F1441	2
18	FT 0000553	3/4 X 1 X 1/16 FIBER WASHER	1	36	F 0007626	FREEMAN BULLGEAR GREASE-1 GAL	1

MOISTURE EXTRACTOR

LUBRICATION POINTS	NO. OF LUBRICATION FITTINGS	RECOMMENDED LUBRICANT	FREQUENCY	
			MODEL 1200& 1400	MODEL 1600
Pinion shaft bearing	2- One each side on bearing housing	Gun grease - Lithium Base, N.L.G.I. # 2 *	WEEKLY	WEEKLY
Jack shaft bearing: (If so equipped)	2- One each side on bearing housing	" " "	WEEKLY	WEEKLY
Connecting rod housing swivel	1- On housing swivel	" " "	DAILY	DAILY
Connecting rod bearing gear end	1- On connecting rod	" " "	DAILY	8 HRS
Bull gear side plate bearings	2- One on each plate at bull gear shaft	" " "	WEEKLY	WEEKLY
Plunger rollers (If so equipped)	6- On plunger manifold	" " "	4 HRS	8 HRS
Plunger pin	1- On connecting rod end at plunger	" " "	4 HRS	4 HRS
Bull gears - Manually cranked lubrication system	2- Bull Gears	Freeman bull gear grease ** 6 to 10 turns of luber crank as required to keep gears coated	4 HRS	4 HRS
Tension control tank	Check daily	Anti-wear hydraulic oil 150-215 SUS @ 100 F or automatic transmission oil or SAE 10-40 motor oil	CHECK DAILY	

* Grease Specifications:

1. N.L.G.I. rating #2 Lithium Base
2. Base oil viscosity 900 to 2,150 SUS at 100 degrees Fahrenheit (200 to 470 Cst at 40 degrees Celsius)
3. Minimum dropping point 374 degrees Fahrenheit (190 degrees Celsius)
4. Maximum thickener content 11%
5. Minimum timken rating 40 lbs. (approx. 18.18 kg.)
6. Recommended additives
 - A.) Extreme pressure (E.P.)
 - B.) Anti-oxidation
 - C.) Anti-rust

- ** Part No. F0007609 Quickset Gear Lub. 1 Quart
 Part No. F0007626 " " " 1 Gallon

FACTORY RECOMMENDED ANNUAL SERVICE - 1600 ME

REPLACE

TENSION CONTROL PUMP FILTER *
TENSION CONTROL PUMP DRIVE CHAIN

INSPECT AND REPLACE AS REQUIRED

CONNECTING ROD PIN - PLUNGER END
" " BEARING - PLUNGER END

CONNECTING ROD CRANK PIN - BULL GEAR END
" " BEARING - BULL GEAR END
" " PIVOT PIN & BUSHINGS - BULL GEAR END

PLUNGER ROLLERS (IF SO EQUIPPED)
" " RAILS
" SIDE SLIDE RAILS
" SIDE HARD SLIDE PLATES

PLUNGER SLIDES (IF SO EQUIPPED)
" TOP SLIDES - AFTER 3/16" WEAR (MINIMUM 2-5/16" THK)
" BOTTOM SLIDES " " " " " "

TENSION CONTROL CYLINDER

PINIONS

BULL GEARS: TEETH
CRANK PIN HOLES

* FILTER SERVICE NOTES *

USE ONLY FRAM# PH 966B, FREEMAN PART# FT546

AFTER CHANGING OIL AND FILTER FOR TENSION CONTROL SYSTEM, REMOVE DISCHARGE LINE FROM PUMP AND OPERATE UNTIL ALL AIR HAS BEEN EXPELLED AS INDICATED BY A CLEAR STREAM OF OIL.

BULLGEAR ADJUSTMENT

NOTE: Broken bullgear teeth can be caused by:

1. Improper pinion shaft alignment
 2. Too much backlash at TDC
 3. Inadequate bullgear lubrication
 4. Too hard shear bolt
1. Ensure the bullgears are properly installed by noting the orientation of the letter-number code stamped on the inside surface near one pin hole of each gear. The stamped hole of one gear should be opposite the stamped hole of the other gear.
 2. Disconnect connecting rod from bullgears.
 3. Ensure that the pin holes and the connecting rod pin are clean enough to slide the pin through both holes, one at a time, by hand.
 4. Adjust pinion shaft away from bullgears.
 5. Remove all shims from under each of the four bolts on each of the two bullgear bearing mount side plates. With the bolts loose, push the side plate against the frame angles and shim one corner if necessary to provide a flat mounting surface. Tighten the bolts.
 6. Rotate the pin holes to the top. (The primary pin holes are the stamped ones. The unstamped pair may be used if the primaries are worn). Slide the pin through one bullgear toward the hole in the other gear. The pin should align exactly with the hole but may not slide on through. If it

doesn't align with the hole, it may be raised or lowered by putting an equal thickness of shims under both bottom corners or both top corners respectively of the side plate supporting the bullgear with the pin. Once this bullgear is aligned to point its pin at the other hole, remove the pin and slide it into the hole in the other gear. Follow the same procedure to adjust this gear to move its pin up or down to align with the opposite hole. At this point the pin should slide through both bullgears.

7. Rotate the pin holes to the bottom position. The holes should align as at the top to allow the pin to slide through both gears. If the pin doesn't align as it should, shim the appropriate gear to obtain an error at the bottom position which is equal but opposite to the error obtained with the pin in the top position.
8. Rotate the gears to position the pin holes rearward; top dead center of the plunger stroke. Repeat the alignment procedure. This time equally shim either both front corners or both rear corners to point the pin either rearward or forward respectively, until the pin points directly at the opposite hole. Remove the pin and insert it through the opposite hole. Shim this gear to align the pin so that it can be pushed through both bull gears.

PINION AND BULLGEAR ADJUSTMENT

The flywheel should be parallel to the frame plus or minus $\frac{1}{8}$ ", with pinions meshing evenly with the bullgear teeth, "A," Fig. 44.

The lash of the pinion gears should have between $\frac{1}{8}$ " and $\frac{3}{8}$ " of free play on the rim of the flywheel at "B." Measure this when the connecting rod is fully extended and blocked to prevent bullgear movement.

To correct excessive free play adjust set screws "C." Be certain both sides are adjusted evenly to avoid serious equipment damage.

Caution: Always shut off tractor and baler when inspecting, adjusting, lubricating, or servicing baler.

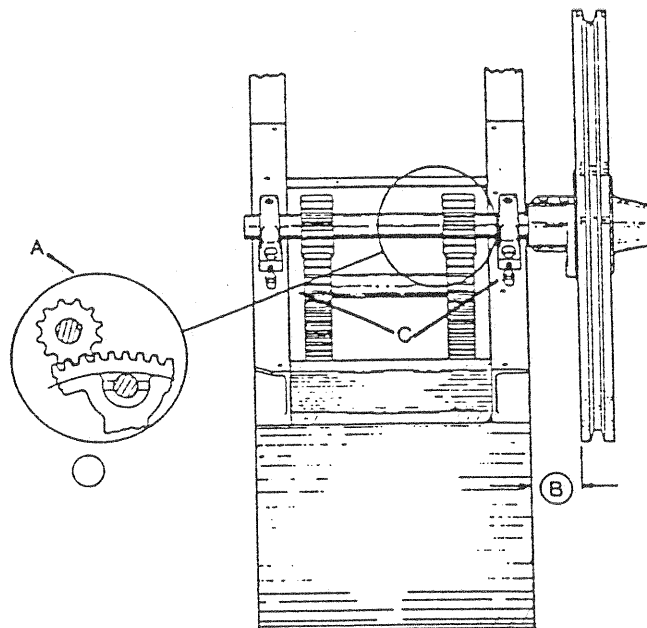


Fig. 44

1600 ME MOISTURE REMOVAL REGULATION

THE AMOUNT OF MOISTURE REMOVED IS CONTROLLED BY THE AMOUNT OF RESISTANCE PLACED ON THE PASSAGE OF PRODUCT PRESSED THROUGH THE MACHINE. THIS RESISTANCE IS DEPENDENT UPON THE FRICTIONAL CHARACTERISTICS OF THE PRODUCT, AND UPON THE AMOUNT OF RESTRICTION PROVIDED BY THE HYDRAULIC TENSION CONTROL SYSTEM WHICH FORCES THE FOUR TENSION RAILS AGAINST THE PRODUCT AT THE DISCHARGE END.

THE HYDRAULIC OIL PRESSURE OF THE TENSION CONTROL SYSTEM CAN BE ADJUSTED TO REGULATE THIS RESTRICTION. ADJUSTMENT IS ACCOMPLISHED AT THE TENSION CONTROL BYPASS BOX BY LOOSENING THE JAM NUTS ON THE PROTRUDING 3/8" THREADED ROD AND BY TURNING THE NUTS CLOCKWISE TO INCREASE OR COUNTERCLOCKWISE TO DECREASE PRESSURE.

A PRESSURE READING OF 100 PSI ON THE TENSION CONTROL CYLINDER GAUGE IS USUALLY ADEQUATE FOR MOST PRODUCTS. THE MAXIMUM PRESSURE ATTAINABLE IS 200 PSI. THE OPERATING LIFE OF THE MACHINE IS INCREASED BY USING THE LOWEST ACCEPTABLE TENSION CONTROL PRESSURE SETTING.

