KALAMAZOO

Service Manual

and

Parts List

MODEL
9A or H9A Series

Metal Band Cut-Off Machines

KTS INDUSTRIES

KALAMAZOO SAW DIVISION
508 HARRISON STREET KALAMAZOO, MICHIGAN 49001

Revised January, 1974

OPERATING INSTRUCTIONS

INSTALLATION — Your Kalamazoo Machine has been fully adjusted at the factory and no further adjustment should be necessary. It has been wired in accordance with the red tag hanging on it. Make sure your power source conforms.

BLADE — You have received your machine with a hard edge, hard back, carbon steel blade already mounted. To change blades, raise head slightly and close hydraulic to hold in position. Drop rotary brush away from blade by loosening knob at end of pivot bar. Lift cover and move idle wheel to right by turning blade tension handle counter-clockwise until blade can be lifted off. Place new blade around wheels under flanges and insert between guide rollers. Tighten blade enough so that it will not fall off wheels by turning tension handle clockwise. Turn motor on. Tighten blade until all vibration or flutter disappears. Then ADD 1 FULL TURN OF TENSION HANDLE. As tension is added the blade travels up the faces of the band wheels until nearly against the flanges because the wheels are slightly canted or tilted. Replace brush against teeth of blade and close cover.

BLADE SPEED — Quick change step pulleys provide four blade speeds through a worm gear transmission. Tensioning of V-belt should be maintained by double-nut adjustment of small coil spring on the motor tension rod. CAUTION: Do not permit motor to hang too heavy on V-belt. To prevent hardship on motor and gear case bearings, motor should hang just heavy enough to eliminate belt flutter. Speeds are selected by means of the cam action which lifts the motor to permit changing the belt on the pulleys. Beginning with the smallest step on the motor pulley and progressing to the largest will produce blade speeds of 50, 95, 160, and 275 surface feet per minute. (See Blade Selection Chart for recommended speeds on various materials).

FEED PRESSURE — Feed pressure or head weight may be adjusted with the two extension springs at the rear of the machine. The two knobs at the top of the springs extend or shorten the springs. Extending the springs will reduce head weight. Head weight may be determined by hooking a fish or rag scale to the tension handle at the end of the frame and lifting a few inches above the bed. For all normal cutting in solid stock it should be approximately 12-14 pounds. Reduce head weight when sawing thin sections. When the head weight cannot be maintained and no further adjustment of the springs is possible, the springs should be replaced.

HYDRAULIC — The hydraulic dash-pot cylinder serves to hold the head in the up position and to control the speed of descent of the head. It can be used to slow the descent of the head when sawing thin wall stock to prevent tearing the stock or stripping teeth from the blade. It does not control feed pressure which is determined by head weight. The control knob for the hydraulic cylinder projects from the end of the bed beside the vise hand wheel. Turning the handle counter-clockwise opens the cylinder and turning it clockwise closes the cylinder. Always keep the cylinder full of light oil.

BLADE GUIDES — Your machine is equipped with the new Perm-Adjust blade guides which in the accepted sense never need adjustment. It is not possible to make adjustments except in two places. The front roller is mounted on an eccentric axle which allows it to be moved in or out. This roller should be tight against the side of the blade. A quick check as to proper adjustment may be made by placing your thumb against the face of the roller with the blade running. Hard pressure of the thumb should stop the roller. The guide

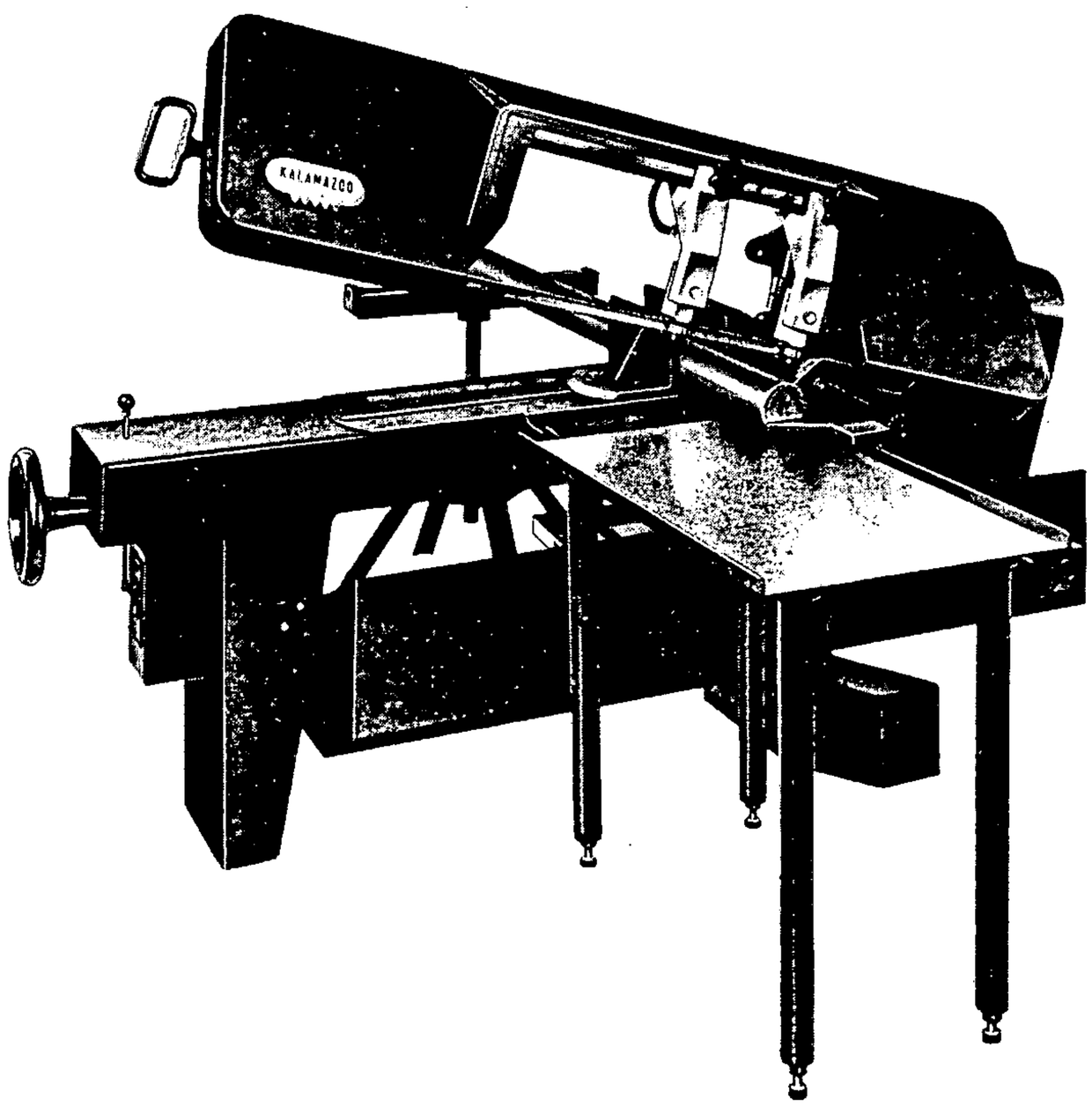
block may be moved up or down in the slotted hole of the guide arm. It should be positioned so that the top of the blade touches the Carbide back-up insert. Do not lubricate the guide rollers but keep them clean. Since the guides are permanently adjusted, crooked cuts can only be caused by a worn out blade or improper feed pressure.

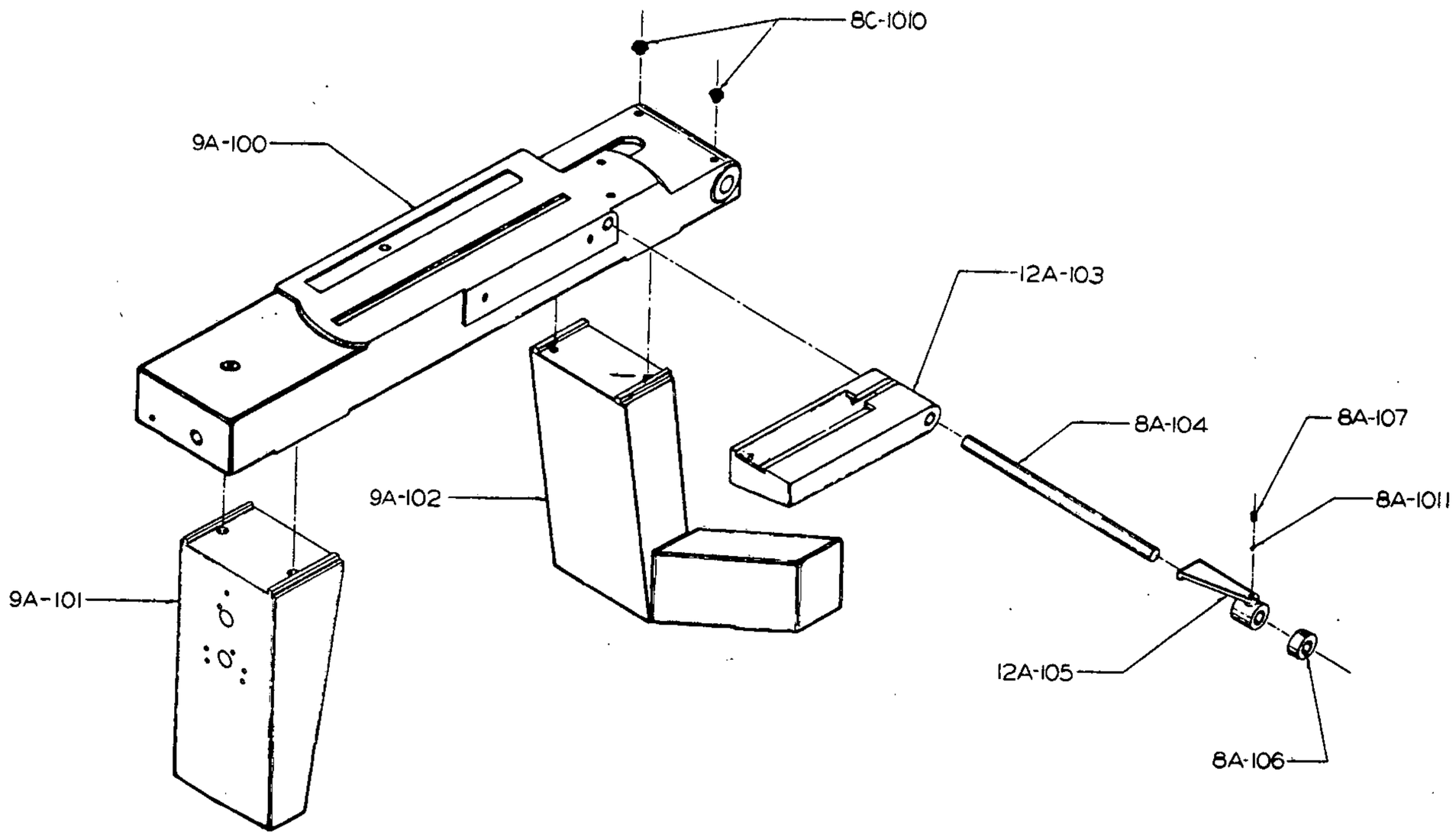
VISE — A quick counter-clockwise turn of vise handwheel will release jaw for easy positioning. Since cutting action is continuous on a horizontal band saw, it is not necessary to clamp work too tight. Overtightening will result in short life of the bronze vise nut.

BLADE BRUSH — Keep the rotary brush in contact with the blade teeth at all times. When the brush is worn out, it must be replaced. Order through your Kalamazoo dealer.

LUBRICATION — Only the two oil cups above pivot bar require lubrication, preferably with a light-weight number 10 or 20 oil. The transmission has approximately one pint of Mobil Compound FF in it and requires no further lubrication unless in case of leakage. The gibs and slides on the idle wheel assembly should be kept free of dirt and lightly lubricated with oil or grease occasionally. Re-pack idle wheel bearings once a year.

STATE YOUR MACHINE SERIAL NUMBER WHEN ORDERING PARTS

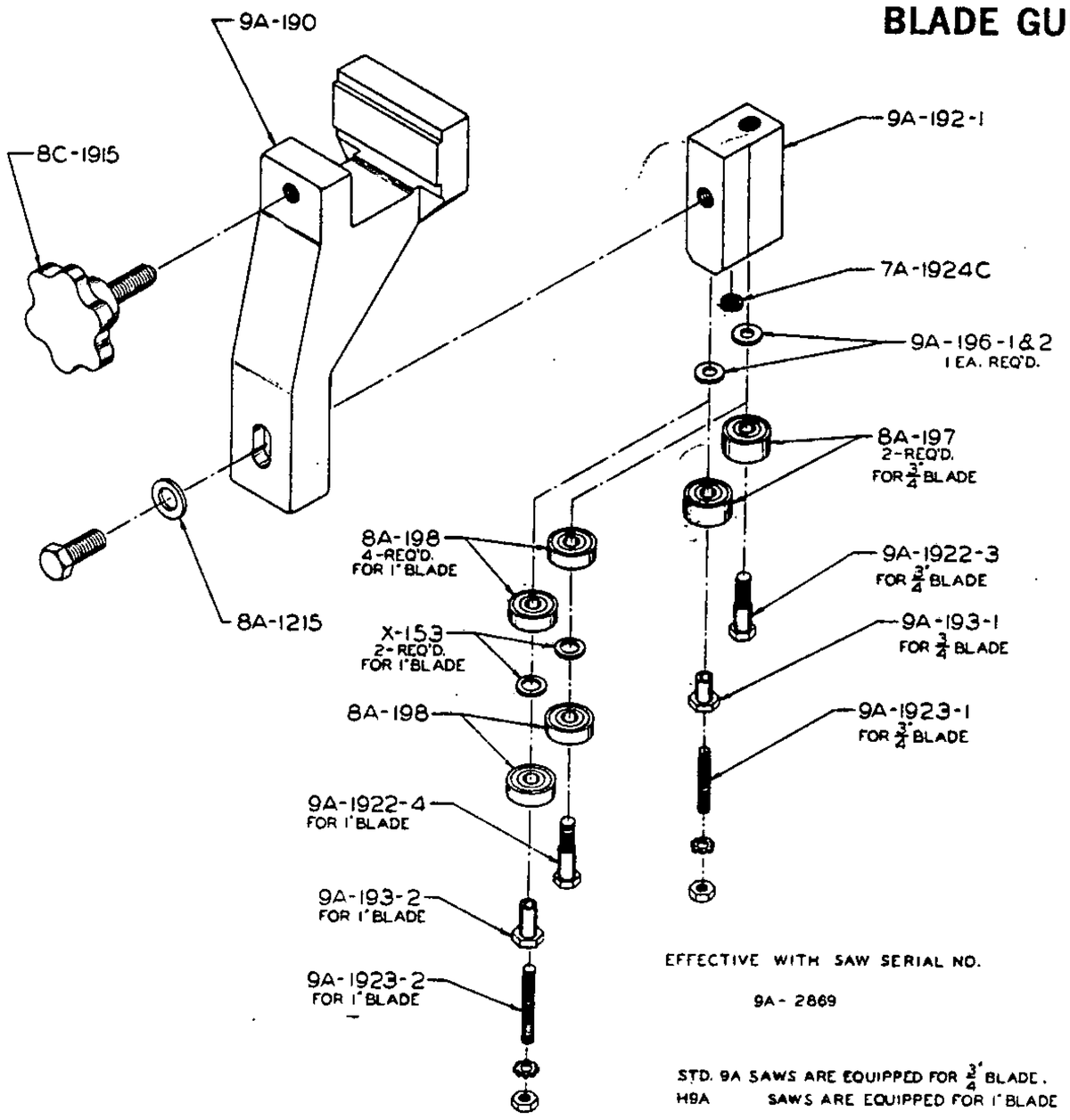




BED, LEGS, ETC.

9A-100	Bed	12A-105	Stock stop
9A-101	Front leg	8A-106	Stock stop collar
9A-102	Rear leg	8A-107	Stock stop spring
12A-103	Tip-off block	8C-1010	Oil cup No. 209
8A-104	Stock stop bar	8A-1011	Steel ball

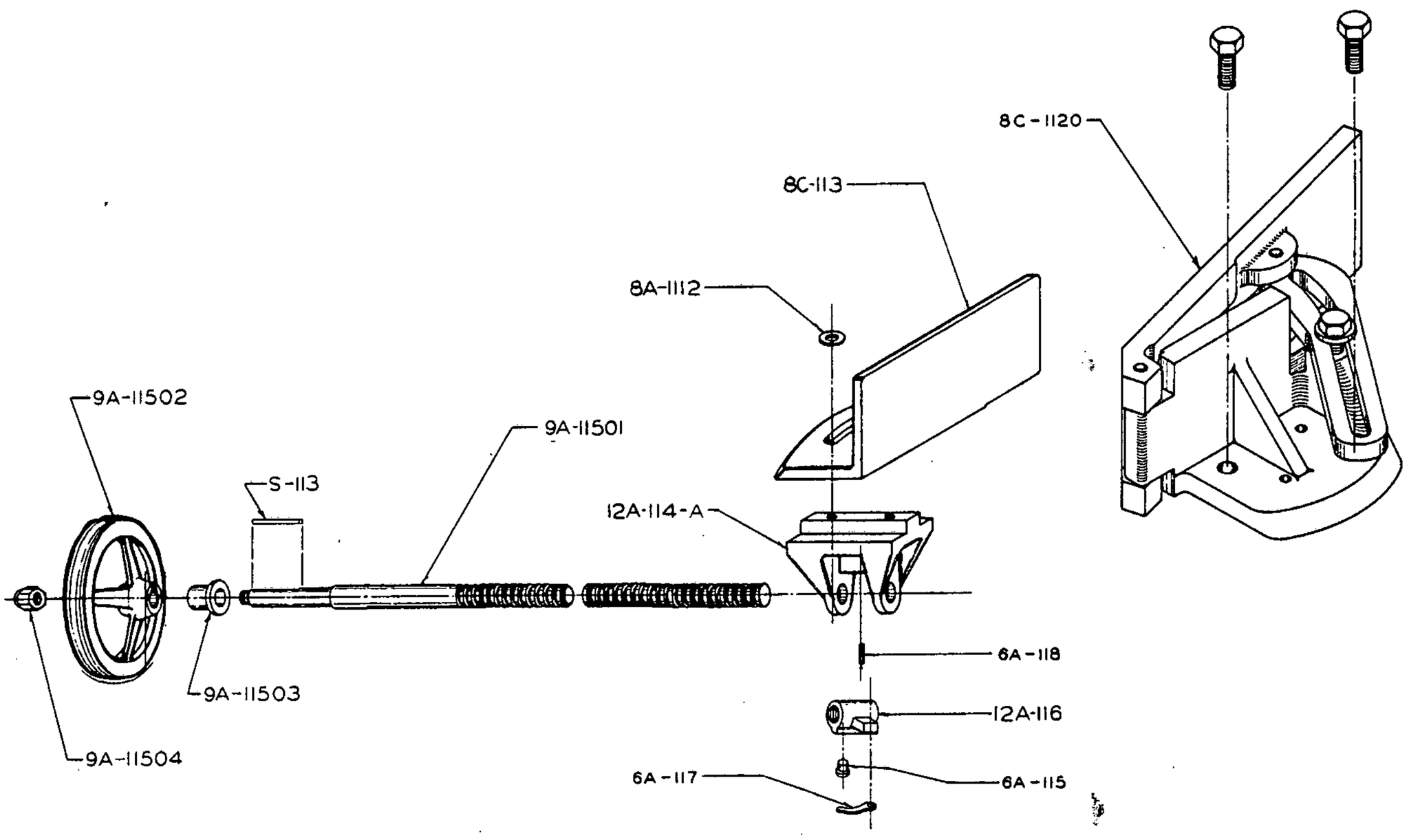
BLADE GUIDES



9A-1901-3	Roller guide block assembly for 9A w/ ¾" blade
9A-1901-4	Roller guide block assembly for H9A w/ 1" blade
9A-190	Guide arm
9A-192-1	Guide block
9A-193-1	Front guide cam
9A-196-1&2	Finished washer (-1 = ¼") (-2 = 5/16")
8A-197	Roller guide bearing
8C-1915	Guide arm tightener
7A-1924C	Carbide insert
9A-1922-3	Shoulder screw
9A-1923-1	Front roller bolt
8A-1215	Hardened washer

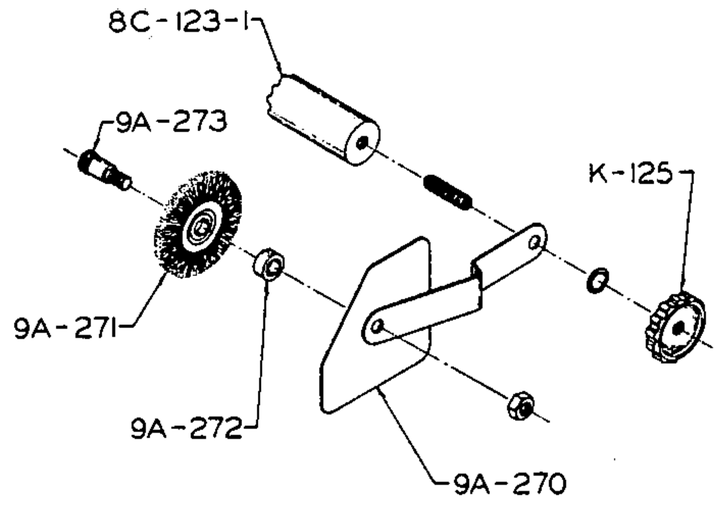
(Machines with 1" wide blade H9A and 13A) require the following

9A-193-2	Front guide cam
8A-198	Roller guide bearing
9A-1922-4	Shoulder screw
9A-1923-2	Front roller bolt
X-153	Spacer washer



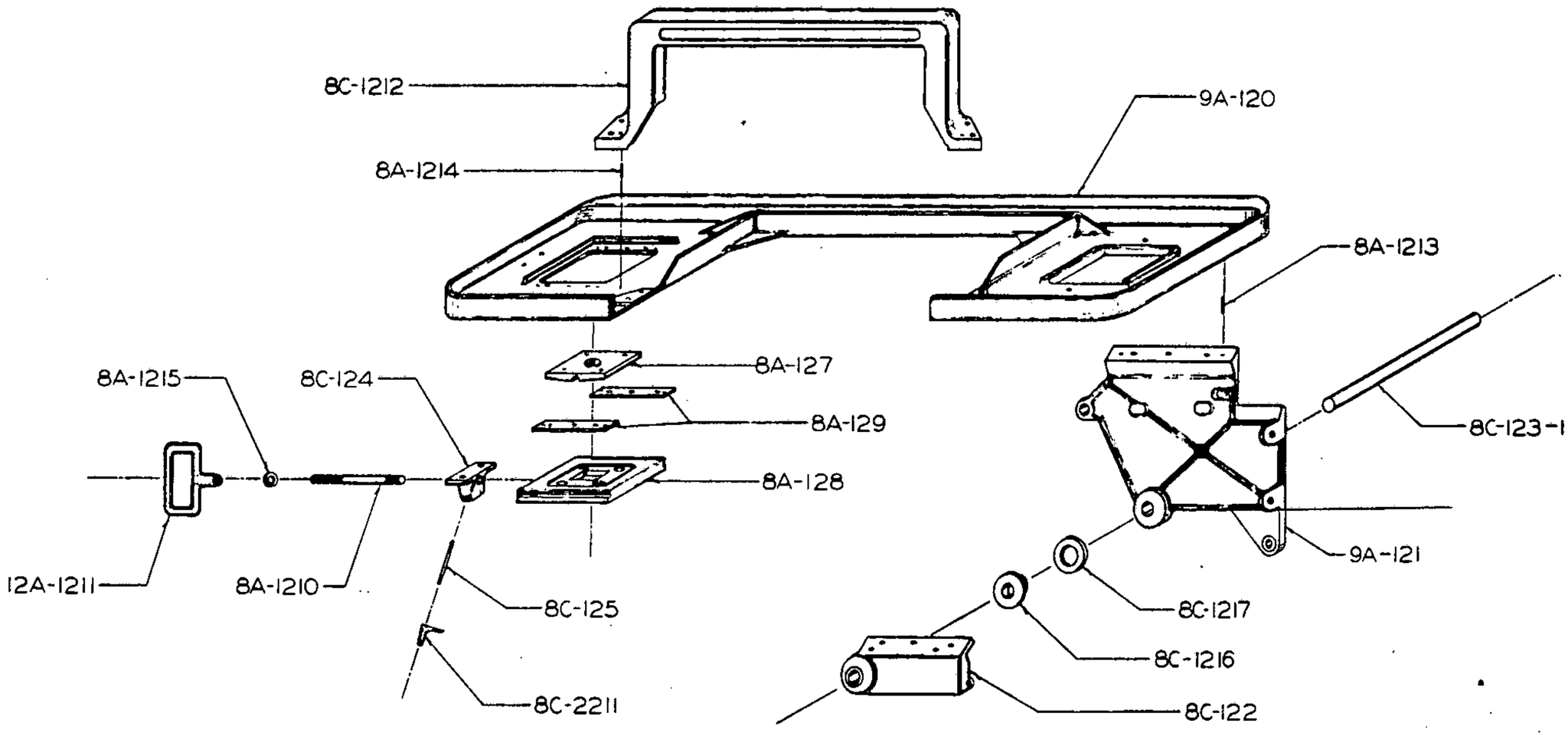
VISE

8C-1120	Fixed vise jaw assembly
8C-113-1	Moving vise jaw
12A-114A	Vise block
9A-11501	Vise screw
9A-11502	Hand wheel
9A-11503	Bushing
9A11504	Acorn nut
12A-116	Vise cam nut w/pin & spring
6A-117	Vise nut spring
6A-118	Vise block pin
6A-115	Cam nut friction pin
S-113	Vise screw key



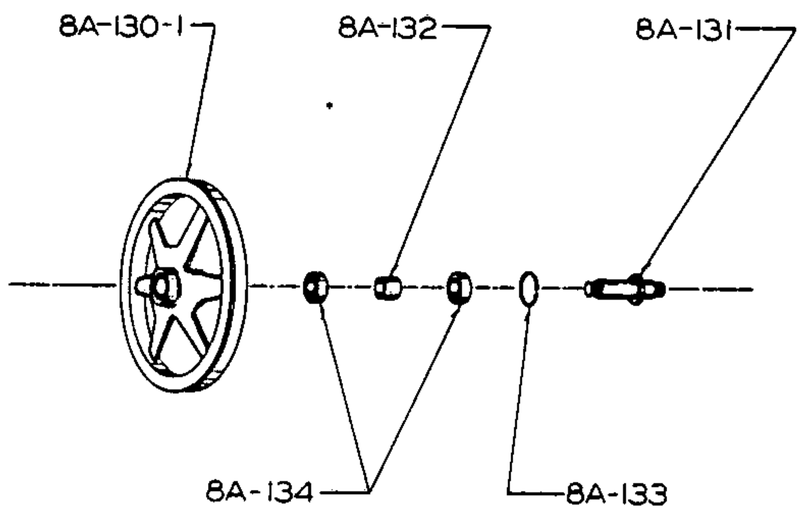
9A-27 BLADE BRUSH ASSEMBLY

9A-270	Brush bracket
9A-271	Brush
9A-272	Brush axle spacer
9A-273	Brush axle shoulder bolt
K-125	Bracket tightener knob



FRAME

9A-120	Frame	8A-1210	Tension screw
9A-121	Rear frame arm	12A-1211	Blade tension handle
8C-122	Front frame arm	8C-1212	Yoke
8C-123-1	Pivot bar	8A-1213	No. 3 taper pin
8C-124	Frame rest bracket	8A-1214	No. 6 taper pin
8C-125	Frame rest stud	8A-1215	Hardened washer
8A-127	Rocker block	8C-1216	Adjustment ring collar
8A-128	Slide block	8C-1217	Adjustment ring nut
8A-129	Slide block guide	8C-2211	Frame rest

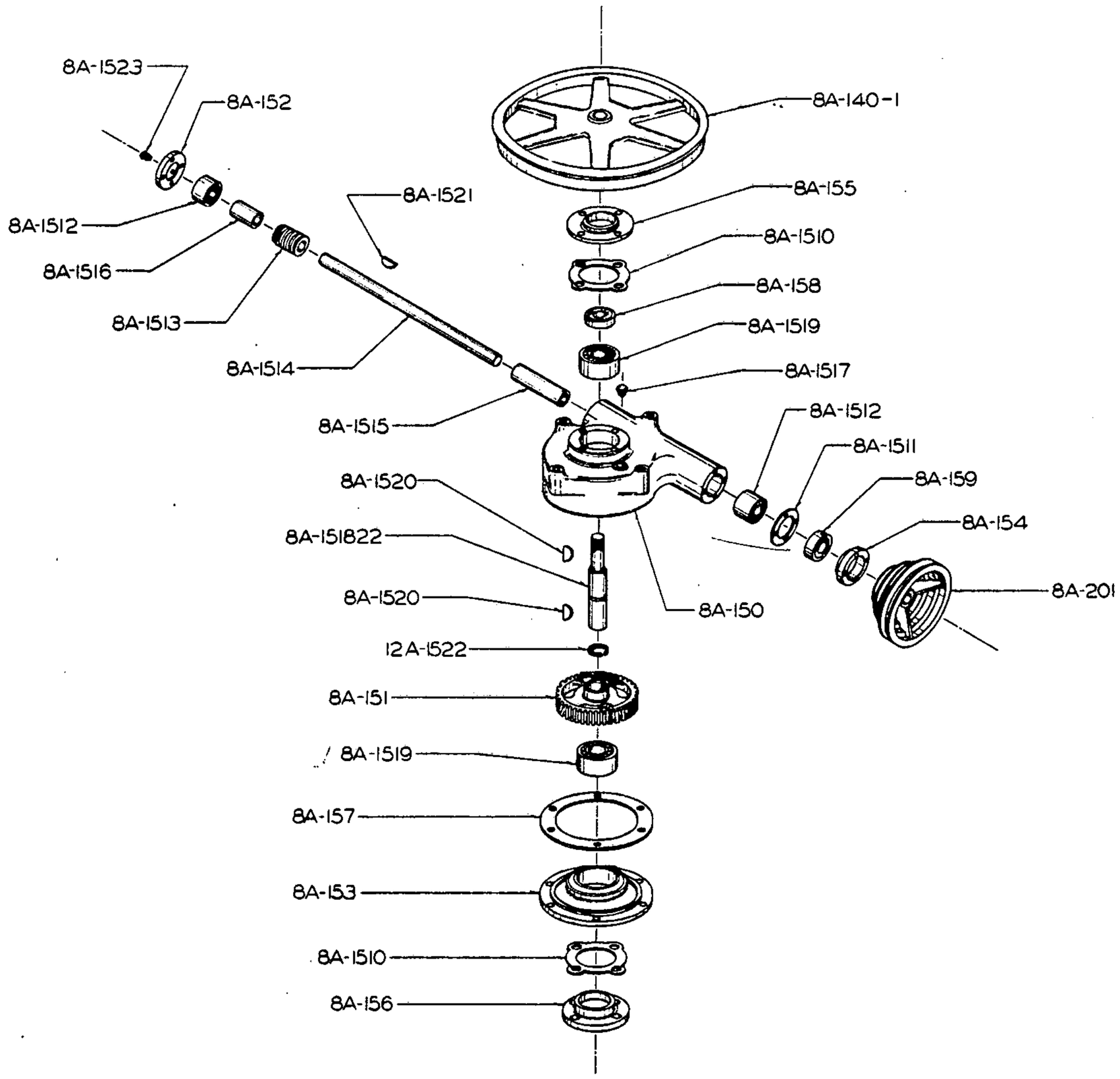


IDLE WHEEL

8A-130-1	Idle wheel
8A-131	Idle wheel axle
8A-132	Idle wheel spacer
8A-133	Idle wheel snap ring
8A-134	Idle wheel bearing
8A-135	Idle wheel jam nut

NOTE:

8A-130-2 Idle wheel required for 1" wide blade (H9A)

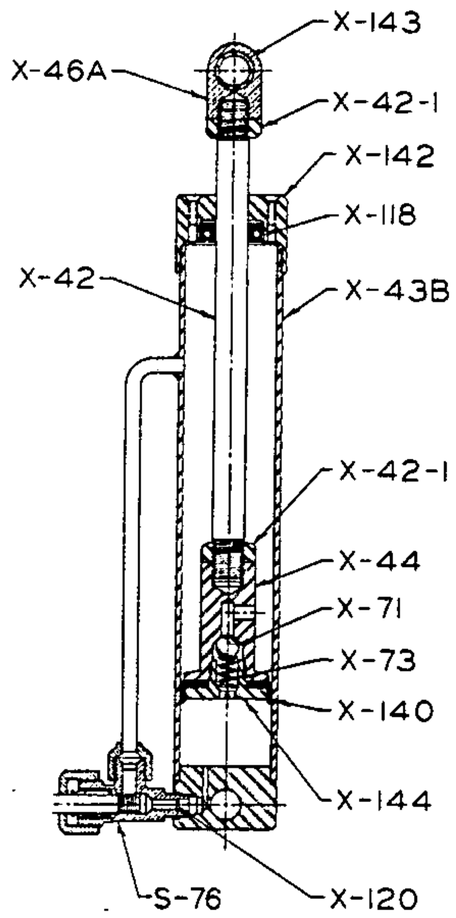


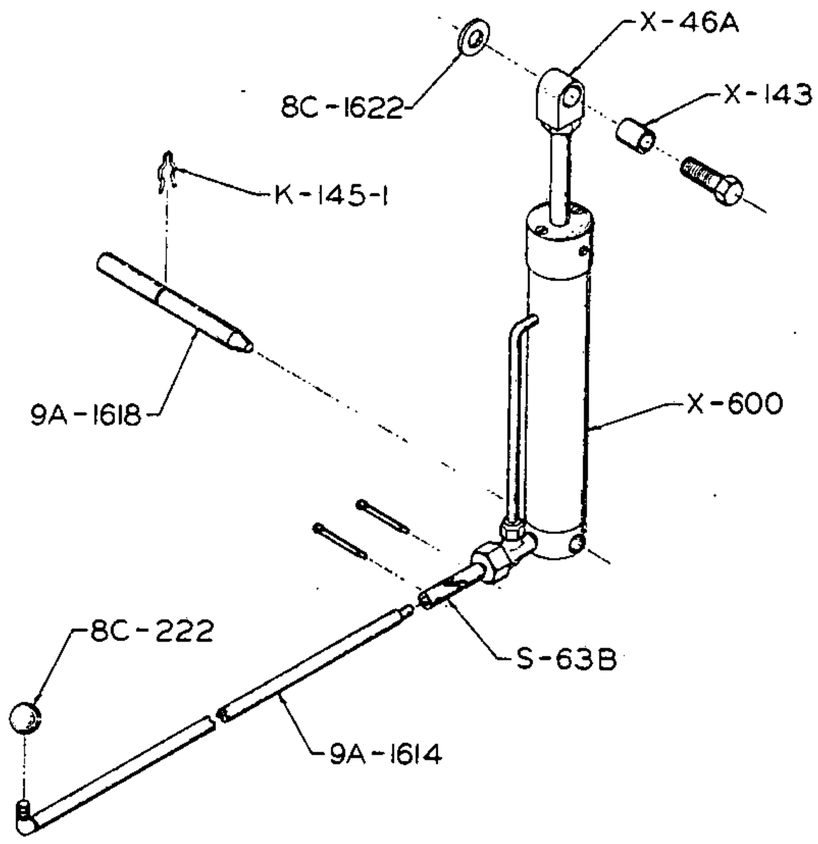
DRIVE WHEEL

8A-140-1	Drive wheel	NOTE:	
8A-141	Drive wheel lock nut	8A-140-2	Drive wheel required for 1" wide blade (H9A)

8A-15 GEAR CASE ASSEMBLY as follows:

8A-150	Gear case housing	8A-1512	Worm shaft bearing
8A-151	Bronze gear	8A-1513	Worm
8A-152	Barrel cover	8A-1514	Worm shaft
8A-153	Back plate	8A-1515	Long spacer
8A-154	Small oil seal casting	8A-1516	Short spacer
8A-155	Large oil seal casting	8A-1517	Pipe plug
8A-156	Back cover	8A-151822	Drive axle w/snap ring
8A-157	Back plate gasket	8A-1519	Drive axle bearing
8A-158	Large oil seal	8A-1520	No. 15 Woodruff key
8A-159	Small oil seal	8A-1521	No. 19 Woodruff key
8A-1510	Shim — back cover	12A-1522	Snap ring
8A-1511	Shim — barrel	8A-1523	Small oil cup



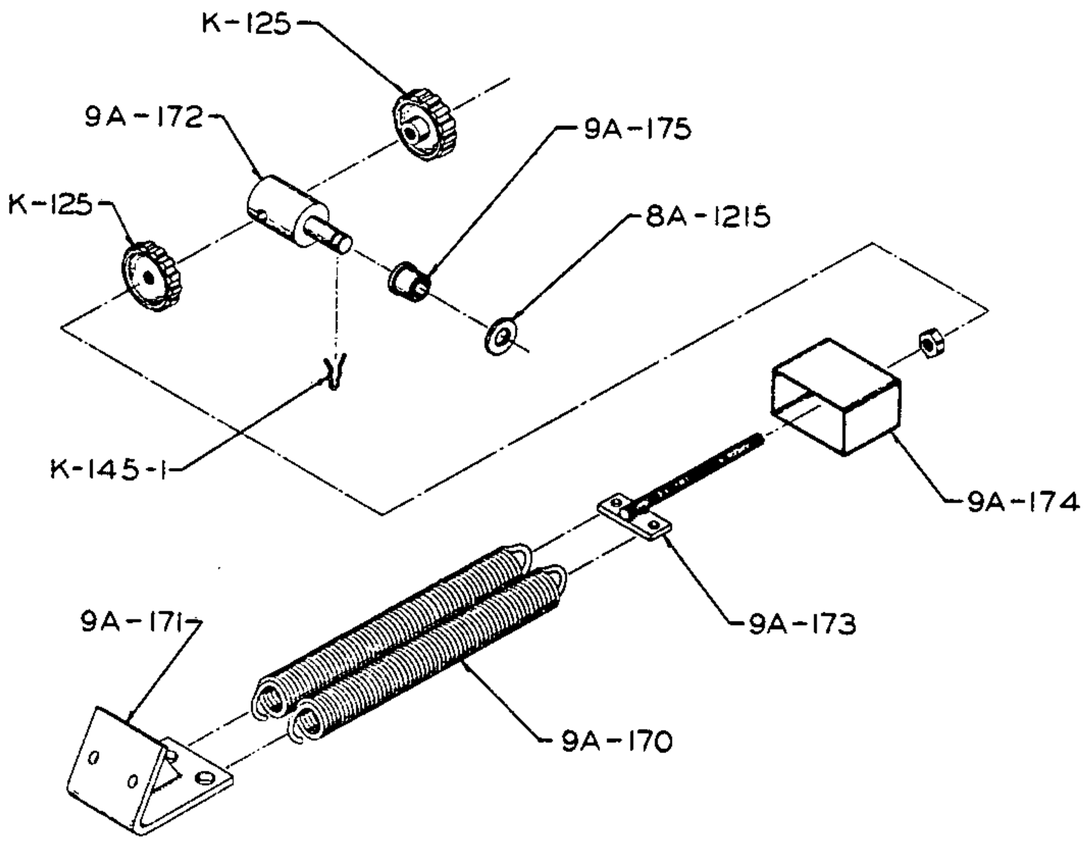


X-600 HYDRAULIC ASSEMBLY as follows:

X-42	Piston rod
X-42-1	Piston rod nut
X-43B	Cylinder w/bottom and tube
X-44	Piston
X-46A	Frame connector
X-71	Steel ball
X-73	Ball retainer spring
X-118	Oil seal
X-120	Needle valve jet
X-140	Leather cup
X-142	Upper cylinder head
X-143	Frame connector bushing
X-144	Piston nut
S-76	Needle valve

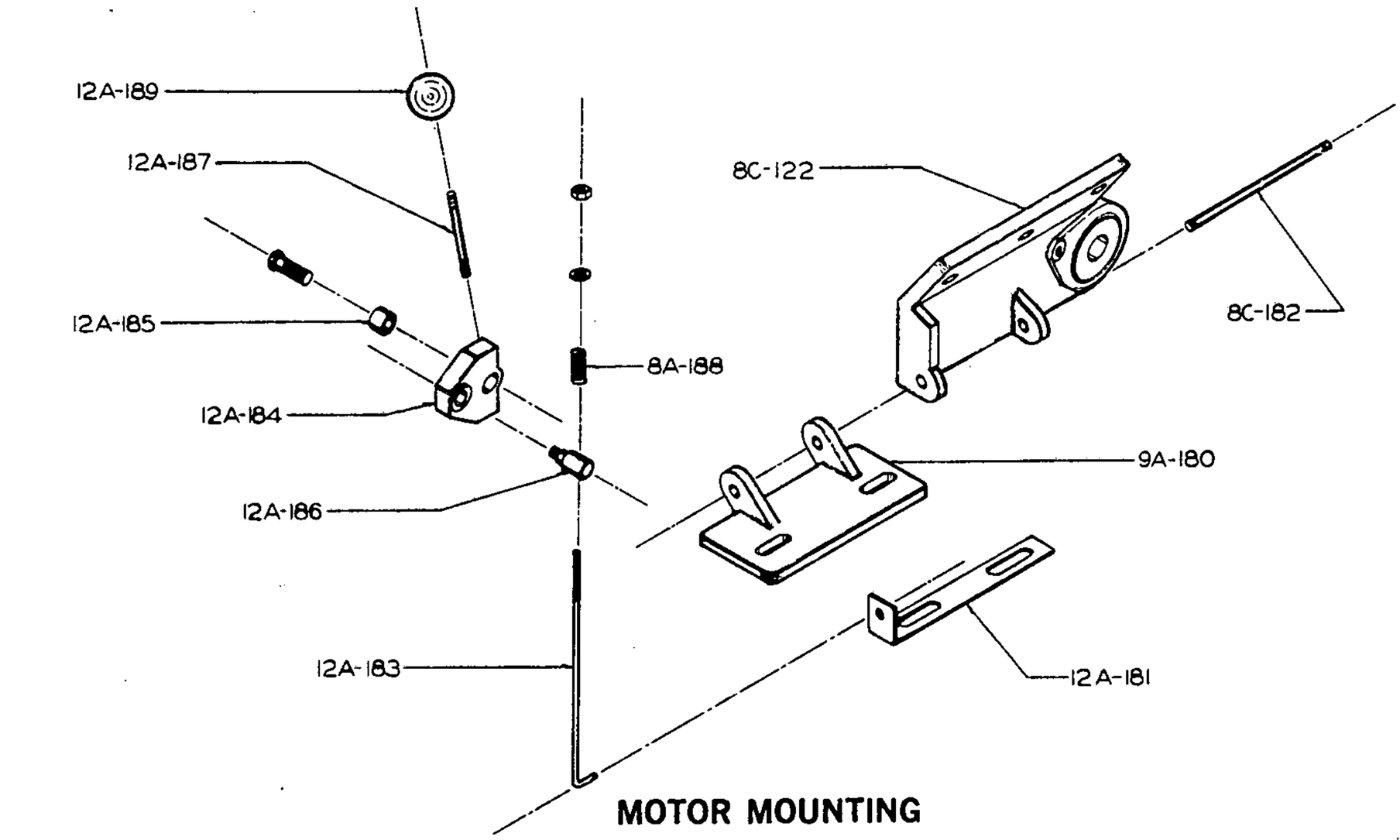
Misc. Hydraulic Parts

K-145-1	Hairpin cotter
S-63B	Universal joint
8C-222	Control rod knob
8C-1622	Hardened washer
9A-1614	Hydraulic control rod
9A-1618	Hydraulic pivot pin



SPRING

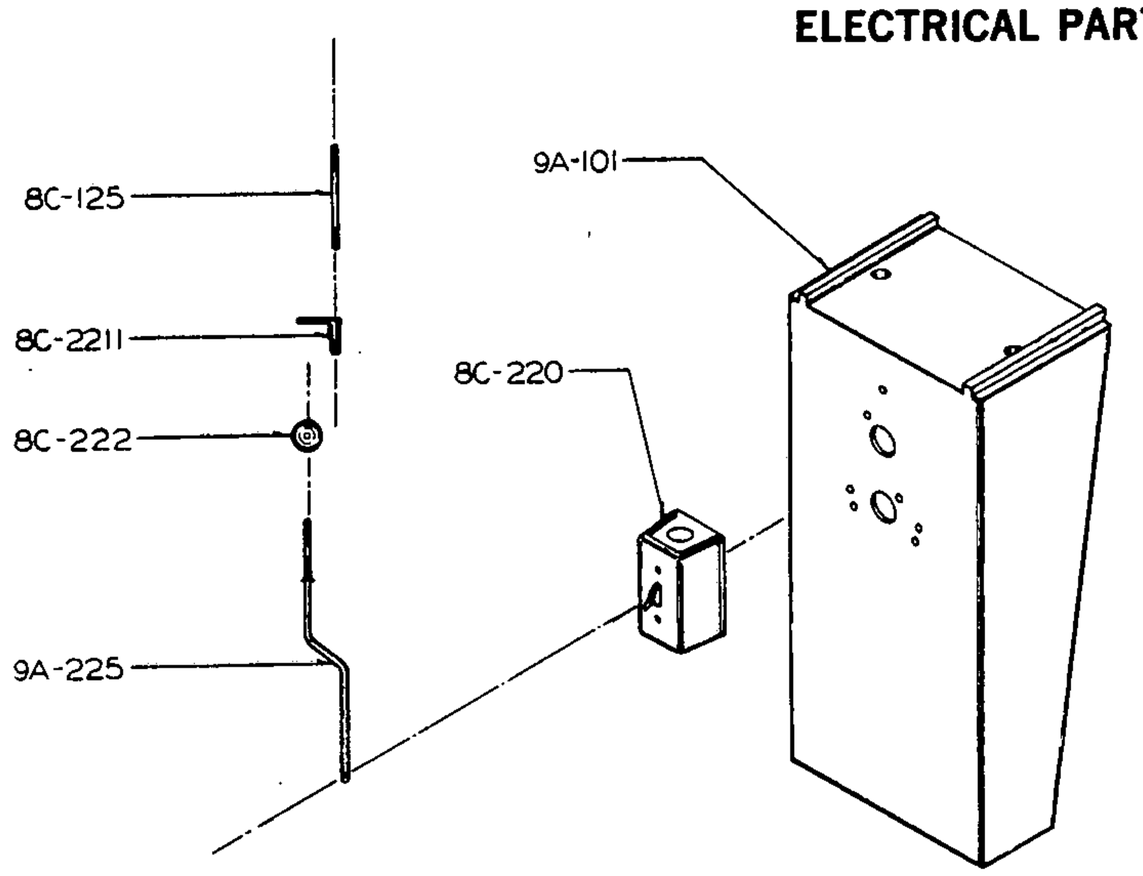
9A-170	Extension spring
9A-171	Spring bracket
9A-172	Spring pivot pin
9A-173	Adjustment stud
9A-174	Cap
9A-175	Pivot pin bushing
K-125	Spring tension knob
K-145-1	Hairpin cotter
8A-1215	Hardened washer



MOTOR MOUNTING

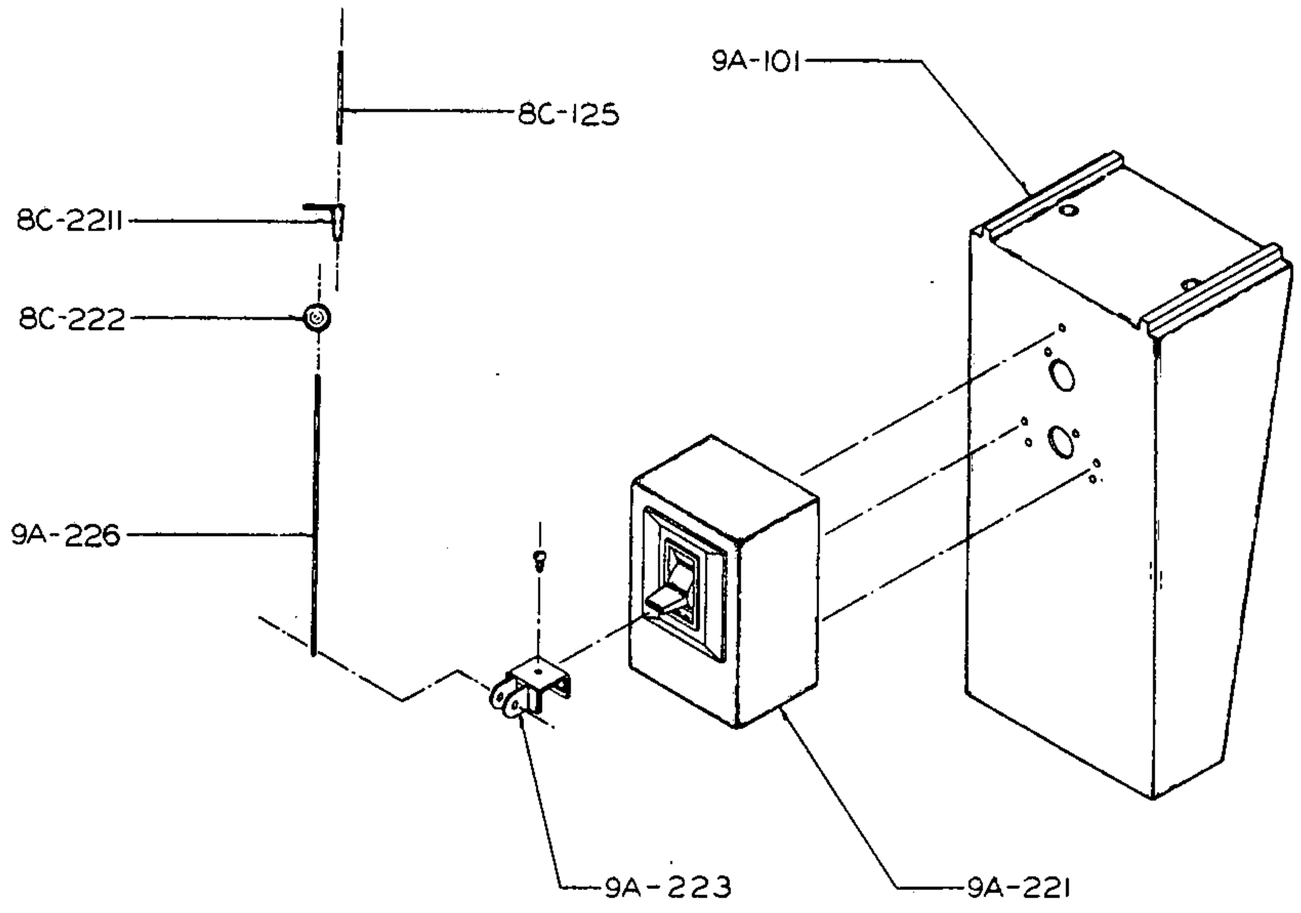
9A-180	Motor plate hinge	12A-185	Motor tension cam bushing
12A-181	Motor plate	12A-186	Motor tension bolt
8C-182	Motor pivot bar	12A-187	Motor tension cam lever
12A-183	Motor tension rod	12A-188	Motor tension spring
12A-184	Motor tension cam	12A-189	Motor tension knob

ELECTRICAL PARTS



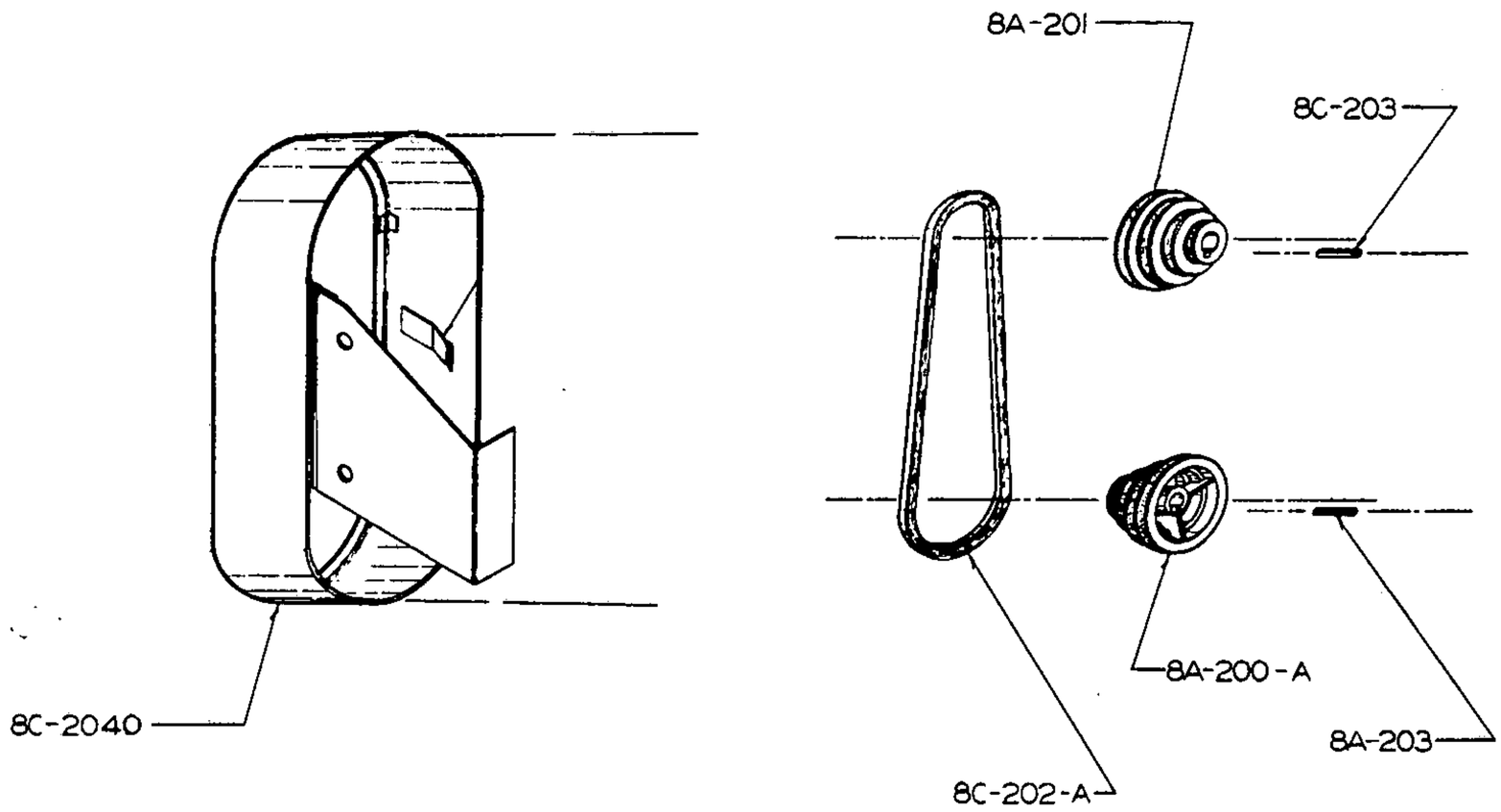
SINGLE PHASE SWITCH

9A-101	Front leg
8C-125	Frame rest stud
8C-220	Single phase switch
8C-222	Shut off rod knob
8C-2211	Frame rest
9A-225	Shut off rod



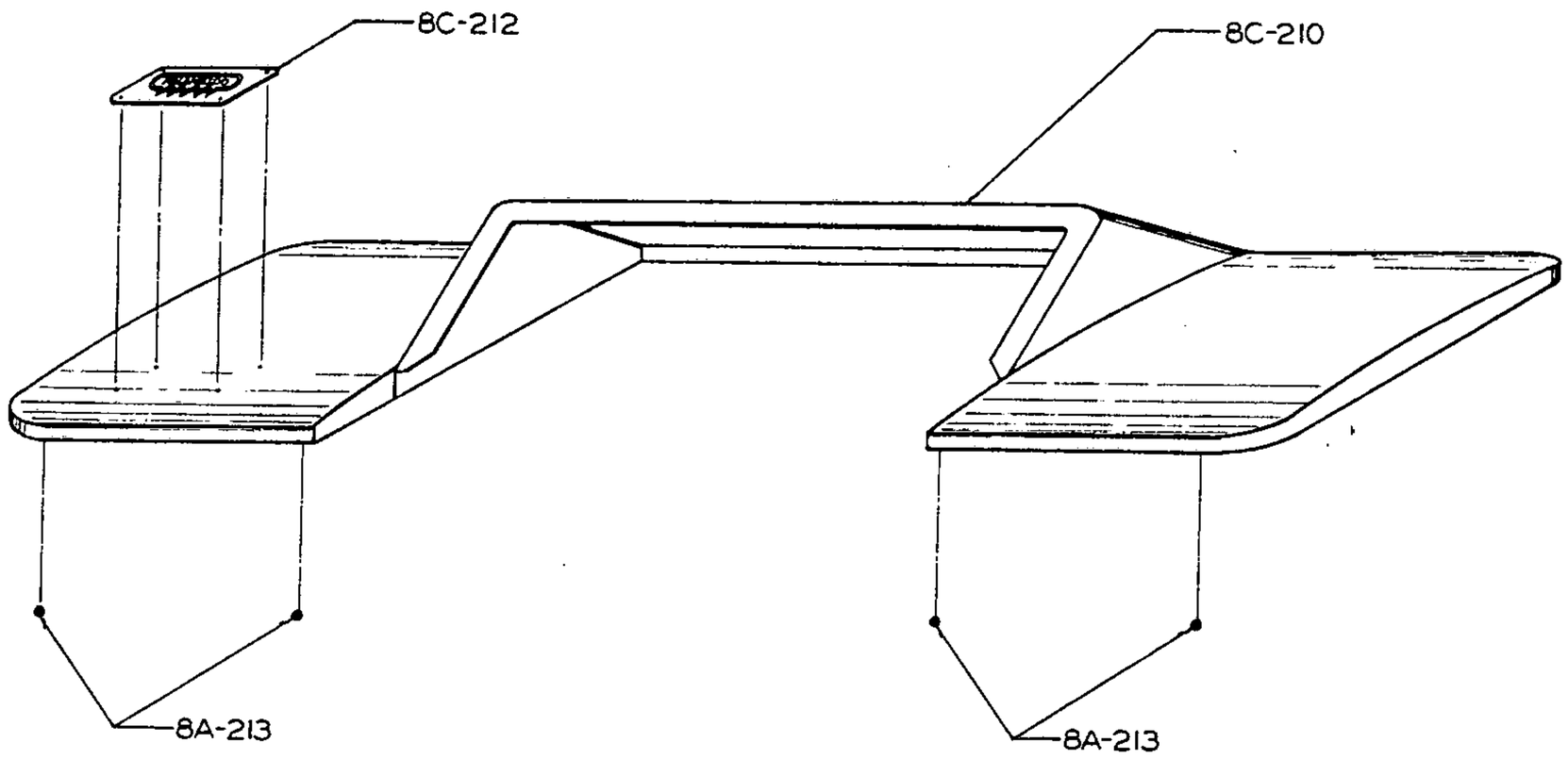
POLY PHASE SWITCH

9A-101	Front leg
8C-125	Frame rest stud
9A-221	Poly phase switch
8C-222	Shut off rod knob
9A-223	Shut off bracket
9A-226	Shut off rod
8C-2211	Frame rest



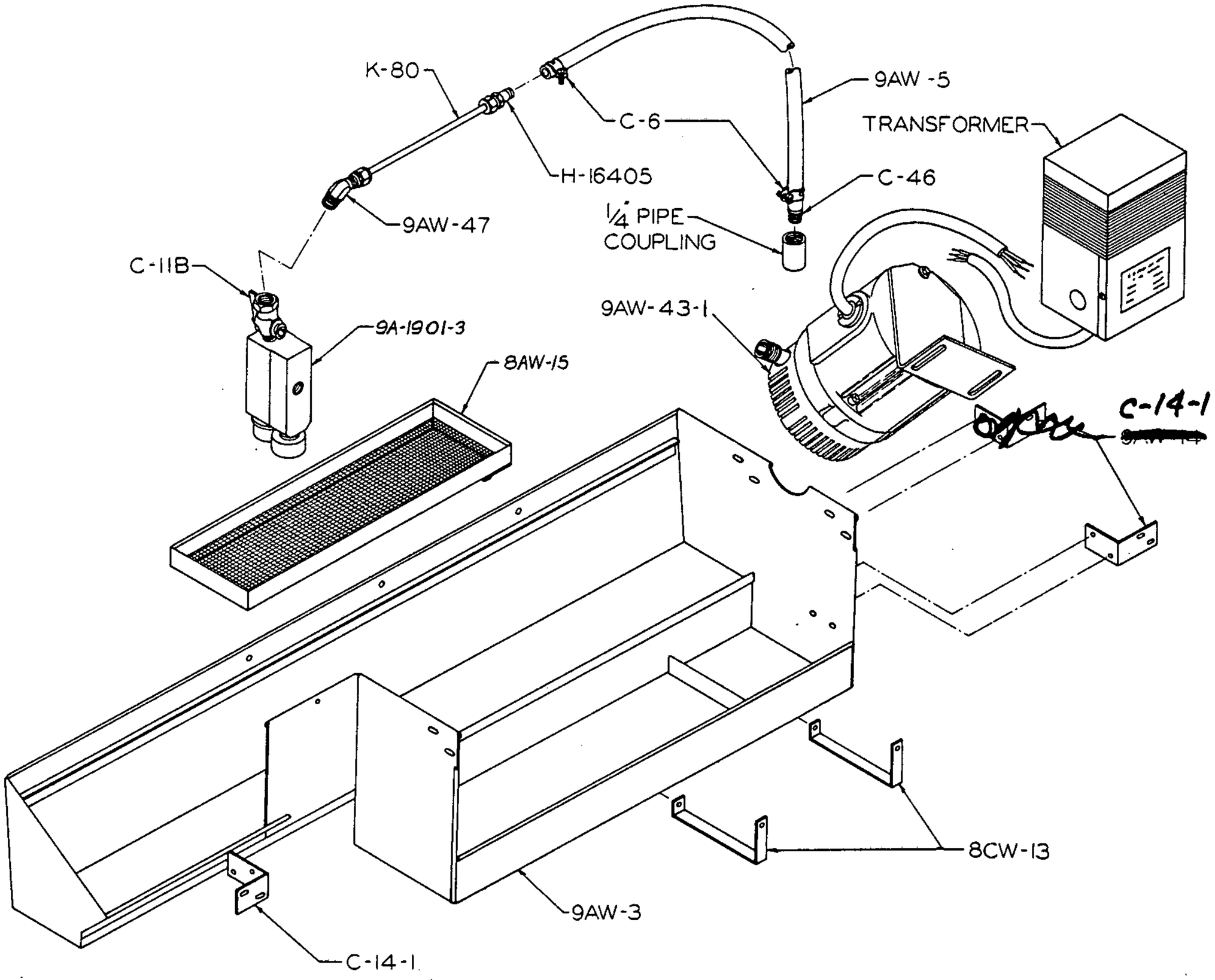
PULLEYS AND GUARD

8A-200A	Motor pulley w/ 5/8" bore	8C-203	Pulley key (2)
8A-201	Driven pulley	8C-2040	Guard w/hinge and screen
8C-202A	V-Belt		



COVER

8C-210	Cover w/hinges	8A-213	Set stem bumpers
8C-212	Name plate		



COOLANT PARTS

9AW-3	Coolant pan
9AW-43-1	Pump, motor and cord
8AW-15	Wire mesh tray
8CW-13	Tray bracket (2)
C-14-1	Mounting bracket - rear
9AW-14	Mounting bracket - front (2)

Transformer (Specify Operating Voltage)

9AW-110	Feed assembly consisting of:
9AW-5	6' hose
C-6	Hose clamp (2)
C-11B	Valve
H-16405	Tube fitting
K-80	Copper tube
9AW-47	45° elbow
C-46	Nipple

SPECIFICATIONS

	9AD	9AW
CAPACITY		
FLAT	16″	16″
ROUND	9″	9″
MOTOR	1 H.P.	1 H.P.
SPEEDS	50, 95, 160, 275 FPM	50, 95, 160, 275 FPM
FLOOR SPACE	68½″ x 25″	68½″ x 25″
HEIGHT TO TOP OF BED	25¼″	25¼″
VISE	Swivel to 45°	Swivel to 45°
BLADE SIZE	10′-10½″ x ¾″ (H9A, 1″)	10′-10½″ x ¾″ (H9A, 1″)
NET WEIGHT	640 lb.	700 lb.
SHIPPING WEIGHT	747 lb.	807 lb.

SELECTION OF BAND SAW BLADES

Efficient band sawing depends on many factors: the machine itself, the speed, the material to be cut, its shape and hardness, the selection of the blade, its type and tooth specifications. Below are recommended speed and tooth specifications for cutting materials with Hard Edge Hard Back Metal Cutting Band Saw Blades. Following these recommendations is your guarantee of economical and efficient metal band sawing.

MATERIALS	Teeth per Inch Over 2″	Teeth per Inch Under 2″	Machine Speed	MATERIALS	Teeth per Inch Over 2″	Teeth per Inch Under 2″	Machine Speed
Aluminum alloys	6	8	4	I Beams	8	12	3
Aluminum castings	6	10	4	Machine Steel	8	12	3
Angle Iron, light	—	14	3	Malleable Iron	8	12	3
Angle Iron, heavy	8	10	3	Monel Metal	10	14	1
Brass, sheets—rods	10	12	3	Nickel Steel	10	14	1
Brass castings, soft	12	14	3	Pipe, Iron soil	8	12	3
Brass castings, hard	12	14	2	Pipe, Steel	8	12	3
Bronze	8	10	2	Pipe, Galvanized	10	14	3
Bakelite	8	10	4	Plastics	8	10	4
Boiler tubes	10	12	3	Slate	10	14	1
Cast Iron, pipe-solids	8	12	3	Steel, less 50 carbon	8	12	3
Channel Iron	8	12	3	(same for low alloy)			
Cold Rolled Steel	8	10	3	Steel, ovor 50 carbon	10	14	2
Copper	6	8	4	(Same for high alloy)			
Drill Rod	10	14	2	Structural Steel	8	12	3
Fibre	8	12	4	Tubing, steel - light	12	14	4
High Chrome Steels	8	12	2	" seamless-heavy	8	12	3
High Speed Steels	8	12	2	Zinc	8	12	3

NOTE: Higher blade speeds are possible in most materials with Alloy or High Speed steel blades.

Your machine when delivered was equipped with a Hard Edge, Hard Back Carbon steel band blade. We recommend it for all general purpose sawing. We stock this blade in 6, 8, 10, 14 teeth per inch.

If your machine is equipped for wet cutting, use a good grade of soluble oil and mix not thinner than 10:1. A recommended soluble oil is Kal-Kut 101 which is available through your Kalamazoo distributor in 1 gal. and 5 gal. containers.

STATE YOUR MACHINE SERIAL NUMBER WHEN ORDERING PARTS

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