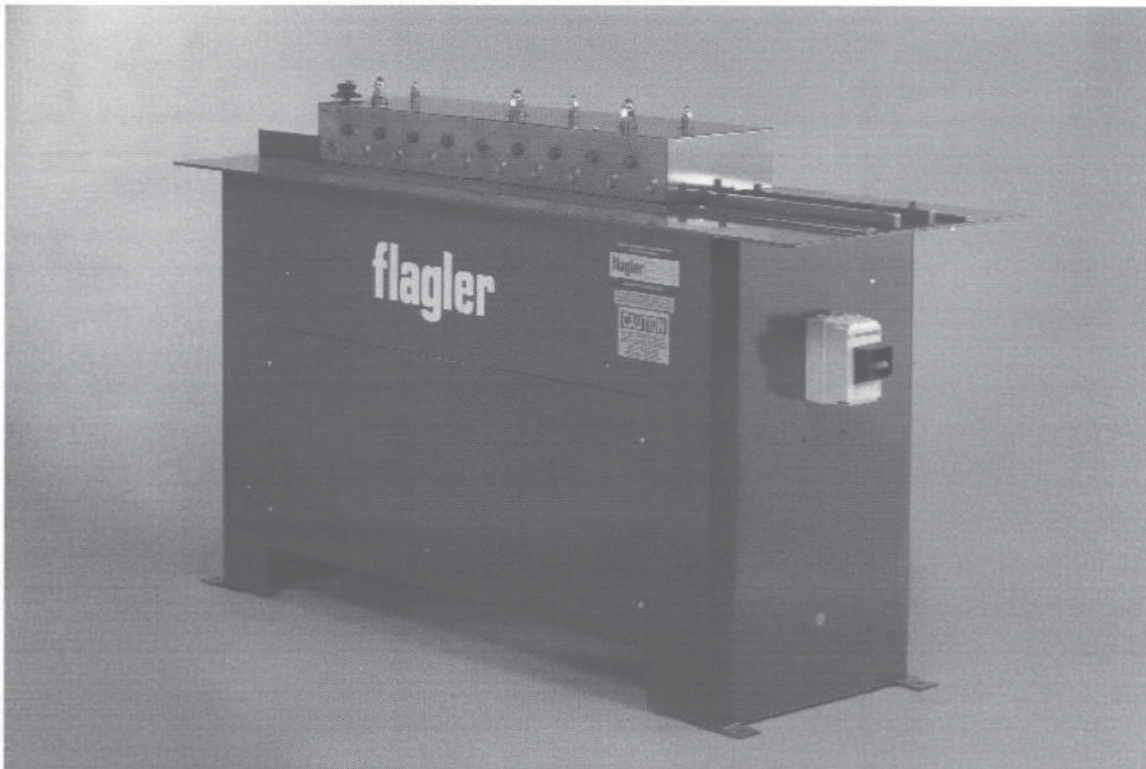


# flagler

Designers and Manufacturers of Sheet Metal Roll Forming Machinery

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## 20 GA High Speed Button Lock Machine Operating Instructions and Parts List



P 586-749-6300

56513 Precision Drive Chesterfield, MI 48051

[www.flaglercorp.com](http://www.flaglercorp.com)

F 586-749-6363

FLAGLER MODEL 20 GA. HI-SPEED BUTTON LOCK MACHINE

ELECTRICALS

Machine is equipped with 5 HP 220/440/3/60/1800 RPM open type ball bearing motor with manual overload starter.

INSTALLATION

Wire starter box for 220 volts, 3 phase, 60 cycle electricals. Check order for voltage of machine as delivered. Unit is normally wired for 220 volt unless otherwise specified.

OPERATION FEMALE LOCK

Female lock mounted inboard. Roll capacity - 20 gage, cold rolled mild steel.

ENTRANCE GAGE SETTING

Entrance angle gage is set by placing a straight edge along the outer edge of the left front machine plate and measuring 3- $\frac{1}{4}$ " from straight edge to end of gage nearest the No. 1 roll, and 3- $\frac{5}{16}$ " from straight edge to end of gage furthest from No. 1 roll. These measurements will leave a  $\frac{1}{16}$ " taper in the entrance gage setting which is necessary to hold the material to the gage. Note the above settings are approximate and may be slightly increased or decreased to meet your particular requirements. Run a piece of test material through the machine and note the results. If the results are satisfactory, the machine is ready for production running. If not satisfactory, the following adjustment may be necessary. Should material have an excessive upward bow, adjust the straightening roll on the exit end of the machine to compensate for the excessive bow.

STUD ADJUSTMENT

The three main hold down studs should be adjusted to the point that produces the most satisfactory configuration. Suggested settings. Draw hold down studs snug and loosen one quarter of a turn.

EXIT GAGE

Exit angle iron should be set about  $\frac{1}{32}$ " away from the material. After a satisfactory setting is obtained on all planes, lock all entrance gage studs, exit angle iron, etc., firmly into position for production running.

OPERATION MALE LOCK

Male lock mounted on auxiliary shafts. Roll capacity 20 gage, cold rolled, mild steel.

ENTRANCE GAGE SETTING

Entrance Gage setting is set from a straight edge placed along the outer face of the auxiliary rolls. Measure 1" from a straight edge to the end of the entrance gage bar furthest from the No. 1 roll. This feed gage is to be kept parallel unless severe run-out conditions are noted. If these conditions are noted, a  $\frac{1}{8}$ " taper in the entrance gage setting will assist in eliminating the run-out. Note the above settings are approximate and may vary slightly to meet your requirement. Run a test piece of material through the machine and note the results.

STUD ADJUSTMENT

The four studs that pass through the auxiliary plate may be set to the setting that produces the most satisfactory section. Suggested setting. Set stud nuts snug and loosen one quarter of a turn.

EXIT ANGLE IRON

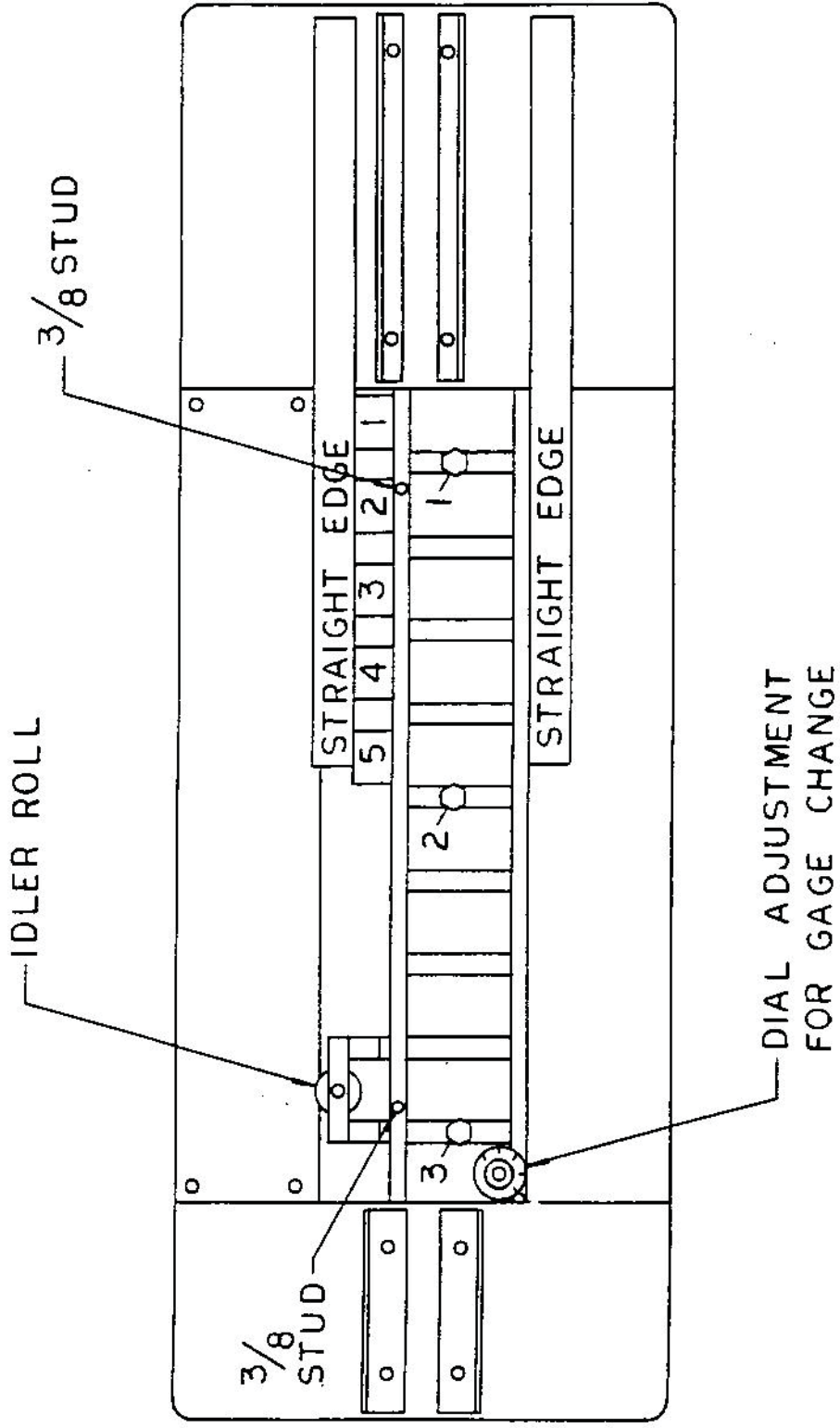
Exit angle iron should be about 1/32" away from the material. After a satisfactory setting is obtained on all planes, lock all entrance gages, stud nuts, ect., firmly into position for production running.

ADDITIONAL INFORMATION

Operator must hold material against entrance gages when feeding the machine. Operator should hold material against exit angle iron when the tail end of material is nearing the last roll to prevent end run-out.

LUBRICATION DATA

Five grease fittings are located beneath the machine stand on a central lubrication panel. These fittings lubricate the main drives which should be kept well lubricated. Apply grease occasionally to the gears to prevent galling and excessive gear wear.



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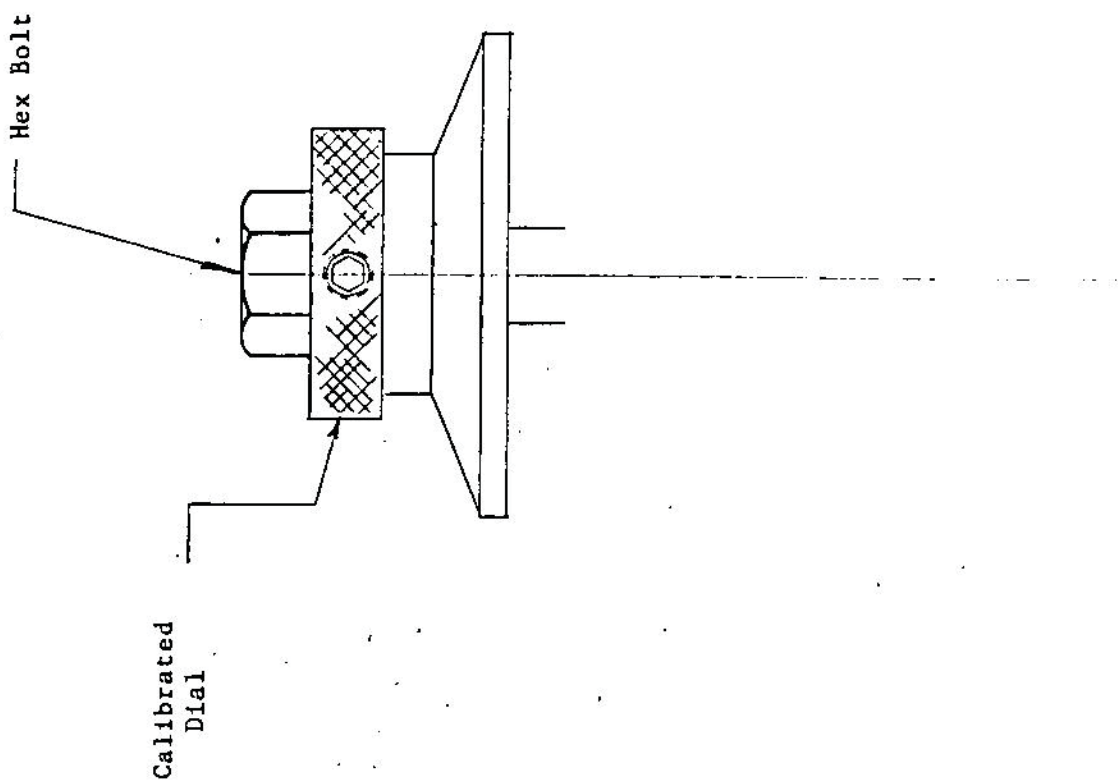
This machine has been set at the factory, however, additional adjustments may be needed depending upon metal thickness - temper - etc., and individual preference for fit of the locks.

To tighten the female lock;

1. Set the dial at the gage required.
2. Loosen the set screw on the dial.
3. Turn the Hex Head bolt clockwise approx. 1/4 turn.
4. Re-tighten set screw.
5. Run a test piece for evaluation.

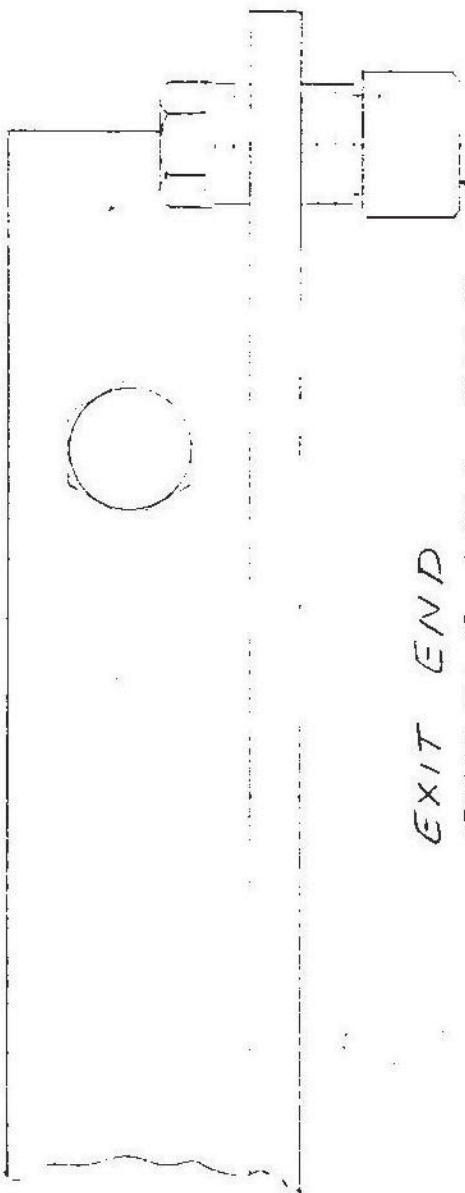
Note:

Too tight a female lock could cause a bow in the part which cannot be removed.



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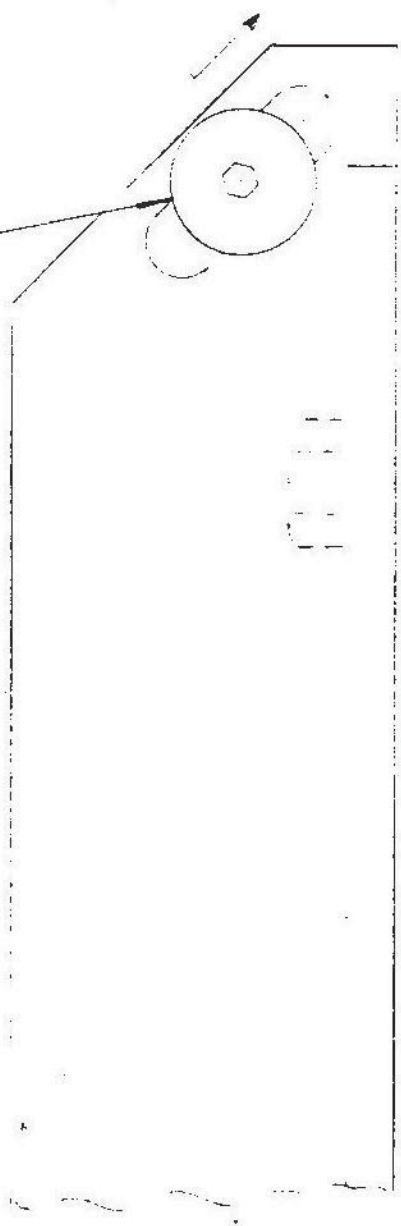
TOP VIEW



EXIT END  
FEMALE LOCK SIDE

CAM  
BEARING

SIDE VIEW

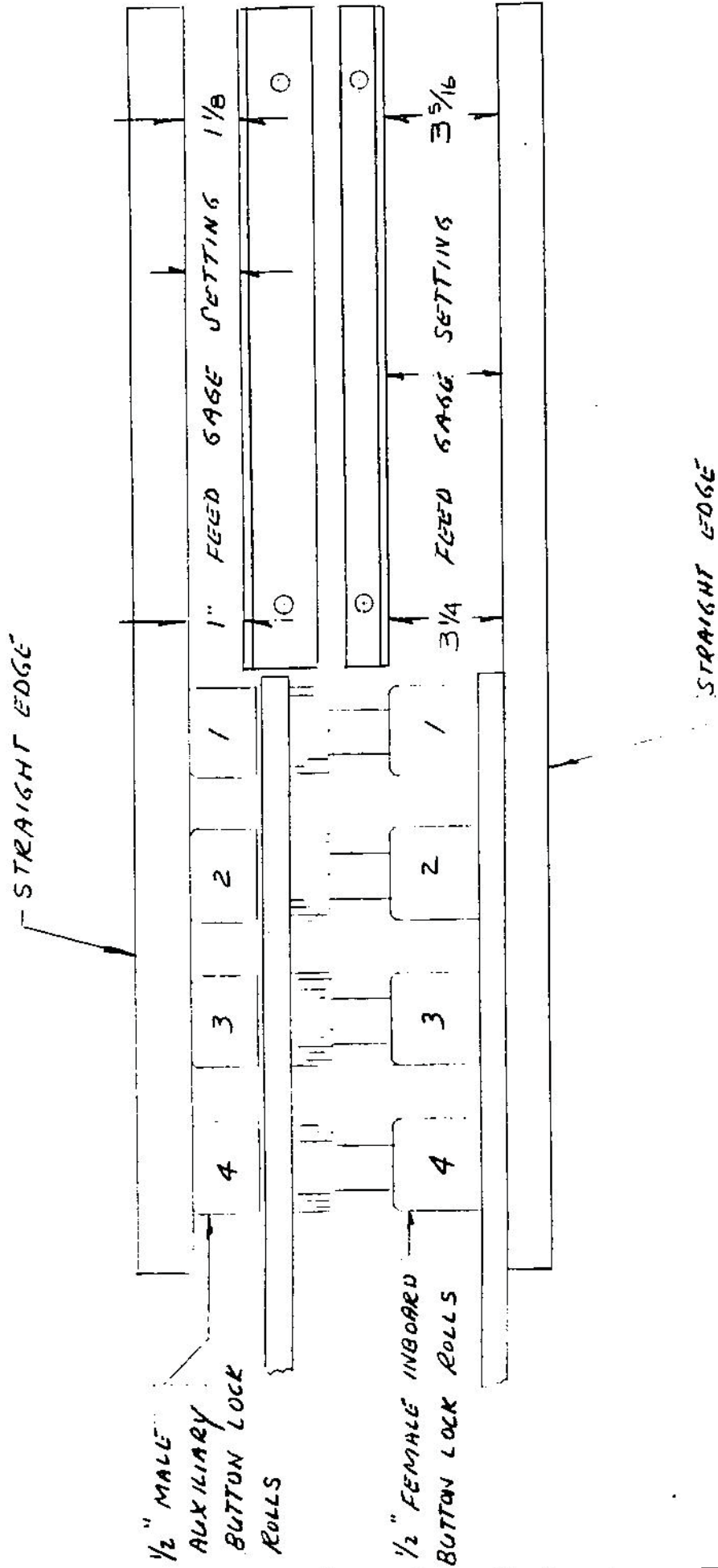


IF THE FEMALE LOCK  
BOWS UPWARD - ADJUST  
THE CAM BEARING DOWN  
FORWARD

DIIRECTION OF  
MATERIAL

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# MATERIAL

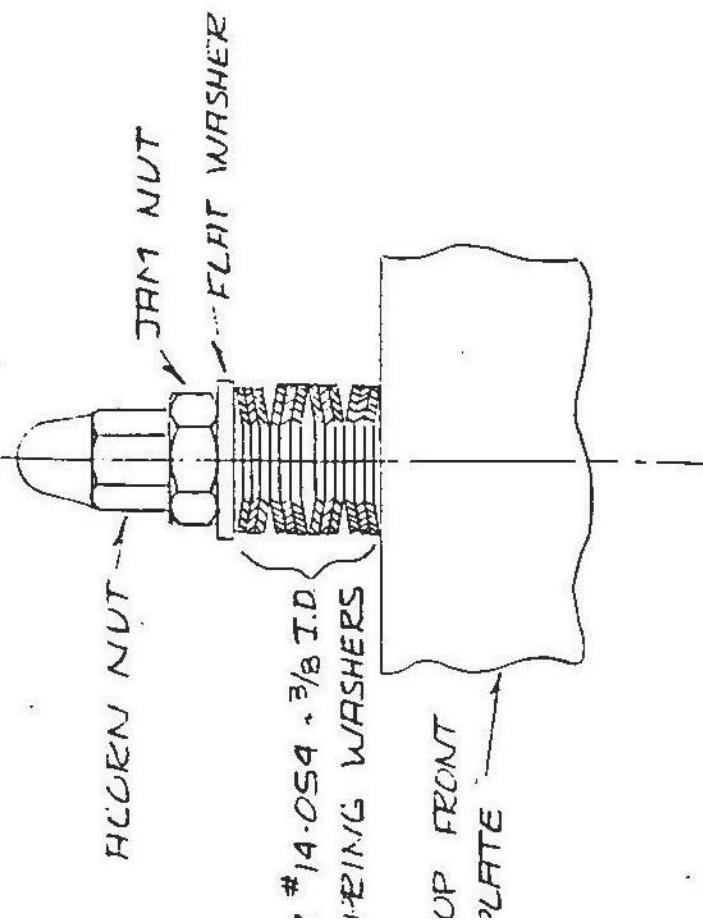


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HI-SPD. BUTTON CK. SPRING WASHER ASSY. INSTRUCTIONS

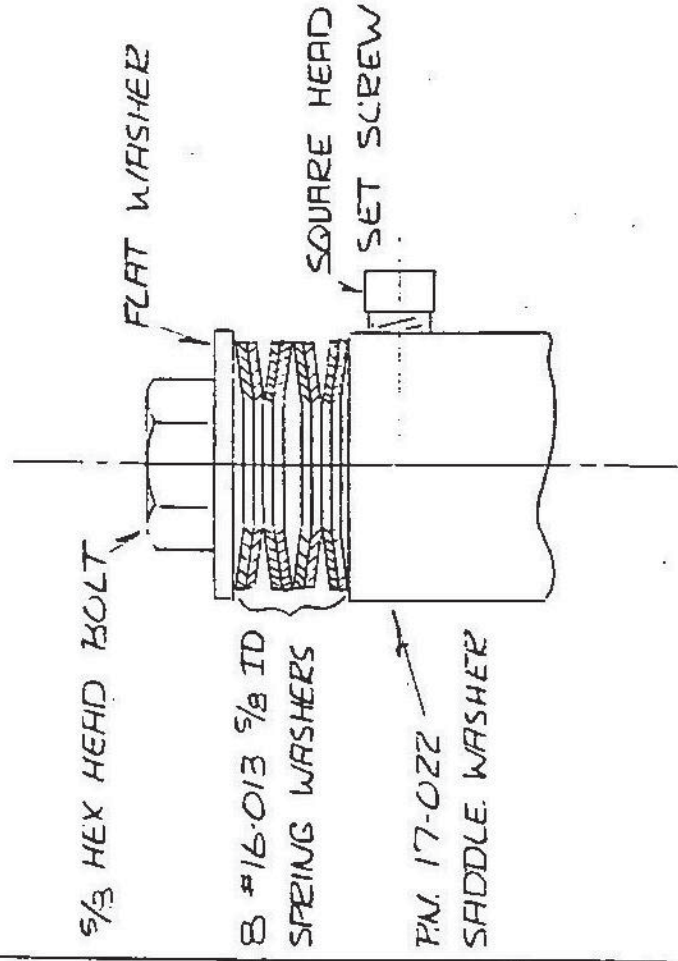
TO WORK PROPERLY THE ASSYS. MUST BE STACKED AS SHOWN

3/8 HOLD DOWN STUDS



WHEN INSTALLING TIGHTEN JAM NUT UNTIL SPRING WASHERS ARE FLAT THEN BACK OFF ONE TURN AND TIGHTEN JAM NUT.

5/8 HOLD DOWN



WHEN INSTALLING TIGHTEN 5/8 BOLT UNTIL SPRING WASHERS ARE FLAT THEN BACK OFF 3/4 TURN AND TIGHTEN SQUARE HEAD SET SCREW

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## 20 GA. HIGH SPEED BUTTON LOCK PARTS LIST

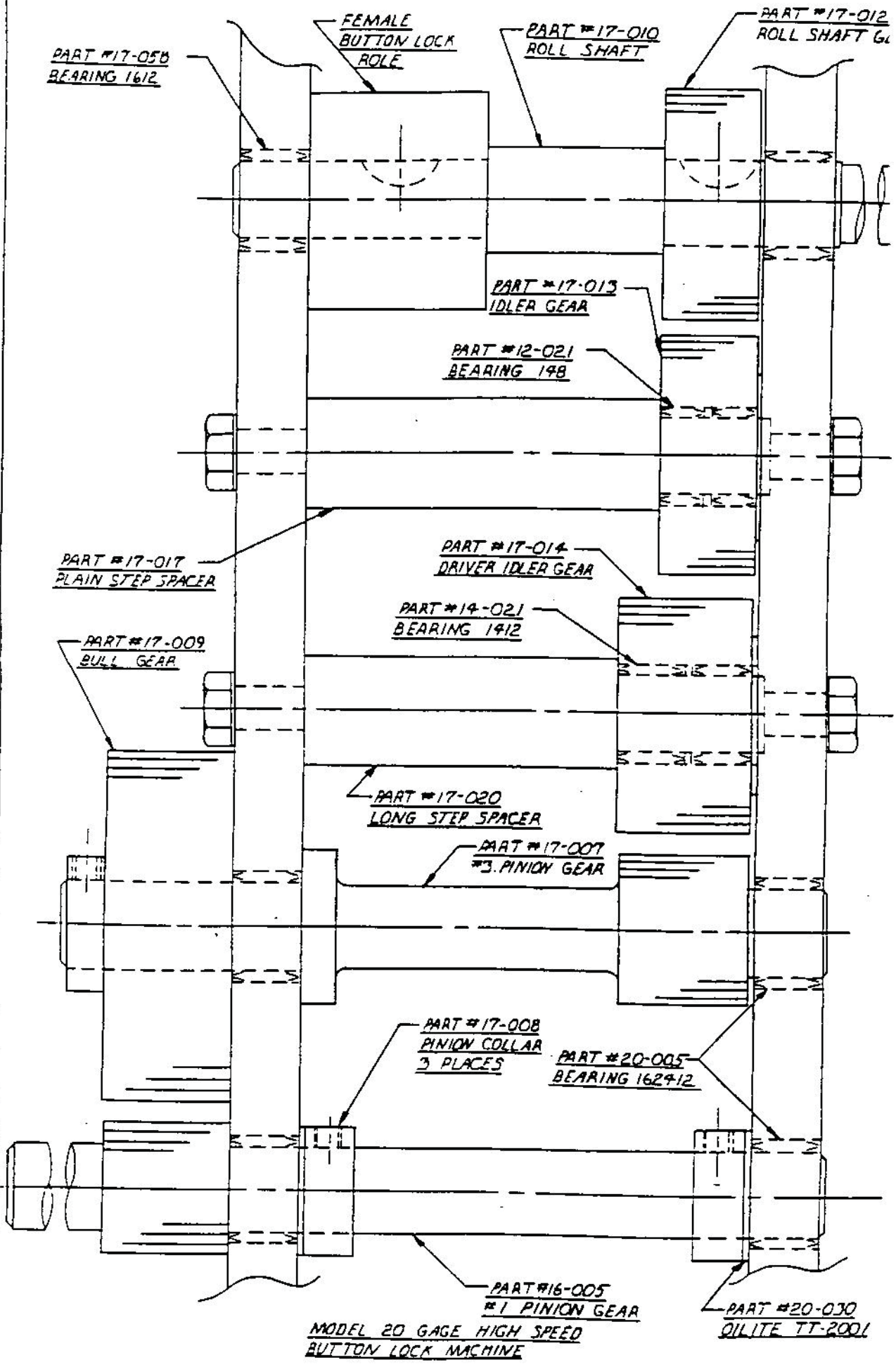
Part No.	Description	Quantity
21-001	Bottom Front Plate	1
21-002	Bottom Back Plate	1
21-003	Top Front Plate	1
21-004	Top Back Plate	1
16-005	#1 Pinion Gear	1
17-007	#2 Pinion Gear	1
17-062	Pinion Collar w/keyway	1
20-040	Collar	2
17-009	Bull Gear	1
17-010	Roll Shaft	19
17-011	Roll Shaft (T-10)	1
17-012	Roll Shaft Gear	20
17-013	Idler Gear	7
17-014	Driver Idler Gear	2
17-015	Plain Spacer	11
17-017	Plain Step Spacer	4
30-001	Undercut Plain Step Spacer	2
17-018	Plain Drilled Spacer	3
17-019	Drilled & Tapped Step Spacer	1
17-020	Drilled & Tapped Long Step Spacer	1
30-002	Undercut Drilled & Tapped Long Step Spacer	1
17-022	Saddle Washer	3
16-013	Spring Washer	16
14-054	Spring Washer	48
17-058	Bearing 1612	40
12-021	Bearing 148	14
14-021	Bearing 1412	4
20-005	Bearing 162412	4
17-059	Hold Down Stud	4
17-025	Spacer Washers	4
30-003	Dial	1
17-027	Dial Block	1
17-028	Dial Spring	1
17-029	Dial Pin	1
17-030	Positioning Pin	1
30-004	Machine Cover	1
30-008	Cabinet Assembly	1
17-037	Skirt	2
20-021	Upper Side Panel	2
20-022	Louver Panel	2
17-040	Feed Plate	1
17-041	Take-Off Plate	1
30-009	Top-Side Plate	1
30-010	Top-Side Plate	1
17-063	Feet	2

**20 GA. HIGH SPEED BUTTON LOCK PARTS LIST**

21-018	Bottom Side Angle	2
14-040	Lag Screw Plate	4
17-050	Motor Mount	2
14-048	Motor Clamp Assembly	4
21-026	Motor	1
21-030	Starter	1
21-027	Heater Element	3
20-026	Sheave (Driver)	1
17-053	Sheave (Driven)	1
17-054	Bushing	1
22-036	"V" Belt	2
17-046	Lube Line Assembly (with #14-053)	3
14-041	Lube Line Assembly (with #14-053)	2
14-053	Lube Line Fitting	10
10-031	Label - Manufacturer	1
10-040	Label- OSHA	1
10-042	Label - Warning	1
17-048	Feed Gauge	2
17-049	Take-Off Gauge	1
30-014	Take-Off Gauge	1
30-102	Cam-Follower	1
30-051	Top 1 Female Button Lock Roll	1
30-052	Top 2 Female Button Lock Roll	1
30-053	Top 3 Female Button Lock Roll	1
30-054	Top 4 Female Button Lock Roll	1
30-055	Top 5 Female Button Lock Roll	1
30-056	Top 6 Female Button Lock Roll	1
30-057	Top 7 Female Button Lock Roll	1
30-058	Top 8 Female Button Lock Roll	1
30-059	Top 9 Female Button Lock Roll	1
30-060	Top 10 Plain Collar	1
30-061	Top 10 Plain Ring	1
18-085	Knurled Ring	1
30-063	Bottom 1 Female Button Lock Roll	1
30-064	Bottom 2 Female Button Lock Roll	1
30-065	Bottom 3 Female Button Lock Roll	1
30-066	Bottom 4 Female Button Lock Roll	1
30-067	Bottom 5 Female Button Lock Roll	1
30-068	Bottom 6 Female Button Lock Roll	1
30-069	Bottom 7 Female Button Lock Roll	1
30-070	Bottom 8 Female Button Lock Roll	1
30-071	Bottom 9 Female Button Lock Roll	1
30-072	Bottom 10 Female Button Lock Roll	1
30-099	Helper Staios 4-5, 6-7, 7-8	3
30-100	Helper Station 3-4	1
30-073	Top 1 Male Button Lock Roll	1

**20 GA. HIGH SPEED BUTTON LOCK PARTS LIST**

30-074	Top 2 Male Button Lock Assembly	1
30-075	Top 3 Male Button Lock Roll	1
30-076	Top 4 Male Button Lock Roll	1
30-077	Top 5 Male Button Lock Roll	1
30-078	Top 6 Male Button Lock Roll	1
30-079	Top 7 Male Button Lock Roll	1
30-080	Top 8 Male Button Lock Roll	1
30-093	T-9 Male Button Lock Idler Roll Assembly	1
30-081	Top-9 Male Button Lock Roll w/Cam Follower	1
30-094	Idler Roll Holder	1
30-102	Cam Follower	1
30-082	Top 10 Male Button Lock Roll	1
30-083	Bottom 1 Male Button Lock Roll	1
30-084	Bottom 2 Male Button Lock Roll Assembly	1
30-085	Bottom 3 Male Button Lock Roll	1
30-086	Bottom 4 Male Button Lock Roll	1
30-087	Bottom 5 Male Button Lock Roll	1
30-088	Bottom 6 Male Button Lock Roll	1
30-089	Bottom 7 Male Button Lock Roll	1
30-090	Bottom 8 Male Button Lock Roll	1
30-091	Bottom 9 Male Button Lock Roll	1
30-092	Bottom 10 Male Button Lock Roll	1
30-101	Toll Bit	6



PART #17-058  
BEARING 1612

FEMALE  
BUTTON LOCK  
ROLE

PART #17-010  
ROLL SHAFT

PART #17-012  
ROLL SHAFT G6

PART #17-013  
IDLER GEAR

PART #12-021  
BEARING 148

PART #17-017  
PLAIN STEP SPACER

PART #17-014  
DRIVER IDLER GEAR

PART #14-021  
BEARING 1412

PART #17-009  
BULL GEAR

PART #17-020  
LONG STEP SPACER

PART #17-007  
#3 PINION GEAR

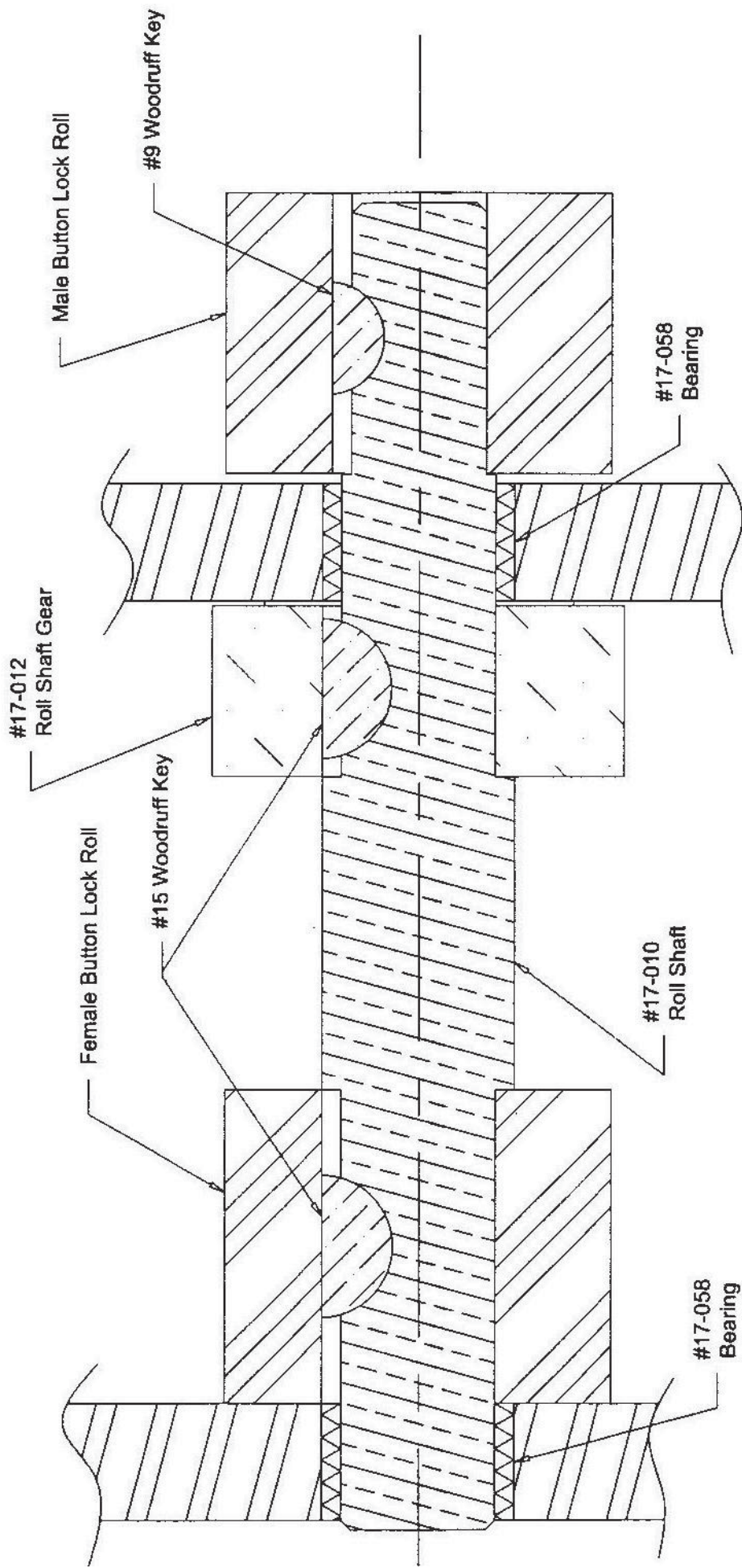
PART #17-008  
PINION COLLAR  
3 PLACES

PART #20-005  
BEARING 162412

PART #16-005  
#1 PINION GEAR

PART #20-030  
DILITE TT-2001

MODEL 20 GAGE HIGH SPEED  
BUTTON LOCK MACHINE



**Hi-Speed 1/2" Button Lock Machine**

Typical Roll Shaft assembly except Station T-10

OUR NEW  
AREA CODE IS  
**586**

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