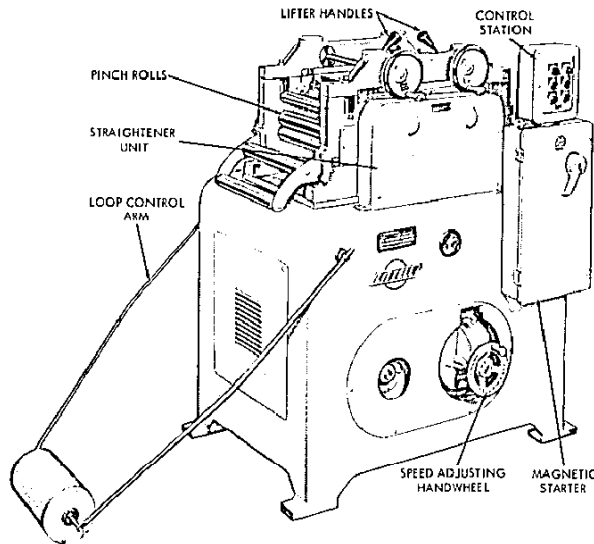


PARTS LIST AND OPERATING INSTRUCTIONS FOR NUMBER 212 SERIES VARIABLE SPEED STRAIGHTENING MACHINE



OPERATING INSTRUCTIONS

ELECTRICAL CONNECTIONS

Check motor and electrical controls furnished with machine for operating voltage. Connect to power source of proper voltage and electrically ground machine before putting into operation. See wiring diagram furnished with machine.

ELECTRICAL CONTROLS

The machine is equipped with a magnetic starter and a six unit control station. The six unit control station consists of a selector type switch arranged for manual or automatic operation, stop and start push buttons, an "ON" indicator light and two push button switches for forward or reverse "jogging" when the selector switch is in the "HAND" or manual position only. (When selector switch is in the "AUTO" or automatic position, machine will operate only in forward direction.)

For manual operation or "jogging," turn selector switch counterclockwise to "HAND" position and press "FORWARD" or "REVERSE" button, as required. Machine will operate only as long as either button is depressed.

For automatic operation, turn selector switch clockwise to "AUTO" position. The machine will run continuously unless the loop control arm is in the extreme down position.

LUBRICATION

Before placing machine into operation, check all parts for proper lubrication. Lubrication requirements are as follows:

- Variable Speed Drive. Lubricate in accordance with manufacturer's recommendations as shown on unit.
- Straightener Unit. Lubricate all operating parts daily in accordance with instructions shown on lubrication plate mounted on side of machine.

REFER TO PAGE 6 FOR SPECIFIC LUBRICATION RECOMMENDATIONS.

FEEDING DIRECTION

The machine, as normally shipped, is arranged for right to left direction of operation. Machines can be arranged for left to right direction of operation on special order only.

STRAIGHTENER UNIT ADJUSTMENT

The bank of upper straightener rolls must be adjusted for the thickness, width, and temper of the material to be straightened. Higher settings are required for thicker and softer materials; lower for thinner and harder materials. The first or incoming roll of the upper bank should be set lower than the last or outgoing roll so as to give a slight up curve to the material. These adjustments are accomplished by turning the worm at either end of the bank with the handwheel provided. It may be necessary to experiment with different settings to find the best for your material. Once found, record the settings indicated on the dials for the specific material being straightened.

PINCH ROLL ADJUSTMENT

The pinch roll springs for the incoming pinch roll must be drawn down to exert sufficient pressure to push the material through the straightener rolls without slippage. Adjust spring setscrews evenly to assure straight tracking of the material through the rolls and to avoid creeping to either side. The same tension adjustments must then be made to the outgoing pinch roll-spring setscrews. Springs must not be drawn down solid at any time.

SPEED ADJUSTMENT

To prevent running out of material or frequent starting and stopping of straightener, set speed of straightener at speed of using equipment. Calculate approximate feeding speed of the using equipment (strokes per minute x feed length). With straightener running, and loop control arm just above off position, adjust speed adjusting handwheel on Moto - Drive Unit to speed at which stock is being used.

LOOP CONTROL ARM

The loop control arm maintains a constant loop of material between the straightening machine and the using equipment. If the loop of stock exceeds normal operating depth, the loop control arm drops, thus shutting off the straightening machine motor. As excess stock is used up by the using equipment, the loop control arm raises and starts the straightening machine which then resumes feeding of stock to the using equipment. This function is accomplished by the use of adjustable cams located within the base of the machine, which actuate "ON-OFF" limit switches.

The cams can be easily adjusted on location to meet specific operating conditions. To adjust, rotate cams on shaft until desired results are obtained.

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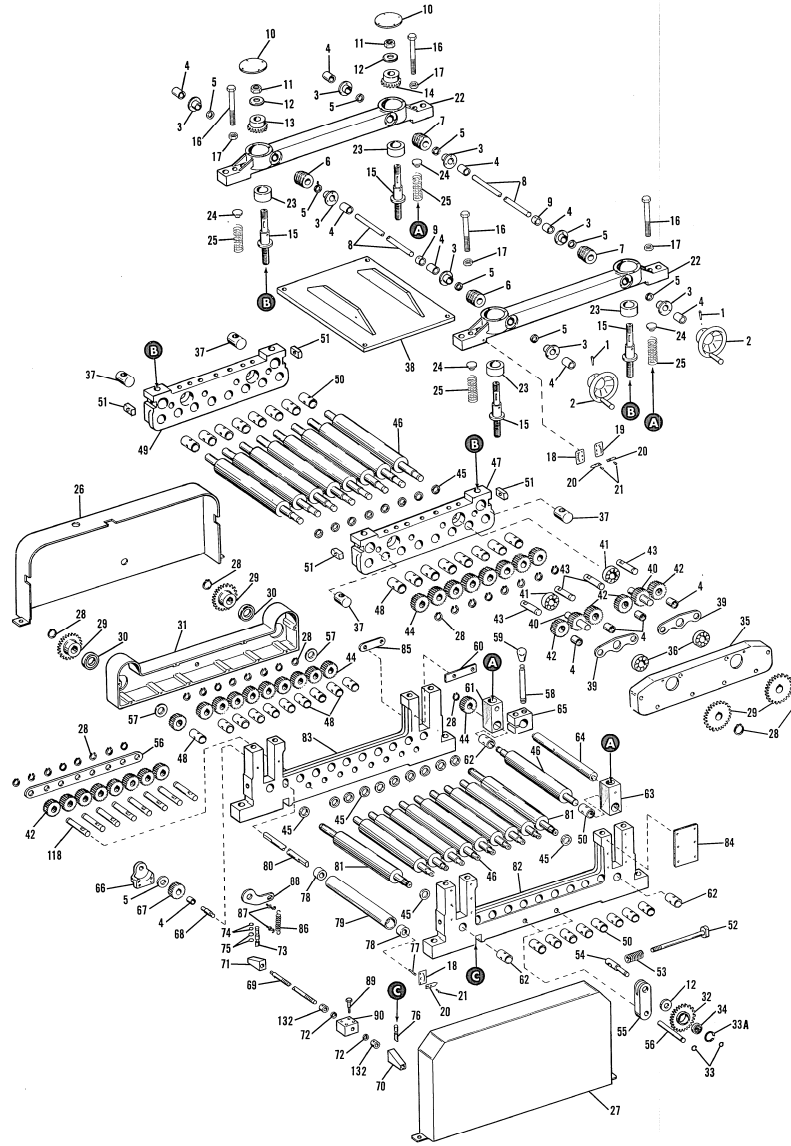
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CHICAGO, ILLINOIS 60613



No. 212-17-PD STRAIGHTENING MACHINE

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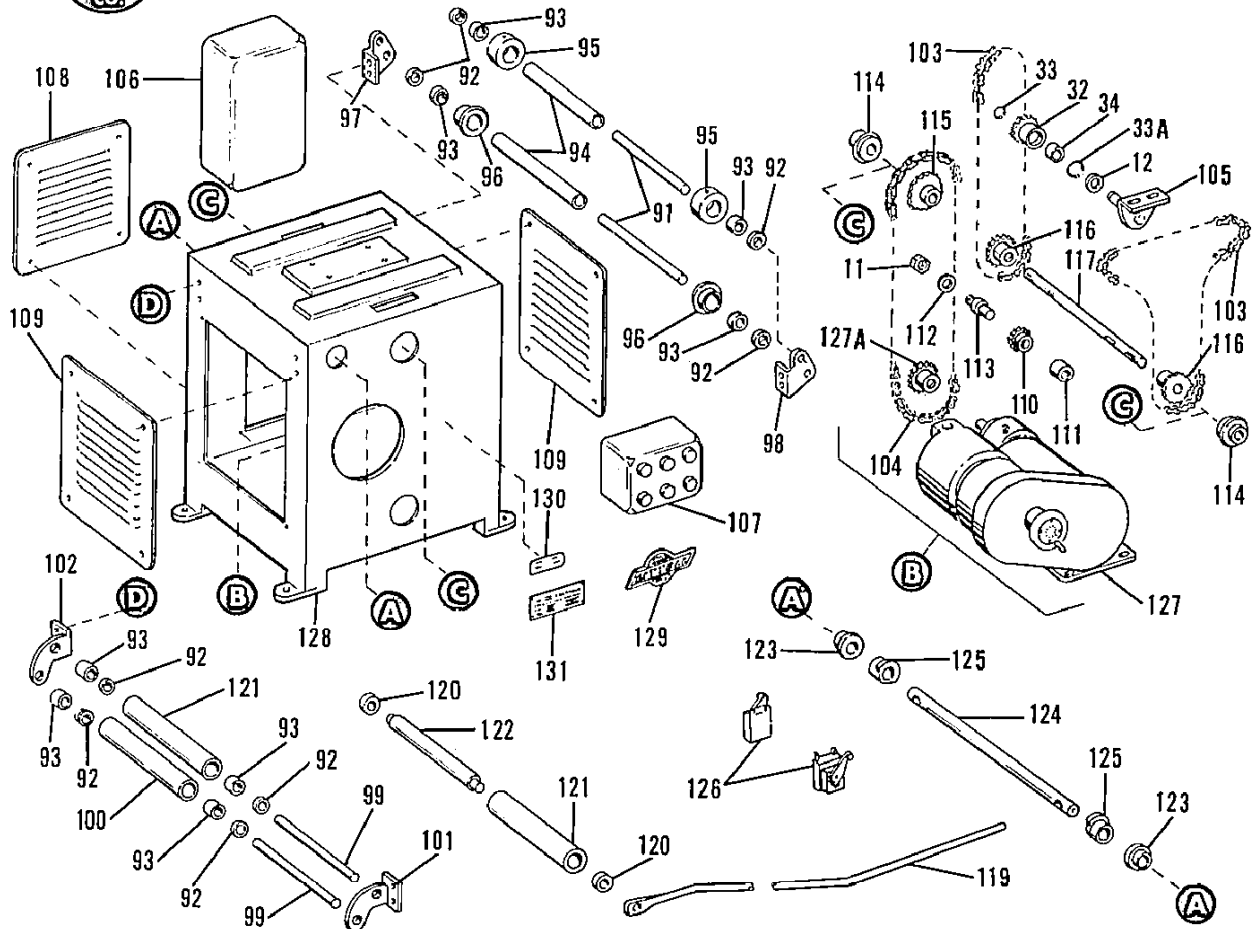
PARTS LIST

INDEX NO.	DESCRIPTION	PART NO.	INDEX NO.	DESCRIPTION	PART NO.
1	Pin - Roll 3/16" x 1-3/4" (PS)	O-00000	46	Roll - Straightener - Smooth - 12"	B-21805
2	Handwheel	B-41607	47	Frame - Upper Bearing - Front	B-27040
3	Retainer - Worm - Gear Box	A-21798	48	Bushing - "OLLITE" #AA-1108-10	B-21764
4	Washer - Brass	O-91235	49	Frame - Upper Bearing - Rear	O-91922
5	Worm - L.H.	B-24068	50	Bushing - "OLLITE"	B-21765
6	Worm - R.H.	O-91724	51	#AA-1108-12	O-91921
7	Shaft - Handwheel - 18"	A-34034	52	Block - Radius	A-21815
8	Collar	A-21799	53	Rod - Spring	A-21790
9	Plate - Cover - Gear Box	O-90182	54	Spring - "DANLY" Die #9-1212-11	O-91919
10	Nut - Hex 7/8" - 14 (PS)	A-21797	55	Pin - Idler Sprocket	A-21759
11	Washer - Steel	O-00000	56	Pivot - Idler Sprocket	B-21792
12	Gear - Worm - L.H.	B-34564	57	Retainer - Rear Gear	A-21811
13	Gear - Worm - R.H.	O-91527	58	Spacer	B-34596
14	Pin - Pivot	O-91924	59	Handle - Lifter	A-21803
15	Screw - Adjusting	A-32876	60	Knob - Lifter Handle - "CHIGOLET"	O-90961
16	Screw - Sq. Hd. Set - 1/2" - 13 x 3-1/2" (PS)	O-00000	61	Support - Lifter Shaft	A-21801
17	Nut - Hex 1/2" - 18 (PS)	O-00000	62	Box - Flange Roller - Rear	A-40075
18	Plate - Indicator Dial - L.H.	A-34737	63	Bushing - "OLLITE" #AA-1108-3	O-91920
19	Plate - Indicator Dial - R.H.	A-17645	64	Box - Flange Roller - Front	B-21804
20	Pointer - Indicator	A-34758	65	Shaft - Lifter - 12"	B-28125
21	Pin - Pivot	A-34758	66	Clamp - Lifter Handle	B-28126
22	Bracket - Str. - Adj.	C-21795	67	Bracket - Idler Gear	A-21802
23	Bushing - "OLLITE" #AA-1110-1	O-92560	68	Ass'y - Idler Gear - Large	A-21795
24	Falton - Spring	A-21826	69	Shaft - Idler Gear	A-45895
25	Spring - Die - "DANLY" #9-1012-11	O-92484	70	Screw - Adjusting - 12"	B-21794
26	Guard - Rear Chain	B-21831	71	Block - R.H. Cam	B-28298
27	Guard - Front Chain	B-21819	72	Block - L.H. Cam	A-21823
28	Ring - Retaining - "WALDES" Tru - Arc #100-75	O-90011	73	Washer - Brass	A-21834
29	Sprocket - Driven - "CULLMAN" #60R18	A-70404	74	Pin - Cam	A-21822
30	Bearing - Ball "N. D." #20SL07	O-23850	75	Ring - "O" - "PARKER"	O-91537
31	Guard - Rear Gear	B-70405	76	#2-10 Comp. 47-741	O-91107
32	Sprocket - Idler - "CULLMAN" #60R18	O-91777	77	Cam - Pin	A-28297
33	Ring - Retaining - "WALDES" Tru - Arc #100-62	O-90923	78	Pin - "DANLY" #F0416-1	O-91833
34	Bearing - Ball "N. D." #499504	O-91370	79	Bearing - Roller - "ABC"	O-91934
35	Guard - Front Gear	O-91392	80	Roll - Adjustable Straightener - 12"	B-21820
36	Plate - Bridge - 12"	B-21812	81	Roll - Adjustable Straightener - 18"	B-27043
37	Retainer - Front Gear	O-91777	82	Shaft - Adj. Str. - Roll - 12"	B-28298
38	Gear - Power Idler	A-21809	83	Roll - Driven - Smooth - 18"	B-27044
39	Bearing - Ball "N. D." #499504	A-21810	84	Roll - Driven - Smooth - 12"	A-27041
40	Ass'y - Idler Gear - 2" P. D.	A-45896	85	Frame - Bearing - Front	D-21782
41	Pin - Idler	A-21792	86	Frame - Bearing - Rear	D-21783
42	Gear - Roll 3/8" P. D.	A-21807	87	Retainer - Bearing Box	A-21946
43	Seal - Oil - "CHICAGO RAWHIDE" #12HM28 SUL #8629	O-91752	88	Plate - Oil Retaining	A-22510
44			89	Spring - "GARDNER" #95/C	O-90047
45			90	Roll - Eye	A-35066
				Lever - Hold Down	A-22511
				Screw - Shoulder - "DANLY" #9-0504-56	O-90845
				Block - Thrust	A-21825

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No. 212-17-PD STRAIGHTENING MACHINE



PARTS LIST

INDEX NO.	DESCRIPTION	PART NO.
91	Shaft - Guide Roll - Ingoing - 12"	A-33263
	- 18"	A-56648
92	Collar - Shaft	A-34720
93	Bearing - Ball - "NICE" #1623DC	O-90250
94	Rolls - Guide - Ingoing - 12"	A-36005
	- 18"	A-36011
95	Collar - Guide Roll	A-32699
96	Guide - Stock	A-33731
97	Bracket - Ingoing Guide - R. H.	B-21827
98	Bracket - Ingoing Guide - L. H.	B-21828
99	Shaft - Guide Roll - Outgoing - 12"	X-33188
	- 18"	X-42678
100	Rolls - Guide - Outgoing - 12"	A-36004
	- 18"	A-36009
101	Bracket - Outgoing Guide - R. H.	B-21829
102	Bracket - Outgoing Guide - L. H.	B-21830
103	Chain - Roller - "MFGRS STD"	
	#50	095-90917
104	Chain - Roller - "MFGRS STD"	
	#60	095-90920
105	Bracket - Idler Sprocket	A-21788
106	Starter - "ALLEN - BRADLEY"	O-91619
107	Panel - Control - "ALLEN - BRADLEY"	O-90542
108	Plate - Block Cover	B-33820
109	Plate - Side Cover - 12"	B-55465
	- 18"	B-42938
110	Sprocket - Idler - "CULLMAN"	
	#60B15	O-91821
111	Bushing - "BUNTING" #E-837	
	N. O. G.	O-90311
112	Washer - Steel	B-34592

INDEX NO.	DESCRIPTION	PART NO.
113	Pin - Idler - Stra. Drive	B-10249
114	Bearing - "SEALMASTER" #ER-24	O-91164
115	Sprocket - Driven - "CULLMAN"	
	#60B25	A-25608
116	Sprocket - Intermediate Drive -	
	"CULLMAN" #50B18	O-91820
117	Shaft - Intermediate Drive	A-40609
119	Arm - Control	B-33547
120	Bearing - Ball - "SEALMASTER"	
	#ER-8	O-90240
121	Roller - Aluminum - 12"	A-30712
	- 18"	A-30715
122	Shaft - Roller - 12"	B-33560
	- 18"	B-33566
123	Bearing - Ball "SCHATZ" #CS-1432	O-90169
124	Shaft - Cam - 12"	A-33621
	- 18"	A-33623
125	Cam	A-33658
126	Switch - Limit - "SQ. D." -	
	9007 - Type AWL2-C1	O-90567
127	Moto - Drive Unit - "REEVES"	
	#222-1M-18 - 12"	O-92123
	- 18"	O-91560
127A	Sprocket - Drive - "CULLMAN"	
	#60B21	O-00000
128	Base - 12"	C-42117
	- 18"	C-61542
129	Plate - Name - "LITTELL"	A-10151
130	Plate - Name - Stra. Mach.	A-33735
131	Plate - Under Shoot Roll	A-41525
132	Collar - "HALLOWELL" - Steel	O-90437

LUBRICATION RECOMMENDATIONS



APPLICATION	RECOMMENDATION	GENERAL PROPERTIES
Centralized Grease System	Mobil Sovarex Grease L1	Pumpable, Homogenized, Multi-purpose, with EP Additive, Rust inhibited
Manual Grease Fittings		
Gear and Bearing Reservoirs (Change annually)	Mobil Vactra Oil, Extra Heavy (SAE 30)	Premium Quality, Rust and Oxidation inhibited, Demulsibility, Minimum VI 90
General Hand Oiling		
Open Roller or Timing Chain		
Open Gear Teeth (Manually applied)	Sinclair Jetlube #8	Adhesive and Cohesive Multi-purpose, with EP Additive

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