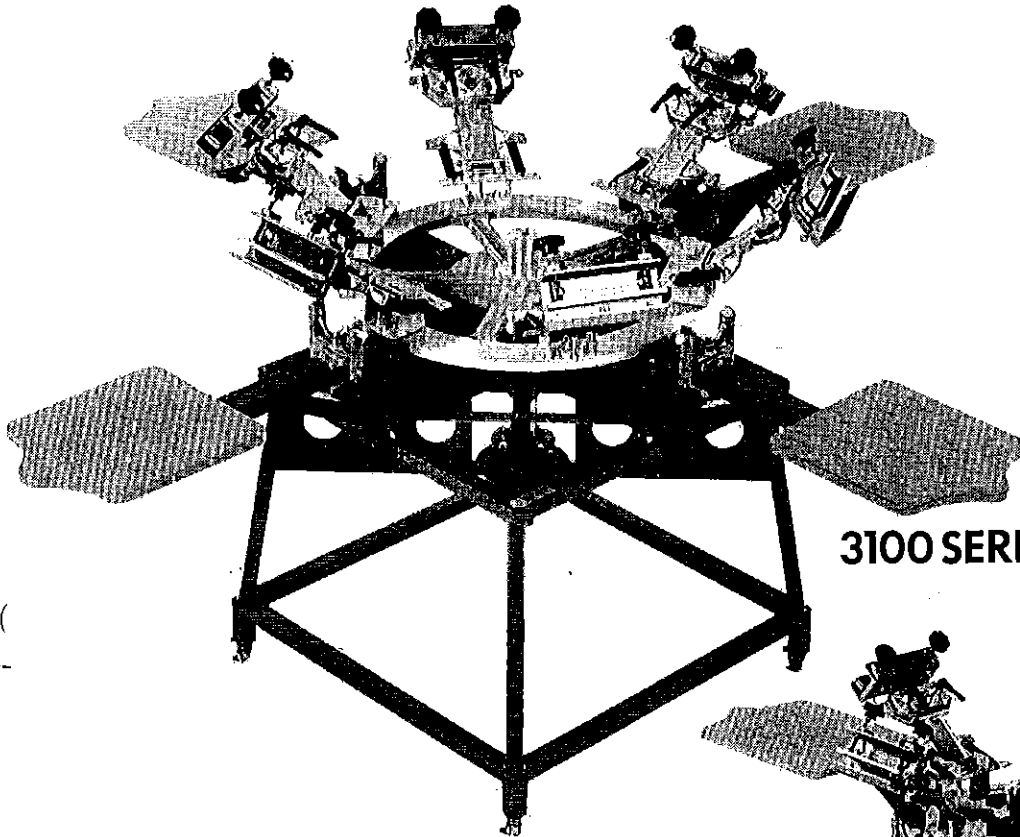


INSTRUCTIONS

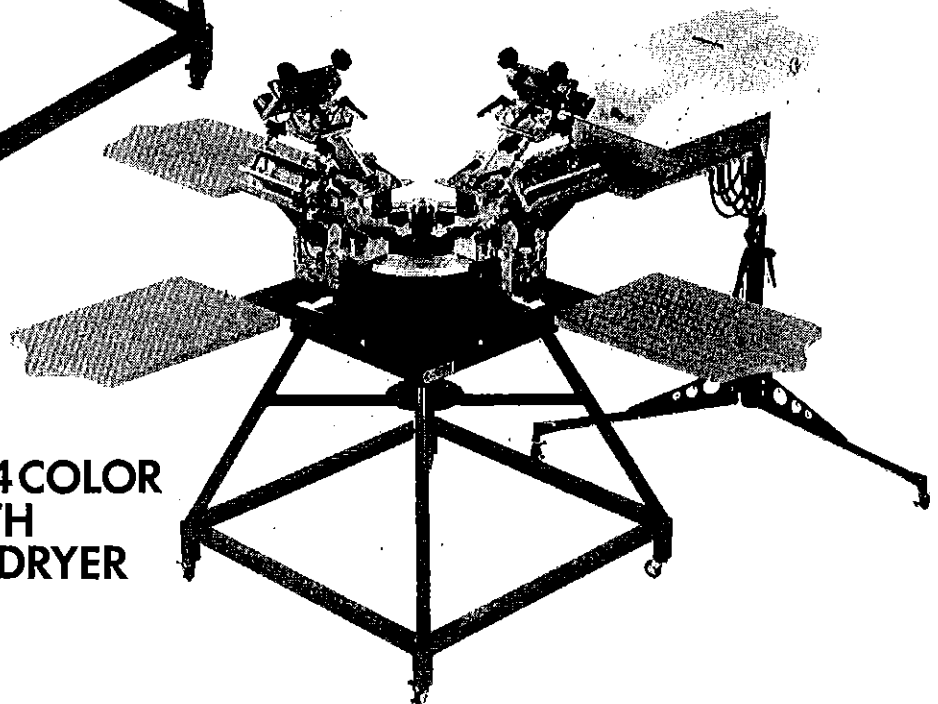


HOPKINS
INTERNATIONAL
SCREEN PRINTING SYSTEMS

**3100 SERIES 6&8 COLOR
1900 SERIES 4 COLOR
(WITH OR WITHOUT MICRO REGISTRATION)
ASSEMBLY & ADJUSTMENT**



3100 SERIES 6 COLOR



**1900 SERIES 4 COLOR
SHOWN WITH
AUTO SPOT DRYER**

With proper assembly and care, your new printer will provide you with years of productive, high quality work. It is to your advantage to read the following instructions thoroughly to ensure proper assembly of your new printing machine.

The Hopkins 1900 & 3100 Series 4, 6 and 8 Color Printing Machines are shipped in one crate containing 4 component types; the Base, Print Station Mount and Wheel as one component. The Print Stations and Shirtboards (1, 4 or 8 depending on the model.) and the Arm Assemblies. Also in the crate, generally taped to the machine is a

Parts Bag containing all of the hardware necessary to assemble your printer.

TOOLS REQUIRED FOR ASSEMBLY: One 1/2" & two 9/16" combination wrenches, (A 9/16" Socket & Ratchet may be useful.) and a hammer for insertion of the Roll Pins.

To assemble your Hopkins 1900 Series 4 Color or 3100 Series 6 / 8 Color Printer complete the following. (GO TO THE NEXT PAGE)

ASSEMBLY INSTRUCTIONS

1. Insert threaded Leg Levelers in each leg of the Base and adjust to level machine at the site of operation.
2. Mount the 4, 6 or 8 Arm Assemblies to the Wheel, using the $\frac{1}{8}$ "-16 x $1\frac{1}{8}$ " or $\frac{3}{8}$ "-16 x $1\frac{1}{4}$ " bolt and nylock nuts provided. Bolts enter from the bottom side of the wheel.
3. Locate Vertical Mounting Plates on Print Station Mount marked by the numbers 1 thru 4 or 8 depending on Model. The Print Station Mount is the center section of the machine located between the Wheel and the Base. Match the Print Stations, also numbered 1 thru 4 or 8 to corresponding Mounting Plates.
4. Loosely attach Print Stations to the Print Station mounts using the $\frac{3}{8}$ "-16 x 1" Hex Head Bolts and Nylock Nuts provided. Tighten until the Print Stations and Mounting Plates are in close proximity, leaving sufficient play for easy alignment of the Roll Pin holes. NOTE: THE TOP TWO MOUNTING BOLTS MUST ENTER FROM THE BACK SIDE OF MOUNTING PLATES.
5. Align Roll Pin holes and insert the Pins until they show an equal amount on both sides of the hole. This provides "Factory Alignment" of the Arm Assembly to the Print Station.
6. Wrench tighten Hex Head Mounting Bolts and Nylock Nuts.
7. Install screen clamp on arm assembly, if not in place, install using carriage bolts #22, nuts and washers.
8. Install Shirtboards on the Print Stations and secure. DO NOT OVERTIGHTEN KNOBS, OR DAMAGE TO SHIRTBOARD BRACKET OR TUBING WILL RESULT.

ASSEMBLY OF YOUR HOPKINS PRINTING MACHINE IS COMPLETE . . . ENJOY!

LEVELING ADJUSTMENT

REGGIE PIVOT CLAMP BOLT #20: This is a pivot and leveling adjustment allowing the operator to pivot the front of the screen frame up and/or down.

CARRIAGE BOLTS #22: This adjustment area is designed for raising and/or lowering the height, leveling side to side and setting desired OFF-CONTACT distance of the screen frame.

1. Master Gate, stamped with a "R". Level and register all screens to this station. (All stations are leveled and registered to this station during assembly.)
2. Place screen frame in the Screen Clamp and secure.
3. Lower screen to the Shirtboard. The distance between the front of the clamp and the back of the shirtboard should be approximately $\frac{1}{2}$ " to avoid deflection of the screen mesh in the frame, while leveling. Gently run your fingers over the screen surface checking for uniform contact with the Shirtboard. (If uniform contact exists, the remaining steps are not required.)
4. Loosen the adjustments in the following order: Both Carriage Bolts #22, on the Screen Clamp, the two Reggie Pivot Clamp Bolts #20, they run parallel to each other directly behind the clamps. NOTE: To loosen and tighten the Reggie Pivot Clamp Bolts, an 8"-10" combination wrench works best to obtain proper leverage. To help in the ease of loosening and tightening of the Reggie Pivot Clamp Bolts we have found that reaching the upper bolt from the top and the lower bolt from the underside of the Reggie works the best. (Remember, use the BOX END of the wrench.)

With use, screen frames often tend to warp so that all sides are not level with the Shirtboards printing surface. This can degrade the quality of the printed image. Therefore, the first step in registration is leveling the screen with the shirtboard. This process must be repeated with each screen.

5. Allow the screen to settle level to the Shirtboard.
6. Snug tighten the two Carriage Bolts #22. (Create intimate contact between the L-Brackets #18, and the backside of the Screen Clamp.)
7. Wrench tighten the Reggie Pivot Clamp Bolt Nut # 21, using BOX END of the wrench.
8. For setting the "Off Contact" now that the screen is leveled use the Carriage Bolts #22, to make this adjustment before tightening.
9. Wrench tighten the Carriage Bolt Nut #3.
10. MACHINES UTILIZING SIDE CLAMPS: the leveling procedures are very much the same, the adjustments are located differently. The Carriage Bolts #66, are located on the square tube portion of the Cross Tube. The U-joint or pivot adjustment is performed by pivoting the Side Clamps on the Cross Tube, this adjustment is controlled by a locking ratchet handle at the top back of each Side Clamp, for loosening and tightening. (DO NOT OVERTIGHTEN, AS COLLAPSE OF TUBING WILL RESULT.)

NOTE: DO NOT ADJUST GATE PAD. This is pre-set during assembly at the factory to ensure each Arm and Print Station meet at the same level. THIS IS NOT INTENDED TO BE AN OFF-CONTACT ADJUSTMENT.

In time you may wish to modify this procedure as you become more experienced in identifying the necessary adjustments for correcting a non level condition.

Entry into both Reggie and Micro Reggie registration systems is an air support system allowing the screen frame to remain at roughly the same level of Off-Contact set by the operator throughout the registration process.

SHIRTBOARD POSITION

To place the Shirtboard in the general position necessary for printing. It helps to have Reggie or Micro Reggie CENTERED before locating the Shirtboard to allow for maximum mobility of adjustment in the registration process.

1. Tape film positive of image to be printed to the shirtboard in position desired.
2. Bring the screen down over the image, and check for rough alignment with the film positive.
3. Loosen Shirtboard Assembly and adjust Shirtboard as necessary, and retighten. When tightening the Shirtboard Bracket, make contact with both knobs, snug the side knob first and then tighten the bottom knob APPROXIMATELY 1/2 TURN to secure the Shirtboard (To loosen, reverse procedure). Check for proper stability. DO NOT OVERTIGHTEN KNOBS, OR DAMAGE TO SHIRTBOARD BRACKET OR TUBING WILL RESULT.

SCREEN REGISTRATION

1. Make your major corrections by loosening the ratchet handles on the Reggie section of the Arm located behind the Clamp Assembly.
2. For minor adjustments in forward/backward of rotational directions, use the Thumb Screws #23, on the back of the Clamp #25, in combination with loosening the associated Clamp Knob #24, (Micro adjustments are best made when beginning with Thumb Screw extended approximately 1/4".)
3. Recheck each screen with the positive before applying ink to the screens.

MICRO REGGIE/MICRO REGISTRATION

1. Loosen the Clamp assembly and quickly register the screen to film positive. Secure the screen in the Clamp assembly.
2. Major side to side movements are made in the Clamp.
3. Major front to back movements are made with the Shirtboard.
4. Fine tune the registration by loosening the ratchet handles and utilizing the Micro adjusters (2 of #35, #44) to accurately dial in the registration. Micro Reggie allows you complete X, Y, and Rotational movement of the screen frame.
5. Tighten Ratchet Handles. (DO NOT OVERTIGHTEN.)

GENERAL MAINTAINENCE

1. Keep your machine CLEAN!
2. Lightly grease the Clamp Stems #27, whenever they need it.
3. Do not enter into a contest of strength with any of the adjustments on this machine. You may win!
Annually repack wheel bearings by:
 1. Removing dust cover screw and dust cover.
 2. Remove N-06 lock nut.
 3. Lift off wheel, removing upper and lower bearing.
 4. Repack bearings with heavy bearing grease.
 5. Apply light lubricating oil to felt seal ring in base of wheel.
 6. Reassemble. Tighten N-06 lock nut to seat bearings then back off until wheel turns freely with no rocking.
 7. Reinstall Dust Cover and tighten screw.

REPLACING ARM SPRINGS

1. Lower Arm into Registration Gate.
2. Remove the Arm Stop Bolt #4, and Bumper Tube #5, located at the top of Arm Mounting Bracket #1, by undoing Nut #3.
3. Hold on and carefully raise the Arm assembly to vertical position relaxing the Arm Springs.
4. Remove old Arm Springs and replace with new.
5. Lower Arm assembly into Registration Gate.
6. Re-install Arm Stop Bolt, Bumper Tube and Nut. Snug tighten only, DO NOT OVERTIGHTEN, AS ARM RESISTANCE WILL OCCUR.
7. Raise Arm assembly to the up position.

IMPORTANT

Hopkins Printing Machines are carefully designed and built to provide smooth, quick, user friendly operation. You will get the most from your machine by gaining a thorough understanding of how to make and use the adjustments provided on the machine. If you treat your machine properly and are careful not to over tighten adjustment bolts, knobs, etc. as well as follow the maintainance instructions, your Hopkins Printing Machine will provide you with outstanding performance for many years to come. Proper new employee training on these procedures is necessary to maintain the quality and ease of use that Hopkins equipment provides.

HOPKINS INTERNATIONAL

RECOMMENDED PRINTER MAINTENANCE & REPLACEMENT OF ARM SPRINGS:



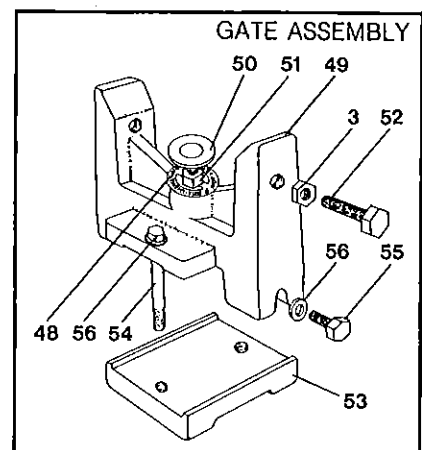
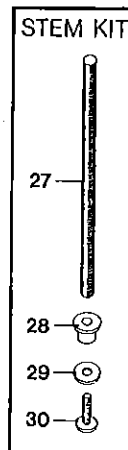
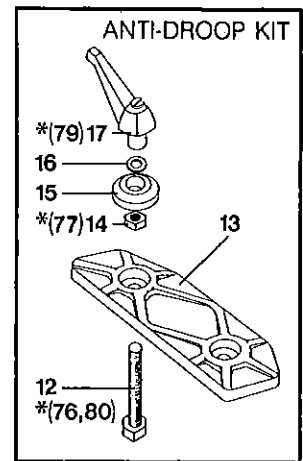
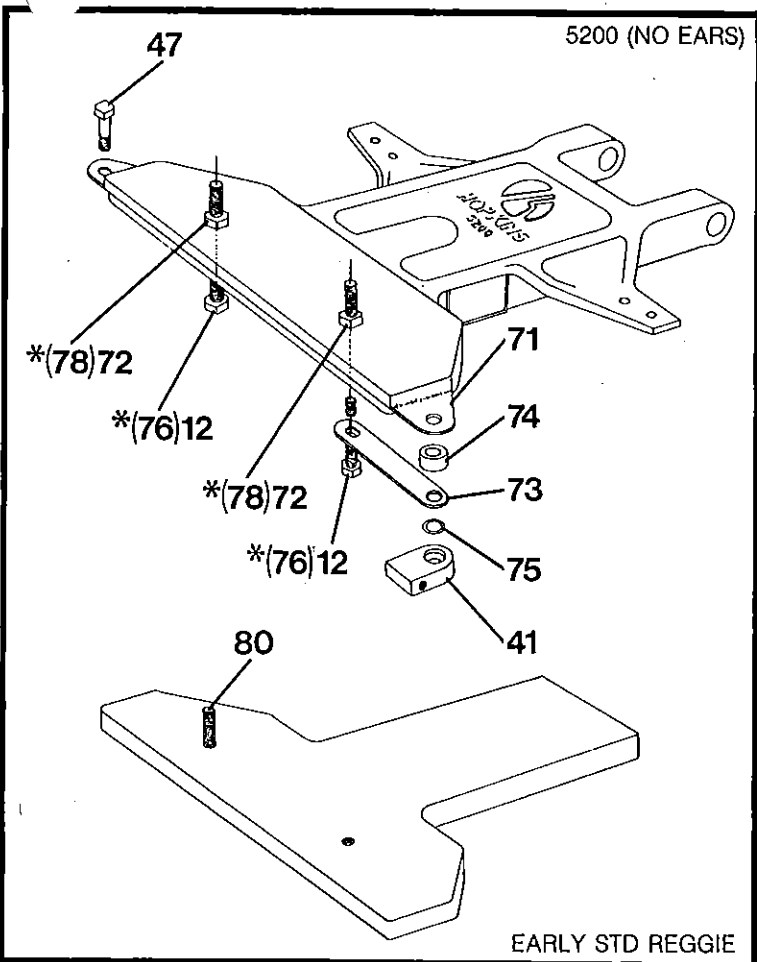
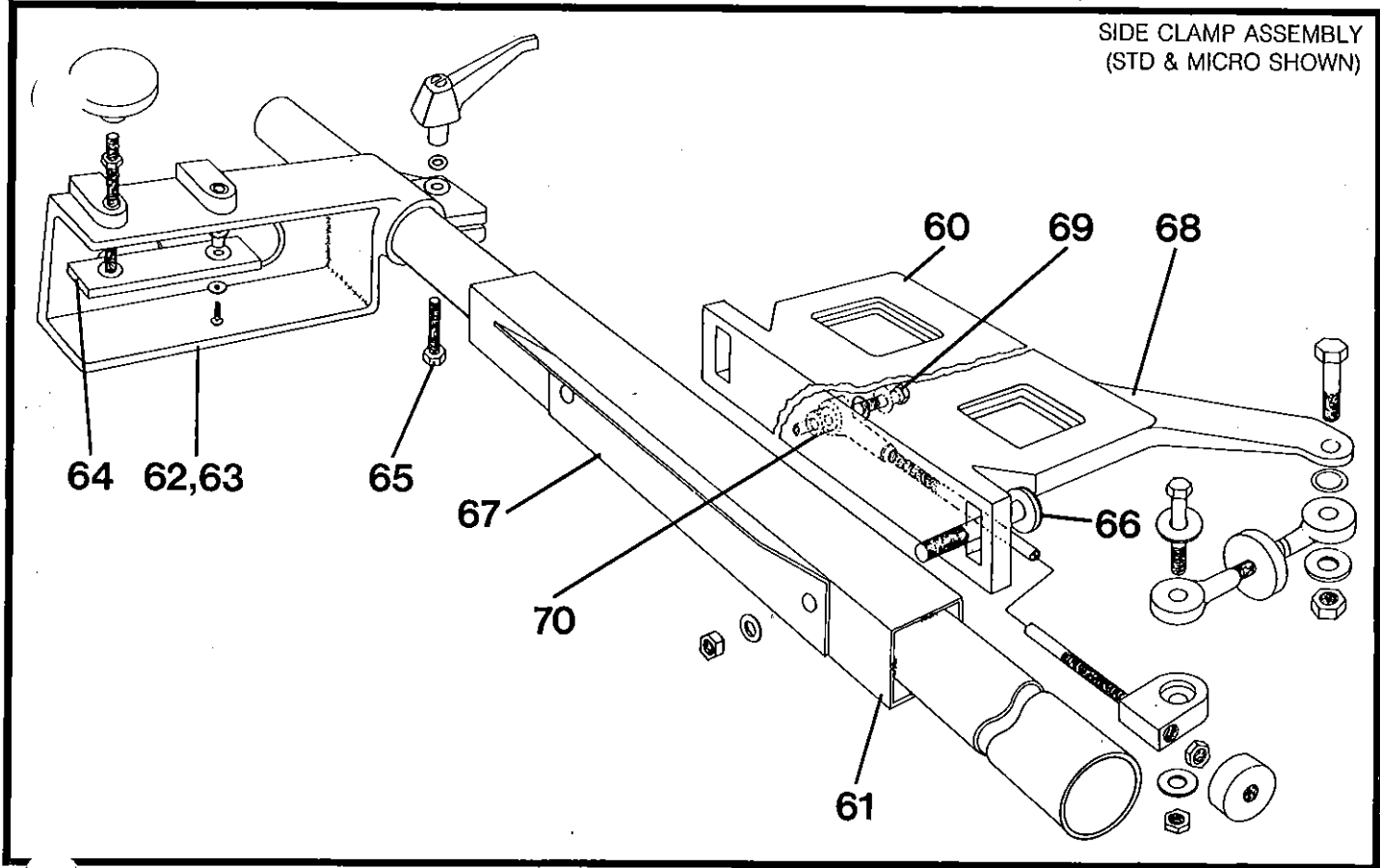
GENERAL MAINTENANCE OF PRINTERS

1. Keep your machine clean. Remove spray adhesive with nothing stronger than mineral spirits. **Caution!** Do not let a solvent-soaked rag sit on the painted surface of our older machines as the finish might be affected. The powder coating on our current machines is highly solvent resistant.
2. Keep the sliding parts of the print arms lightly greased. Never interchange sliding parts, they are machined as sets.
3. Lightly oil the washers on the center bolt of the print arm turntable (on 4C printers only).
4. Squirt oil in the lip of the lazy-susan ball bearing race once monthly (4C and older 6C printers only).
5. A light coating of grease on the threads of the clamp stems, the U-joint bolts, and the side carriage bolts will extend their life and keep them turning smoothly.
6. Do not overtighten nuts, bolts, etc.

TO REPLACE ARM SPRINGS

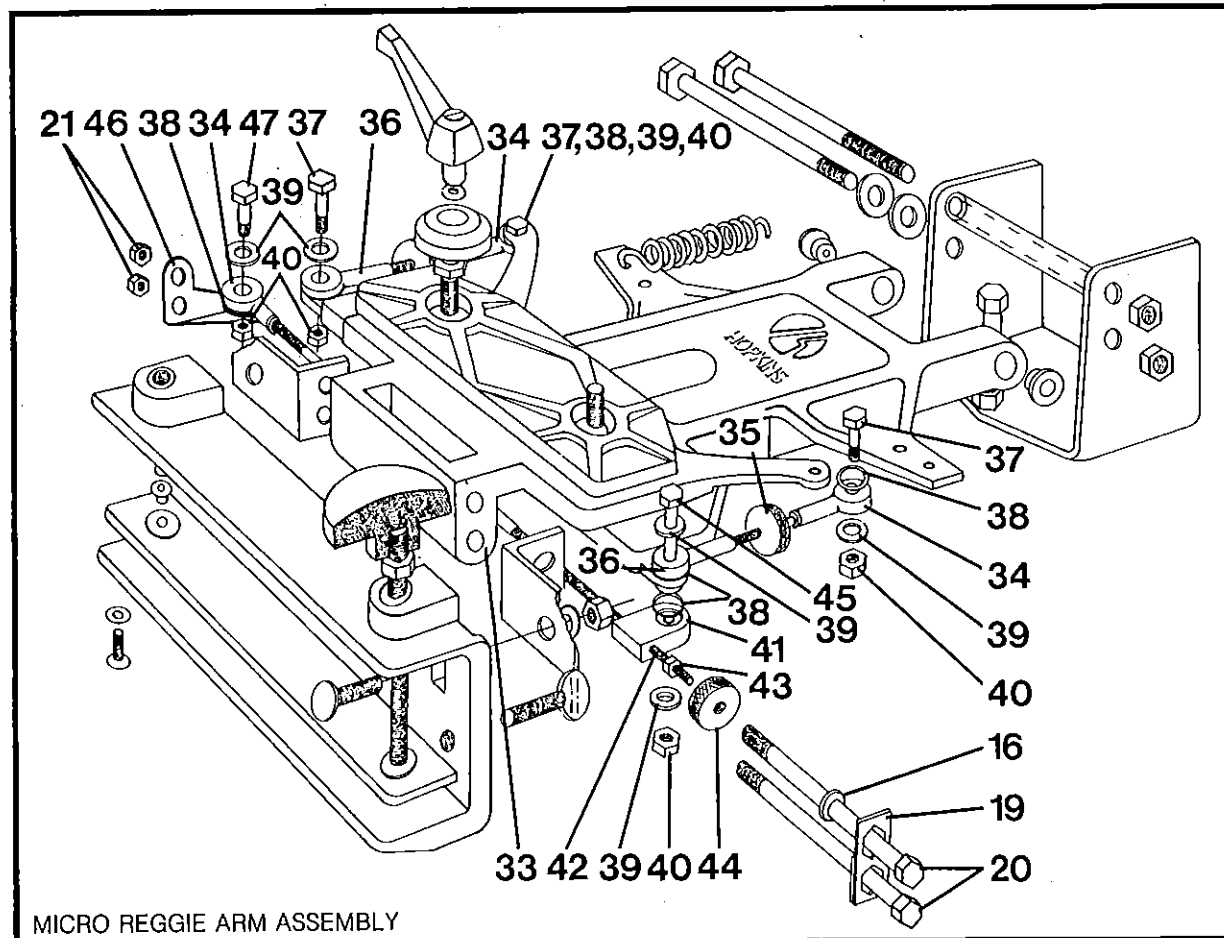
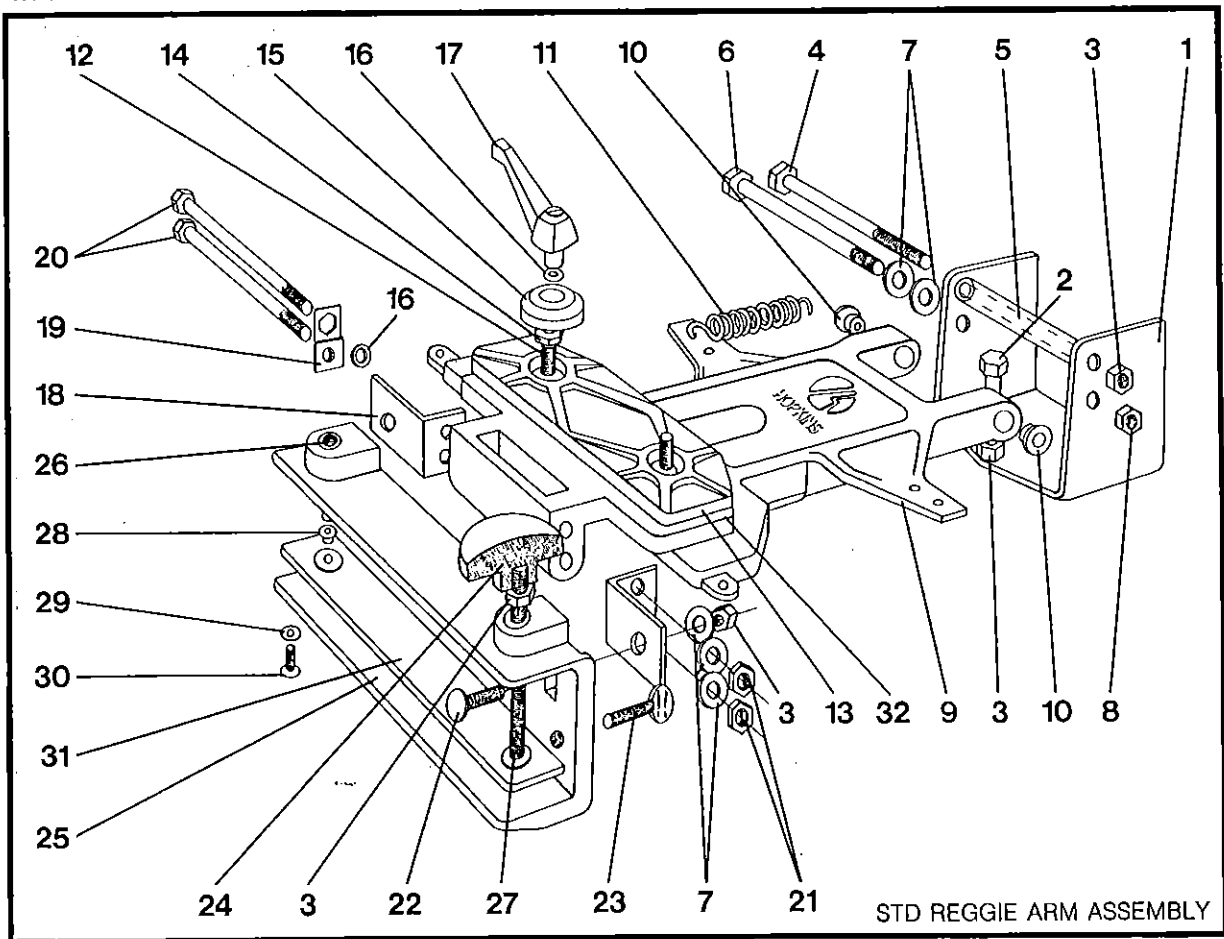
1. Lower screen clamp arm into a registration gate.
2. Remove arm stop bolt and arm stop tube from arm mounting bracket.
3. Remove spring retaining clips from the spring pad assembly (on Pre-Reggie and Early Reggie only).
4. **Carefully** raise the screen clamp arm to the vertical position to relax spring tension.
5. Install new springs.
6. Lower screen clamp arm.
7. Re-install arm stop bolt arm stop tube and spring retaining clips (on Pre-Reggie and Early Reggie only).
8. Commence printing.

PARTS DIAGRAM



*PART NO. IN () ARE FOR EARLY VERSION OF REGGIES, SEE PARTS LIST
PARTS NOT ENUMERATED ON ALL DRAWINGS ARE COMMON AND MAY BE ONLY NUMBERED ON ONE DRAWING.

PARTS DIAGRAM



PARTS NOT ENUMERATED ON ALL DRAWINGS ARE COMMON AND MAY BE ONLY NUMBERED ON ONE DRAWING.

PARTS & KITS

ORDERING INFORMATION: WHEN ORDERING PARTS, INCLUDE ITEM NO., PART NO., DESCRIPTION AND QUANTITY DESIRED, MACHINE TYPE AND SERIAL NO.

ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	SAG0009	1	ARM BRACKET	40	HFMR005	5	5/16-24 ESNA NUT
2	HF0026	1	SAFETY BOLT	41	MRA5251M	1	X-AXIS SPHERICAL BRG
	HF0045	6	HEX NUT, COARSE	42	MRA5255	1	X-AXIS ADJ. SCREW
	HF0014	1	STOP BOLT	43	HF51624	1	JAM NUT 5/16-24
5	PA06	1	BUMPER TUBE	44	MRA5257	1	X-AXIS ADJ. KNOB
6	AN644	1	PIVOT BOLT	45	HFMR003	1	BOLT, AN5-21A
7	HF0099	6	FLAT WASHER	46	MRA5252	1	X-AXIS ANGLE BRKT
8	AN365	1	LOCKNUT (ESNA)	47	HFMR0011	1	BOLT, AN5-10A
9	5200MR	1	REGGIE BASE (5200 MR)	48	A5279	1	GATE PAD WARNING PLATE
10	HF0107	2	BUSHINGS	49	CG-3A	1	GATE CASTING
11	ARMSPG	2/4	SPRINGS	50	HF0121	1	GATE PAD
12	HFMR004	2	REGGIE BASE BOLTS	51	HF0044	1	JAM NUT
13	MRCB4	1	REGGIE CLAMP PLATE	52	NB	2	NYLON BOLT
14	HFMR006	2	3/8-24 ESNA NUT, THIN	53	A-5264	1	CLAMP PLATE
15	MRA5253	2	CUP WASHER	54	HF0122	2	BASE BOLT
16	HF0089	3	FLAT WASHER	55	HF0119	2	SIDE BOLT
17	HF0143	2	RATCHET HANDLE	56	HF0093	4	FLAT WASHER
18	CL2M-L,R	2	L-BRACKET (1-RH, 1-LH)	60	SC4	1	SIDE CLAMP ANGLE CASTING
19	HF0078	1	BOLT LOCK PLATE	61	SAG15XX	1	CROSS TUBE XX = LENGTH
20	AN644	2	REGGIE PIVOT CLAMP BOLT	62	LSC1	1	SIDE CLAMP RIGHT SIDE
21	HF0114	2	3/8-24 HEX NUT	63	LSC2	1	SIDE CLAMP LEFT SIDE
22	HFO130	2	CARRIAGE BOLT	64	SC3	1	SCREEN CLAMP PLATE
23	HF0035	2	THUMB SCREW	65	HF0018	1	BOLT 2"
24	SDA0076A	2	HAND KNOB	66	HF0100	2	CARRIAGE BOLT
25	CC2	1	CLAMP CASTING	67	TPL030	1	SQUEEGEE REST
26	RC38	2	INSERT	68	MRC5262	1	SIDE CLAMP MICRO ANGLE CSTG
27	HF0115T	2	STEM	69	HFMR010	1	AN5-12A BOLT
28	HF0206	2	FLANGED WASHER	70	MRA5275	1	SPACER
29	HF0058	2	FLAT WASHER	71	MRB5245	1	EAR PLATE
30	HF0205	2	BUTTON HEAD SCREW	72	HF0114	2	LOCKNUT 3/8-24
	CBC	1	SCREEN CLAMP BAR	73	MRA5254	1	X-AXIS BRACE
32	RCB3	1	REGGIE ANGLE CASTING	74	MRA5259B	1	X-AXIS SPACER, BIG
33	MRC5258	1	MICRO REGGIE ANGLE CASTING	75	MRA5259A	1	X-AXIS SPACER, SMALL
34	MRA5250L	3	ROD END, L.H.	76	HF0063	2	3/8-16 x 2 1/2 TAP BOLT
35	MRA5256	2	Y-AXIS ADJ. SCREW	77	HF0060	2	3/8-16 ESNA NUT, THIN
36	MRA5250R	2	ROD END, R.H.	78	HF0045	2	LOCKNUT 3/8-16
37	HFMR002	3	BOLT, AN5-11A	79	HF0153	2	3/8-16 RATCHET HANDLE
38	HFMR0010	6	O-RING, 5/8 O.D. x 1/16 THICK	80	HF0064	2	3/8-16 x 2 1/4 TAP BOLT
39	HF0097	6	FLAT WASHER, 1/4 or 8MM				

UPDATE KITS

KIT NO. HK0001	CLAMP STEM UPDATE KIT CONTAINS: PT NO. 27-30 (2 OF EACH)
KIT NO. HK0002	ANTI DROOP KIT CONTAINS: PT NO. 12-17 (PLEASE STATE IF YOUR ARM HAS FINE OR COARSE THREADS)

MICRO REGGIE RETROFIT KITS KITS CONTAIN QUANTITIES FOR ONE ARM

KIT NO. HK0003	FOR PRINTERS WITH 5200MR REGGIE BASE CONTAINS: PT NO. 33-47
KIT NO. HK0004	FOR PRINTERS WITH 5200 REGGIE BASE, NO EARS, AND BOLT (#12) W/FINE THREADS CONTAINS: PT NO. 12-17, 33-36, (2 OF 37), 38-46, (2 OF 47), 71-75
KIT NO. HK0005	FOR PRINTERS WITH 5200 REGGIE BASE, NO EARS, AND BOLT (#12) W/COARSE THREADS (SAME AS CLAMP STEM #27) CONTAINS: PT NO. 13, 15, 16, 33-36, (2 OF 37), 38-46, (2 OF 47), 71, 73-79
KIT NO. HK0006	FOR PRINTERS WITH EARLY STD REGGIE BASE CONTAINS: PT NO. 13, 15, 16, 33-36, (2 OF 37), 38-46, (2 OF 47), 71, 73-75, 77-80
KIT NO. HK0007	FOR SIDE CLAMP, WITH 5200MR/5300MR REGGIE BASE CONTAINS: PT NO. 34-45, 68-70
KIT NO. HK0008	FOR SIDE CLAMP, WITH 5200/5300 REGGIE BASE, NO EARS CONTAINS: PT NO. 12-17, 34-36, (2 OF 37), 38-47, 68-75
KIT NO. HK0009	FOR SIDE CLAMP WITH EARLY STD REGGIE BASE CONTAINS: PT NO. 13, 15, 16, 34-36, (2 OF 37), 38-47, 71, 73-75, 77-80

HOPKINS INTERNATIONAL

REPLACEMENT OF ARM SPRINGS
ON HCR, ALL 4400 SERIES I, SERIES II AND ANY
PRINTER WITH SLIDE-IN ROUND SPRING RODS



SPRING REPLACEMENT PROCEDURE:

1. Lower screen clamp arm into registration gate.
2. Remove arm stop bolt and bumper tube located at the top of the arm mounting bracket.
3. **Carefully**, raise the arm assembly to its vertical position, relaxing the spring tension.
4. Remove and save the spring bar retaining clips.
5. Remove springs by sliding the spring bar side to side. This is accomplished by using a soft faced hammer or a block of wood to tap the bracket spring bar to the right and left to remove the metal retaining rings that hold the spring bar in place.
6. Instead of using metal retaining rings to locate the spring bar we are using two rubber O-rings on the inside of the bracket side plates.
7. Center the O-rings on the spring bar between the side plates. Install the arm springs by sliding the spring bar side to side. Center the spring bar in the bracket, install the spring bar retaining clips and make sure the arm springs are in their respective grooves and lower the arm into the registration gate.
8. Re-install the arm stop bolt, bumper tube and nut. Snug tighten the nut only, do not overtighten as it will bind arm movement. Roll O-rings out against each side plate.
9. Raise the arm assembly.