Thank you very much for choosing this Felins Rotary Pak-Tyer tying machine. This tying machine is designed and manufactured to tie many articles with string, poly tape or elastic materials automatically.

When you begin to use this machine, please consult instruction manual to thoroughly understand the construction, handling, operation and maintenance of the machine. When properly operated and maintained, this machine will never fail to contribute to the efficiency and cost reduction of your bundling operation.

Felins, the leader in tying machines, proudly provides toll free product line support to ensure your Rotary Pak-Tyer continues to provide years of reliable service.

Thanks, again

Felins USA, Inc.

8306 West Parkland Court
Milwaukee, Wisconsin 53223

Phone: 800-843-5667
Fax: 414-355-7559

E-mail: salesteam@felins.com . Website: felins.com

THE FUNCTION

(1) Factors to be considered.

(A) The kind of string. ( ) r.p.m. ( ) m/m thick.
The machine is adjusted in accordance with the tying material specified on your order.
Please consult us or our agencies when string type is to be changed.

(B) The safety device: ( ) m/m wide x ( ) m/m long.
RPT 8 : 286 x 254
RPT 12 : 457 x 450
RPT 16 : 622 x 590
BMT 36 : 990 x 889

(2) The safety device: Lever system is adopted.

(3) The machine has four castors (wheels), it can be moved easily.

(4) The string tension adjuster is furnished, which easily controls the tension of string (The tension booster).

(5) The unit to prevent the arm fatigue (brake) is furnished, which does not give any strain to the arm when the arm is started and stopped. This means excellent durability.

(6) The machine has the covers, there is no danger even if the arm is rotated.

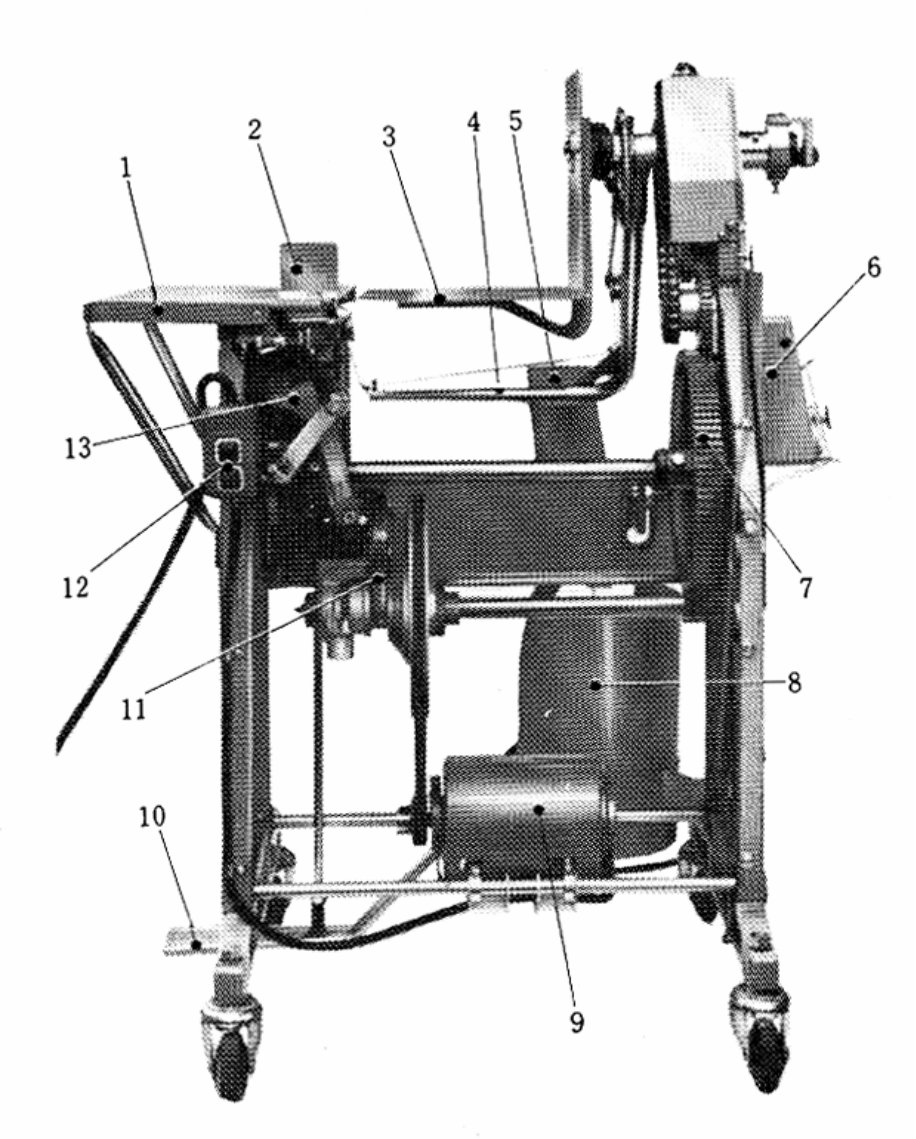
THE PERFORMANCE

(1) The Necessary Tying Time: 1-2 seconds.

(2) The Power Source: ( )V, ( )C/S.

Note: The running speed will vary with the size of the pulley of motor.

OUTLINE OF THE TYING MACHINE



1	Table
2	Standard at Knotter
3	Loose Table
4	Twine Arm
5	Brake
6	Tension Booster
7	Main Gear
8	Twine Can
g	Motor
10	Pedal
11	Clutch
12	Push Button Switch
13	Tying Unit

SEQUENCE OF OPERATION

The mechanism of this machine will be explained in the order of operation

(1) Connect the power wire to the power source.

(2) Push on the power switch and lift up the lever of the safety device. The motor will rotate.

(3) Put on an article to be tied and make it the standard at knotter. Hold it with hands in order not to be moved from the position and step on the starting pedal. The clutch will be engaged and the clutch shaft (E04, E05) will rotate.

(4) The drive gear (E02, E03) attached to the clutch shaft engages with the main gear (D03, D04) and therefore the main shaft which is attached will rotate.

(5) By the rotation of the main gear, the spur gear (H42) engaging will rotate and through the chain transmission, the arm will start to rotate (the direction of the rotation during the operation is clockwise, facing the front).

(6) At the same time with the rotation of the main gear, the ram wheel (D17) under the table will work.

(7) In the first rotation of the arm, the string hits the side of the draw slide (A03) and is prevented from entering the string holder button (C01) in the second rotation, when the arm comes close to the string holder button, the draw slide (A03) goes back by means of the cam, and the string passes the clearance and is caught by the string holder button (C01).

(8) The draw slide moves forward and the edge holds the string wound around the string holder button and thrusts them toward the knotter assembly.

(9) When the strings are in far enough, the knotter assembly moves forward and catches them with the knotters. Opening the knotters gradually, it turns counter-clockwise and winds the two strings around the knotters. When it finishes turning, it closes the knotters onto the two strings.

(10) The moment when the knotter assembly with the strings begins to return backward, the stripper (A17) comes down and holds the loop of the strings wound around the knotters.

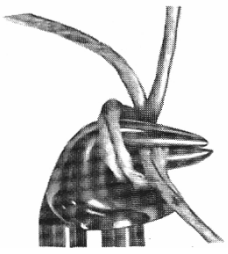
(11) Therefore, when the knotter goes back, the strings being bitten are drawn through the loop; and the loop goes off the knotter and makes a knot.

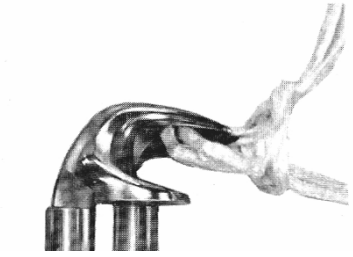
(12) When the knotter begins to go back, the knife trap (C08) works and the knife (C03), cuts one string and simultaneously draws off the string from the string holder button with the slot of the knife trap.

(13) When the knotter assembly finishes going back, it returns to the original position, and opening the knotter to release the string being bitten. Now the cycle comes to an end.

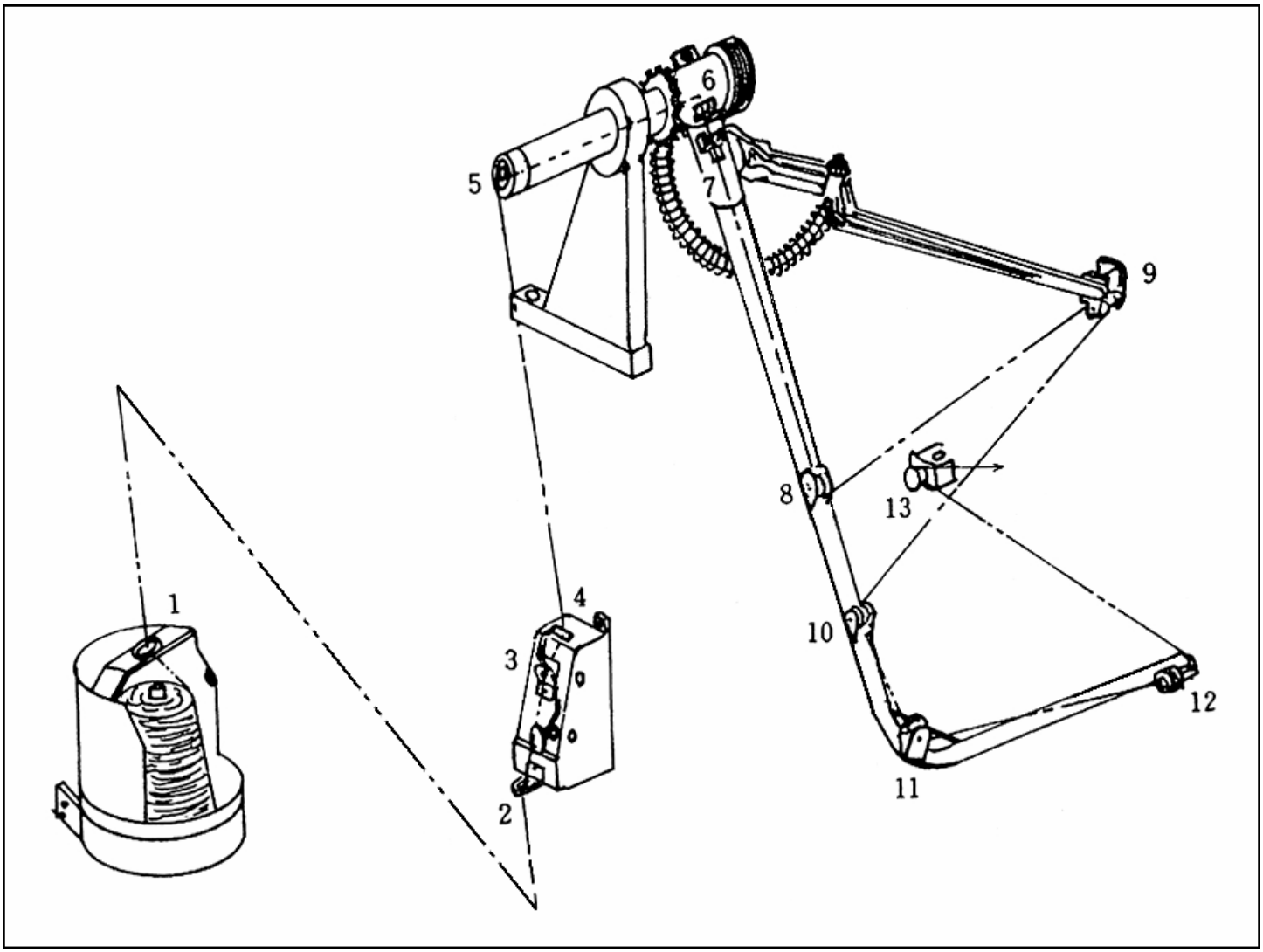
(14) When the tying cycle finishes, the clutch member (E14) goes off automatically [see the details of the clutch] and is ready for the next cycle to begin. This enables smooth continuous operation.

The above is a description of a complete cycle. To understand the above mechanism, turn off power to the switch and step on the pedal and turn the v-belt by hand to ascertain the state of the operation.





HOW TO SET THE TWINE



HOW TO SET THE TWINE

(1) On the left side of the machine, a twine holder is furnished. In the center of the can there is a fixed shaft, and a plate spring is furnished there above. Fit in a twine bobbin on the shaft from the above.

(2) Run the string through the string guide of plate (1) at the top of the can, through the guide (2) of the tension booster and then through the moving twine keeper (3), (4).

(3) The string runs from the end (5) of the arm body through the inside of the arm shaft and to the arm hole (6) and goes out.

(4) Run the string out of the arm hold through the guide rollers (7), (8), (9), (10) and (11).

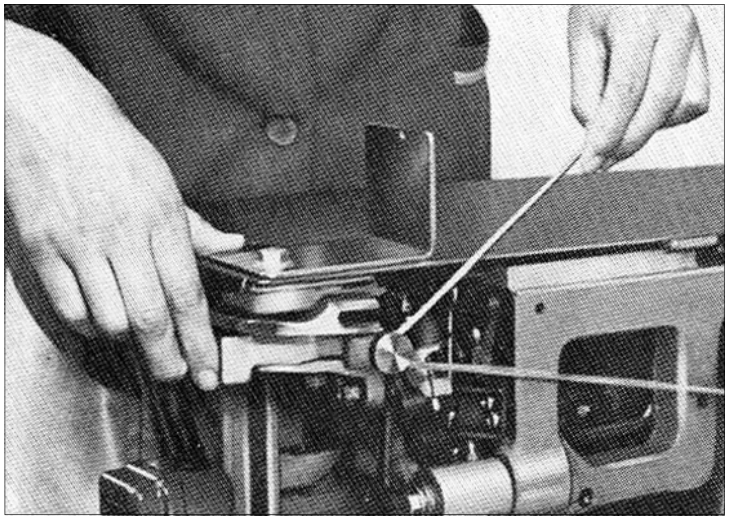
(5) Then run the string from the guide roller (11) at the bend of the arm through the guide (12) at the end of the arm and pull it out rather lengthily.

(6) Bring the length of string pulled out to the string holder button and wind it around the holder button from the bottom to the top Drawing the string with the left hand, pull on the string-holder button release lever toward you with the right hand then the holder button is pushed and a clearance is created. Insert the string in the clearance and press it with the holder button [see the picture below left]

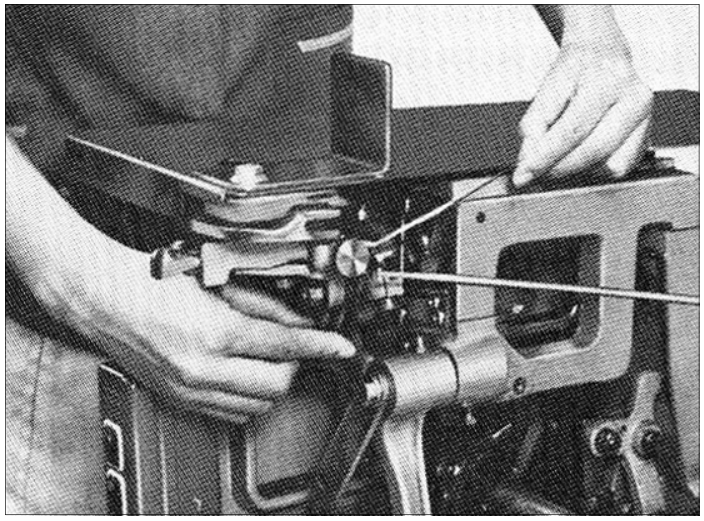
(7) Drawing the string with the left hand about 10 cm to the Left, pull the lower part of the knife trap toward you and the string will be cut with the knife, Now the twine setting is completed.

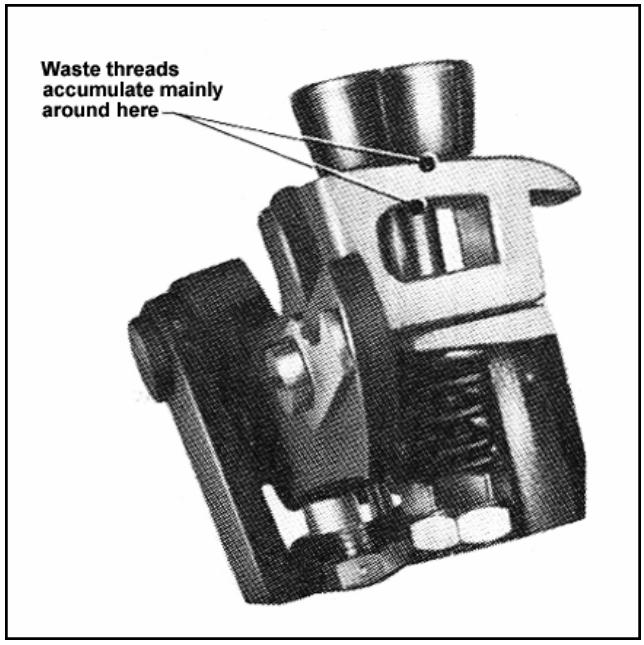
When there are free threads left in the clearance, remove them with the equipped “tweezers”. If free threads accumulate in operation on the surface of the string holder or the holder button, it causes an unbalanced knotted loop. So always remove them.

HOW TO SET THE TWINE



HOW TO CUT THE TWINE





HOW TO USE THE MACHINE

(1) Reassure that the string runs in the path shown in the former sketch.

(2) Connect the power wire to the power source.

(3) Push on the power switch. The motor will) rotate and the pilot amp to indicate the operation will get brightened at the moment.

(4) Lift up the lever of the safety device.

(5) Put on the table the article to be tied as illustrated in Fig. 1

Holding it with both hands, step on the pedal, and the work of tying will start automatically

Never move the article to be tied while the arm is rotating.

If you continue to step on the pedal (K17), the tying work will be repeated in sequence. Therefore, when you once step on the pedal and the arm begins rotation, remove your foot from the pedal.

Continuous rotation may cause machine trouble.

(6) Step on the pedal and all the tying operation will be conducted automatically just in the order mentioned by the Outline of The Tying Machine and the machine will stop.

(7) For the next tying operation, repeat the procedure from step 5.

If the power switch is kept on, the pilot lamp will continue lighting to indicate that the switch is on.

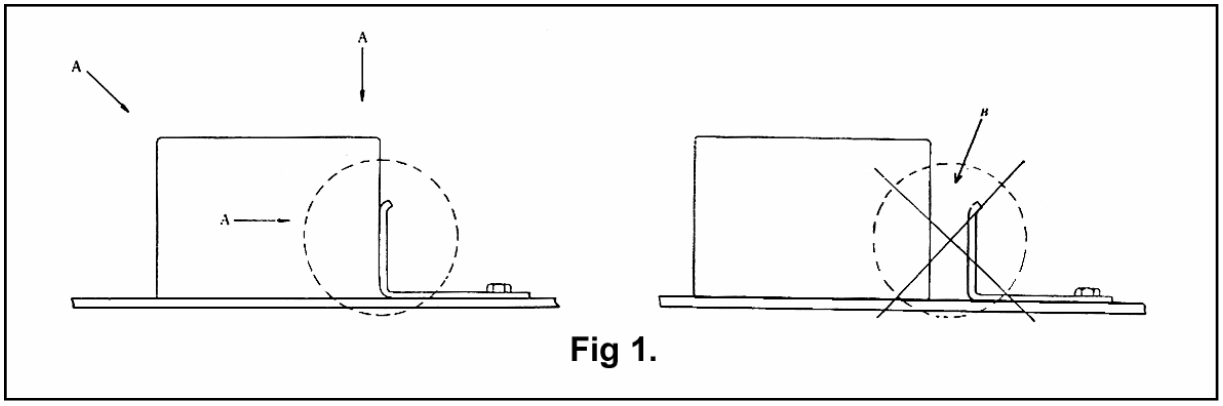


Fig 1.

CAUTION
When you turn off the switch, never fail to bring down the lever of the safety device.
When you adjust, repair or oil the machine, be sure to disconnect power in advance.

(1) Assure if the twine runs in the proper path.

(2) Check if there is accumulation of waste threads on the string holder button.

(3) Inspect if the knife is in good condition to cut.

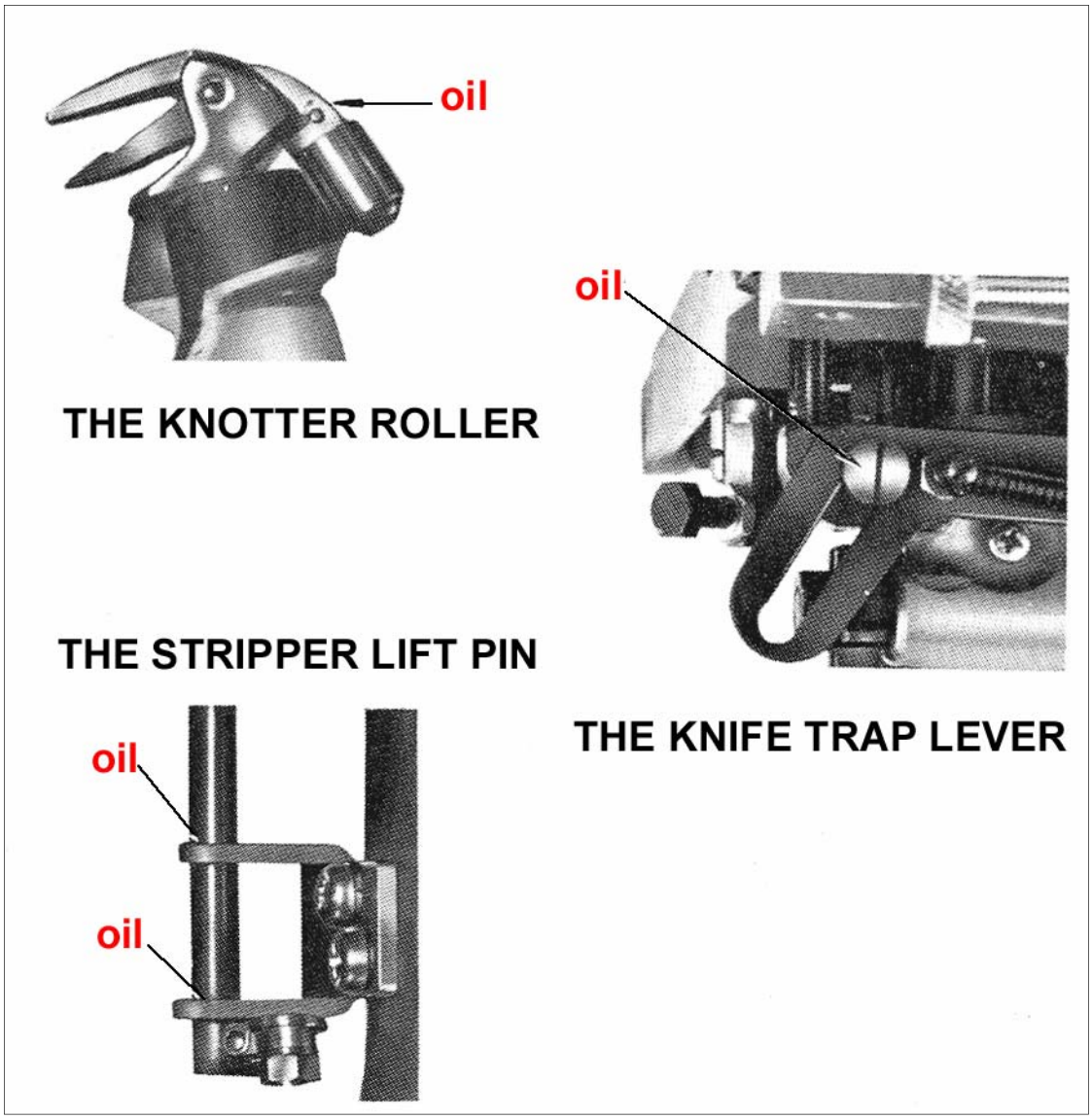
(4) Assure the necessary parts are oiled enough .

(Parts which requires machine oil are marked in red. Be sure to oil them once a day)

(Parts which require grease should be greased once a month The parts to be oiled with special care will be shown with the following pictures)

CAUTION

On oiling, be careful never to oil the clutch leather disc of the clutch unit.



CAUTIONS ON HANDLING THE MACHINE

(1) It is so designed that the pedal does not go down even if it is trodden unless the lever of the safety device is lifted. So be sure not to step on it except when tying is to be conducted.

(2) Be careful not to touch the rotating parts with the hands or body since t is dangerous.

(3) Avoid idle operation of the machine.

(4) Never take off the article to be tied from the table until the tying is finished. When you take off the article after it is tied, push it forward once and then take it off toward you.

(5) There may be a case that a screw driver or other tools are dropped in the machine and caught between gears, or some other parts, and the machine does not move. That may cause damage of the motor, the gear, or some other parts, so care should be taken.

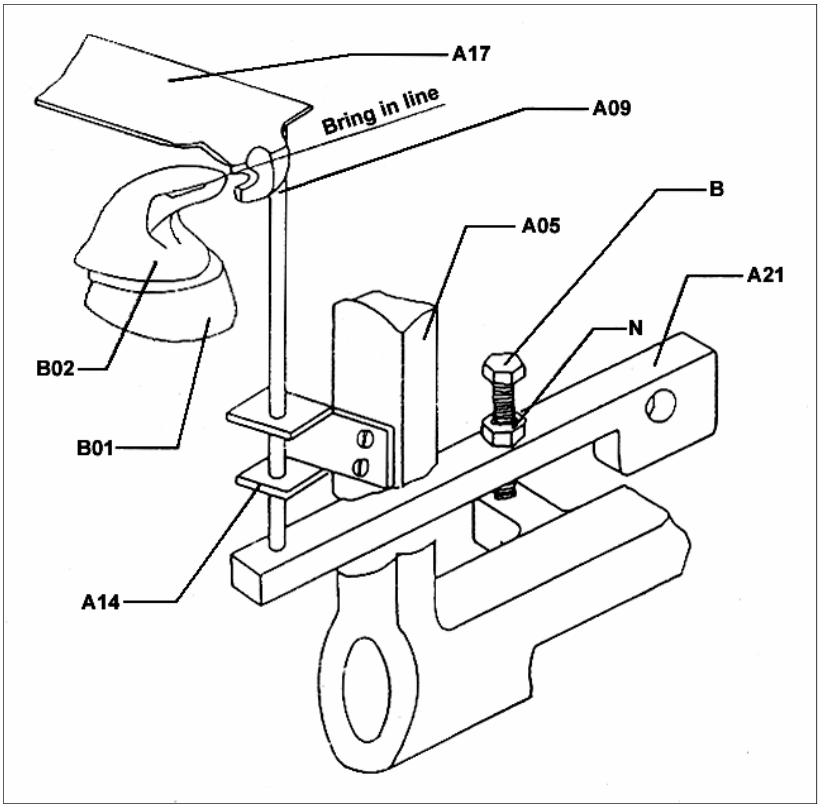
(6) Never file the parts.

(7) When repair or adjustment is finished, never fail to turn the machine once manually to assure that there is no abnormality, before you use it.

(8) Clean and oil the machine after the operation every day. Cleaning and oiling will add to the life of the machine and will help early finding of trouble.

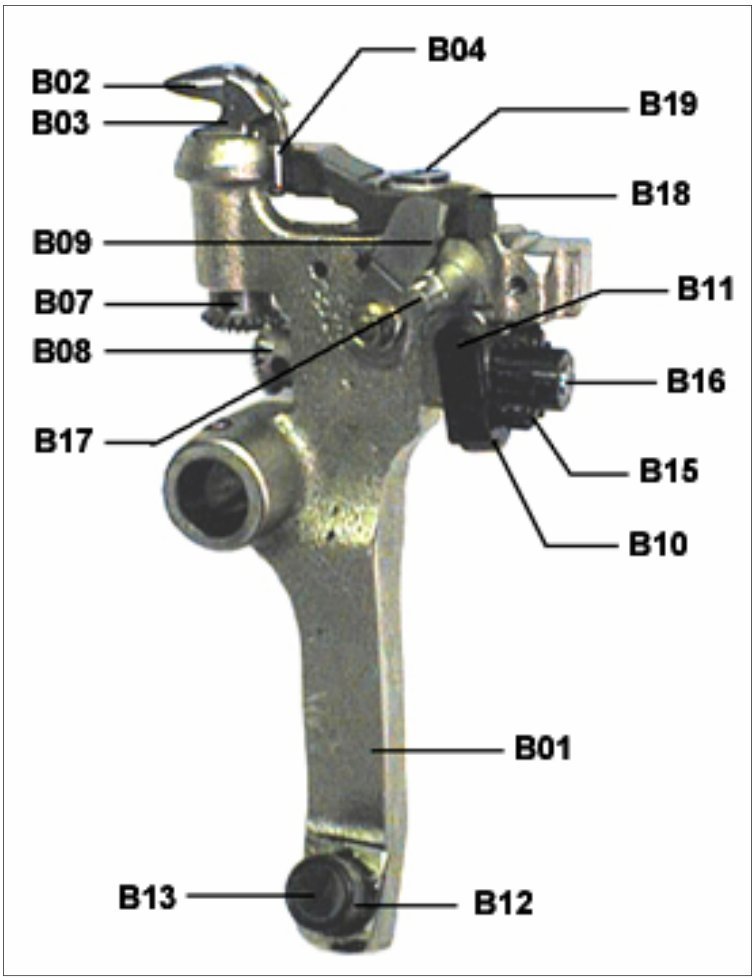
THE STRIPPER ADJUSTMENT ILLUSTRATION

As illustrated below, bring the stripper in a line with the mouth of the knotter with the adjusting bolt of the lift lever. When matching is completed, tighten the nut of the adjusting bolt.

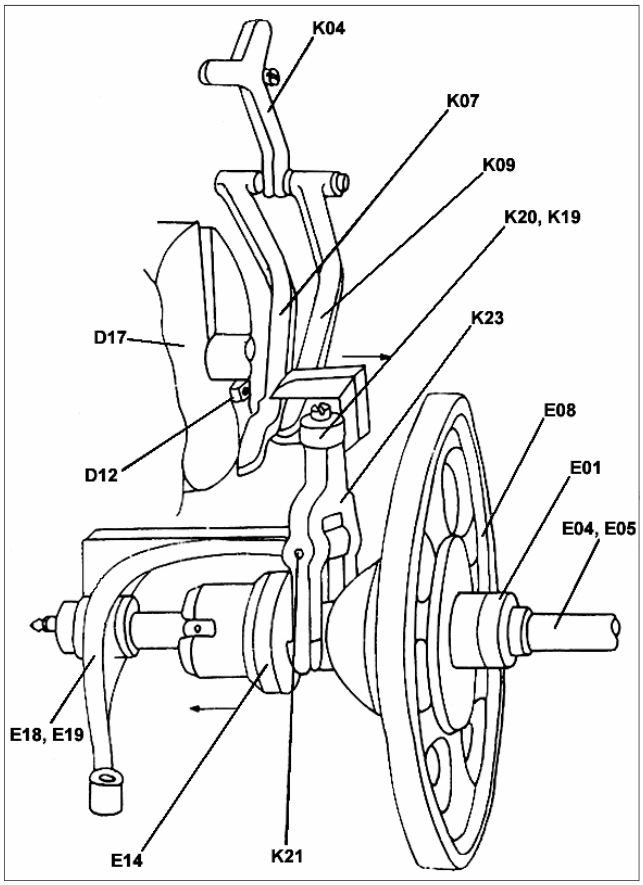


A05	**Main Table Casting**
A17	**Stripper**
A21	**Lift Lever**
A09	**Lift Pin**
A14	**Lift Pin Guide**
B01	**Knotter Head**
B02	**Knotter**
B	**Adjusting Bolt B6x20**
A	**Lock Nut 6**

KNOTTER ASSEMBLY



B01	Knotter Head
B02	Knotter (upper)
B03	Knotter (lower)
B04	Knotter Roller
B05	Knotter Washer *
B06	Knotter Lower Pin *
B07	Knotter Miter Gear (knotter)
B08	Knotter Miter gear (pinion)
B09	Knotter Flat Spring
B10	Knotter Fixer
B11	Knotter Fixer Pin
B12	Knotter Head Roller
B13	Knotter Head Roller Pin
B14	Pinion Gear Fix Spring *
B15	Pinion (star wheel)
B16	Pinion Shaft
B17	Tip Up Lever Stud
B18	Knotter Lever
B19	Knotter Lever Screw
B20	Spring Stud *
*** not shown**	



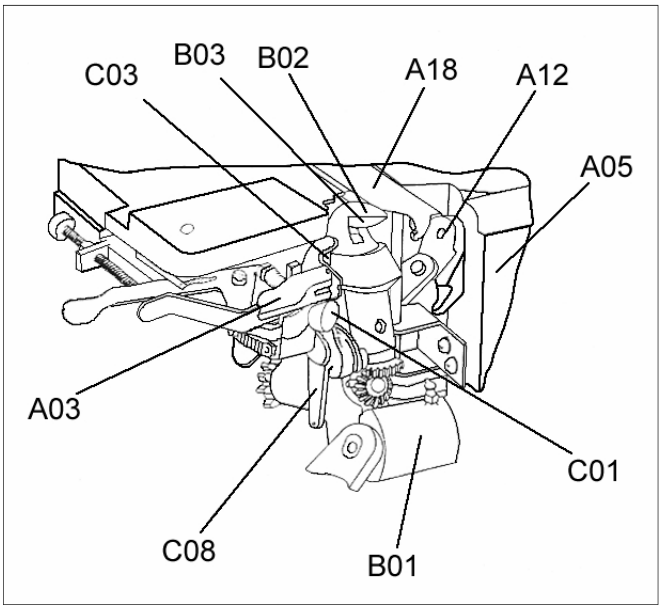
CLUTCH ASSEMBLY

E04, E05	Clutch Shaft
E01	Clutch Shaft Collar-C
K23	Clutch Fork
K21	Clutch Pin
E18, E19	Clutch Shaft Bracket
E14	Clutch Member
K04	Trip Bell Crank
K07	Clutch Block Kickout Lever-A
K09	Clutch Block Kickout Lever-B
E08	Clutch Pulley
K20, K19	Clutch Fork Roller and Screw
D12	Clutch Key
D17	Cam Wheel

EXPLANATION

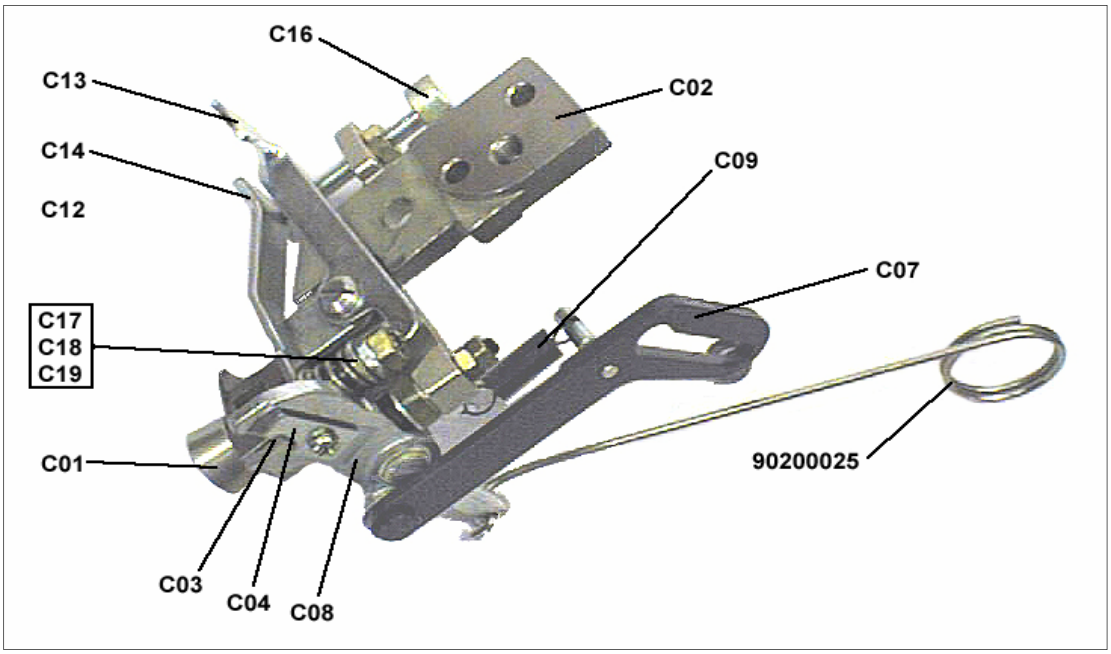
With the rotation of the cam wheel, the clutch key hits the clutch block kick out lever-A. Then the clutch fork moves in the direction of the arrow A with the clutch pin as the center of the motion. The clutch paws push off the clutch member from the clutch pulley in the direction of the arrow B, and stop the rotation of the clutch shaft.

MAIN TABLE CASTING ASSEMBLY



A05	Main Table Casting
A03	Draw Slide
A12	Tip-up Nail
A18	Stripper
B01	Knotter Head
B02	Knotter (upper)
B03	Knotter (lower)
C01	String holder Button
C08	Knife Trap
C03	Knife

STRINGHOLDER ASSEMBLY



C02	String holder	C03	Knife
C01	String holder Button	C09	Knife Trap Spring
C07	Knife Trap Lever	C14	Stringholder Button Adjusting Arm
C08	Knife Trap	C12	Stringholder Release Lever Pivot Screw
C04	Knife Holder	C16	Stringholder Button Adjusting Screw
C17, C18, C19	Stringholder Button Spring	90200025	Knife Trap Extension Handle
C13	Stringholder Button Release Lever	N	Nut

MAIN TABLE CASTING ASSEMBLY R & R

(1) Remove 6mm bolts from the table as shown below.

(2) Remove 5B bolt from upper stay guard (page 14).

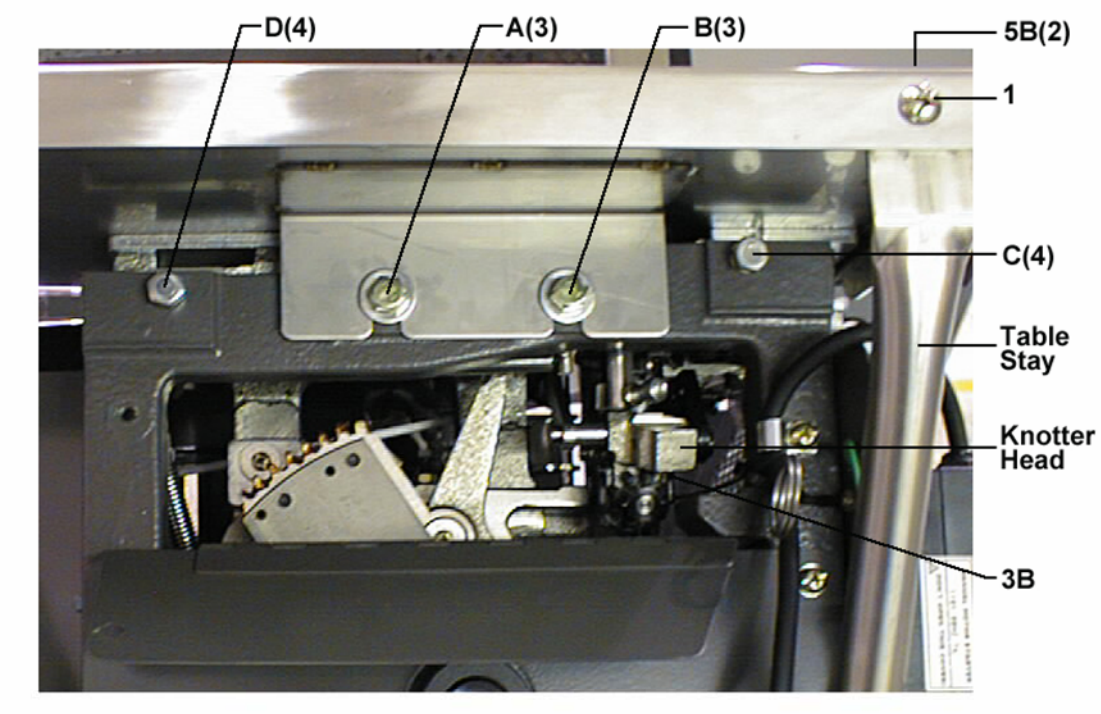
(3) Loosen bolts A & B (for table fastening), and remove the table.

(4) Loosen bolts C & D.

(5) Loosen the knotter head supporting bolts 3B (below) and 4B (page 14).

(6) Remove the main table casting by bringing the knotter roller (B12) to the switch cam (D14) by the above work. The main table casting assembly can now be removed (page 14).

(7) To re-install, reverse the above order.



KNOTTER R & R

(1) Turn pulley by hand until the knotter head roller and the pin (B12) come to the groove of the switch cam (D14) and make the knotter stand vertically. [See the knotter installation illustration, page 14].

(2) Remove 3B bolt (page 14) and loosen 4B bolt.

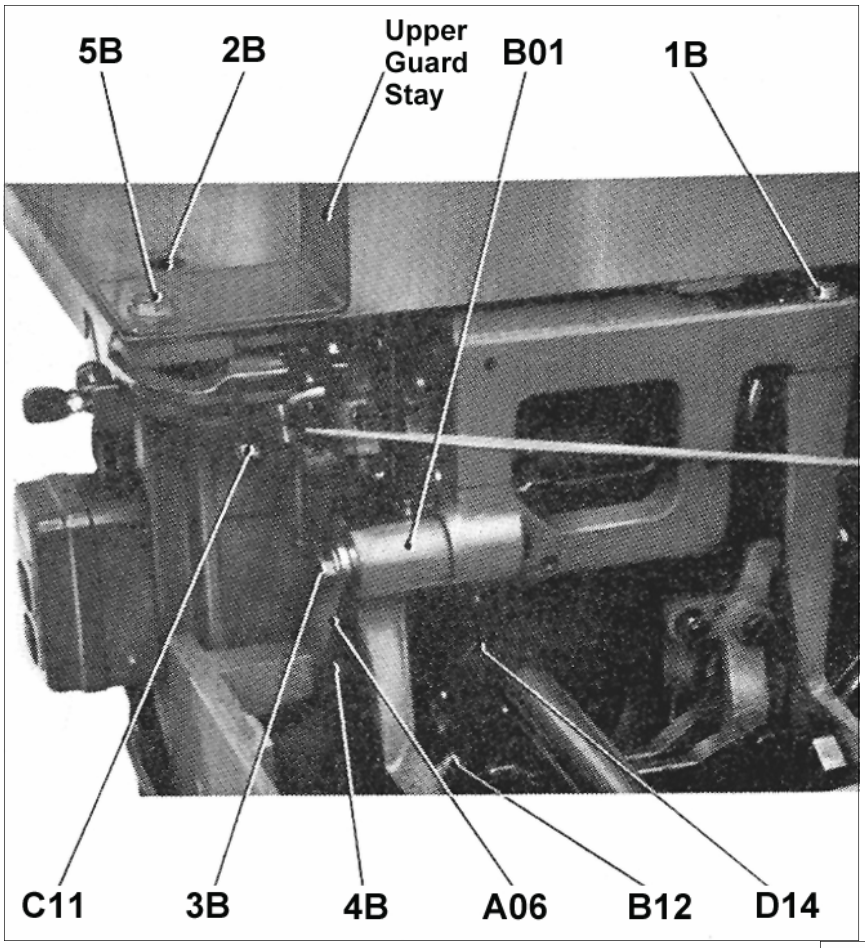
(3) Remove the knotter head supporter from the machine.

(4) Holding the knotter head (B01), take off the tip-up lever (A11) from the tip-up lever pin (A10). The knotter head assembly can now be removed.

(5) To re-install, work in order; 1-4-2-3.

(6) Be sure to match the knotter to the normal position as illustrated.

(7) Adjust the position of the stripper..

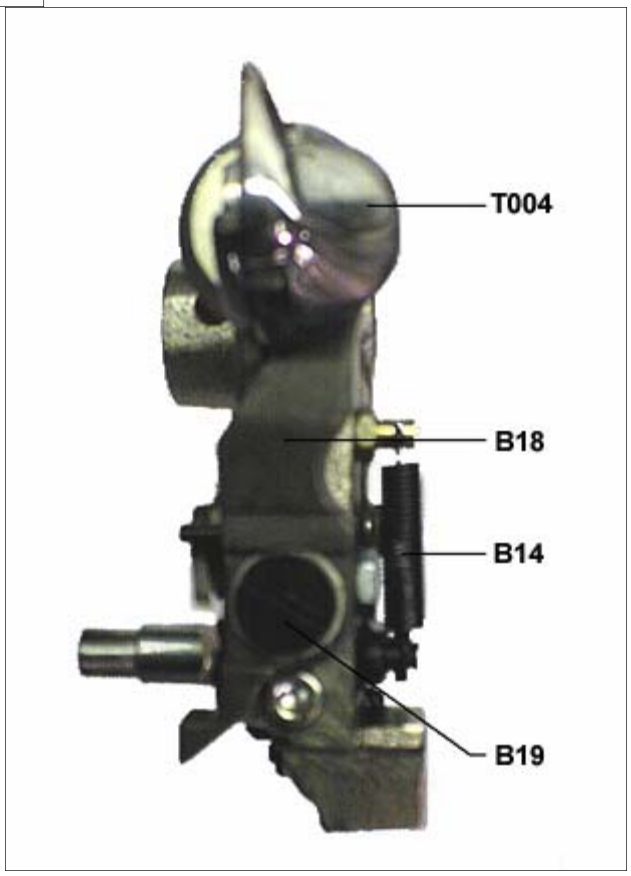


NORMAL KNOTTER POSITION

D14	Switch Cam
B12	Knotter Head Roller & Pin
C11	Knife Trap Lever Pin Guide
1B	Bolt (frame)
2B	Bolt (string holder assy)
3B	Bolt (knotter head)
4B	Bolt (knotter support)
A06	Knotter Head Supporter
B01	Knotter Head
U13-16	Upper Guard Stay

KNOTTER INSTALLATION

T004	Knotter Assembly
B18	Knotter Lever
B14	Pinion Gear Fix Spring
B19	Knotter Lever Screw



TROUBLESHOOTING

Motor does not start

Cause	Remedy
1. Broken wire.	1. Replace broken wire.
2. Poor electrical contact at terminals.	2. Secure terminal connections.
3. Motor failure	3. *See* Remedy For Motor Trouble.

Clutch & Pulley make noise

Cause	Remedy
1. Lack of grease in the pulley needle bearing.	1. Lightly grease—do not over grease.
2. Improper calking of the rivet (E07 to fasten the clutch leather disc (E09).	2. Calk as to draw in.
3. Due to friction between the clutch kick out (D12) and the clutch block kick out lever-A (K07), the clutch leather disc cannot clear off the clutch member.	3. Replace the abraded parts.

The arm repeats rotation and doesn't stop

Cause	Remedy
1. Worsening of item 3 in the above column.	1. Replace the abraded parts.
2. Abrasion of the clutch lever or clutch kick out.	2. Adjust or replace the part.
	3. Disassemble and replace pin.
	4. Remove oil from the disc with thinner etc., or replace clutch leather disc.

Rotation of the arm is not smooth

Cause	Remedy
1. The V-belt has been stretched and slips.	1. Adjust by loosening the v-belt tension adjusting screw at the motor base. Remember to fasten nuts after adjustment.
2. The clutch leather disc slips due to oil contamination.	2. Remove oil from the disc with thinner, or replace leather disc.
3. Lack of pressure on the clutch member (E14) due to fatigue or failure of the clutch spring (E15, E16).	3. Disassemble and replace pin.
4. Lack of pressure due to breaking down of the taper pin for the clutch shaft collar (E01 [x2]).	4. Replace the taper pin.
5. Loosening of the screw of the motor pulley.	5. Tighten the screw.
6. The cushion of the brake is too heavy.	6. Adjust the cushion by loosening the nuts of the brake cushion adjuster (S19, S20, S21).

Twine pulls away from the string holder button at the beginning of cycle.

Cause	Remedy
1. Too much tension on the booster dial.	1. Loosen the tension booster dial (R19).
2. The cushion of the string holder button spring (C17) is too small.	2. Tighten the cushion by turning the string holder button adjusting screw (C16).
3. Twine threading is incorrect.	3. Adjust to the proper order.
4. The twine is improperly threaded.	4. Check for and remove knot or tangle.
5. Abrasion of the string holding part of the string holder.	5. Repair or replace the part.
6. Not using the twine specified for the setup.	6. Used specified twine.

The thrust and pushed twine is not caught by the knotter.

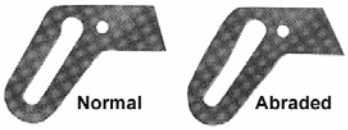
Cause	Remedy
1. Due to the abrasion of the round part at the end of the draw slide (A03).	1. Replace the draw slide (A03).
2. The insufficient draw slide due to the abrasion of the draw slide cam (D15).	2. Replace the draw slide cam (D15).
3. The knotter does not reach the catching position due to the ‘abrasion’ of the switch cam (D14).	3. Replace the switch cam (D14).
4. Breaking down of the draw slide roller (A01).	4. Replace the draw slide roller (A01).

The twine does not enter the ‘string holder’ button.

Cause	Remedy
1. When an article of abnormal shape is tied.	1. Tie without placing the article on the right side of the standard at knotter.
2. Breaking down of the draw slide spring (A02).	2. Replace the draw slide spring (A02).
3. Loosening of the twine tension adjusting spring (R19).	3. Turn the dial of the tension booster (R19) and increase the tension.

The twine is not cut.

Cause	Remedy
1. The knife trap (C08) is not fixed.	1. Recheck the knife trap lever pin (C05).
2. The knife trap spring is not enough.	2. Replace the knife trap spring (C09).
3. The abrasion of the guide hole of the knife trap lever (C07).	3. Replace the knife trap lever (C07).
4. Breaking down of the knife trap adjusting screw.	4. Replace the knife trap adjusting screw.
5. Loosening of the knife trap lever pin.	5. Fasten the knife trap lever guide pin with a screw driver.

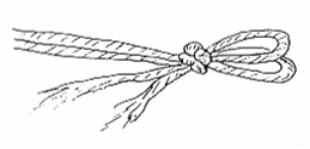


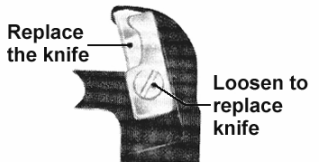
The twine breaks down.

Cause	Remedy
1. The pressure of the 'string holder' button is too high.	1. Loosen the string holder button adjusting screw (C16).
2. The twine is caught on the way out.	2. Inspect the twine path and improve the run.
3. The twine setting is incorrect.	3. Adjust correctly.
4. Too heavy fastening of the twine tension spring (R19).	4. Turn the dial (R19) to decrease the tension.
5. Defect/burr at the end of the draw slide (A03).	5. Polish the part with fine emery paper.

The twine tails are not in sharp shape.

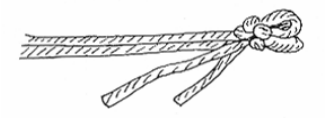
Cause	Remedy
1. Dull knife.	1. Replace knife (C03).



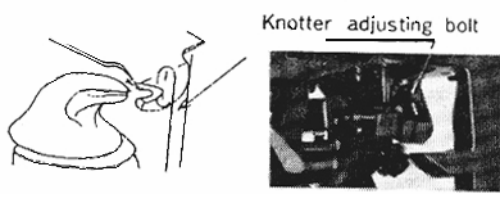


Abnormal knot shape—loops are small and knot is loose.

Cause



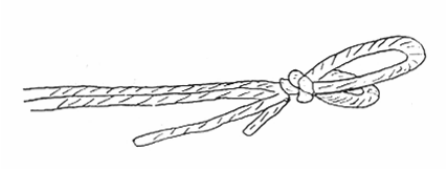
Remedy



1. Due to the abrasion of the stripper, clearance has been created between the stripper and the knotter.	1. Replace the stripper (A17).
2. The vertical alignment between the knotter and the stripper is incorrect.	2. Adjust the alignment with stripper arm (B6 x 20) adjusting bolt. [see stripper adjustment illustration]
3. When knotter releases the twine too early.	3. Adjust the pull of the loop with the knotter adjusting bolt. Above view from open front cover door.
4. When clearance is created between the knotter lever (B18) and the knotter roller (B04).	4. Replace the abraded part.
5. When other twine than that specified is used. (often thicker twine)	5. Use specified twine.

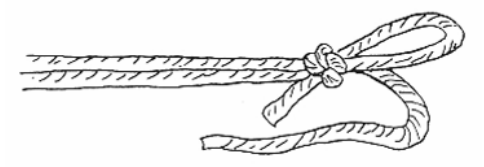
The two loops are not the same.

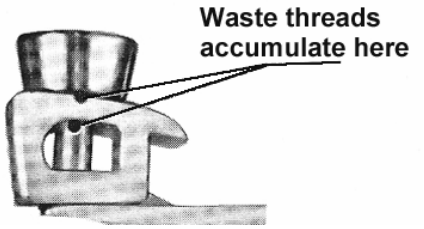
Cause	Remedy
1. When other twine than specified is used.	1. Use the specified twine.
2. The pressure of the string holder button is too high.	2. Adjust the spring with the string holder button adjuster (C16).
3. The vertical alignment between the knotter and the stripper is incorrect.	3. Adjust the alignment with the stripper arm (B6 x 20) adjusting bolt. [see stripper adjustment illustration]
4. The knotter flat spring is too weak.	4. Replace the knotter flat spring (B09).
5. Dust or debris between the upper and lower knotters.	5. Clean and remove dust or debris.
6. The knife is dull.	6. Replace knife (C03).



Only one loop is produced.

Cause	Remedy
1. Tension booster spring adjustment too high.	1. Decrease tension booster setting (R19).
2. String holder button spring is too weak.	2. Tighten string holder button adjusting screw (C16). [see string holder assembly]
3. Waste threads have accumulated on the string holder button.	3. Remove waste threads with supplied tweezer.
4. Abrasion of the holding part of the string holder.	4. Replace worn part.





The loop heads are frayed.

Cause	Remedy
1. The stripper and bottom of the lower knotter misaligned.	1. Adjust the stripper to match with the knotter groover. [see stripper adjustment]
2. Excess clearance between upper and lower knotters.	2. Replace the knotter.
3. When other than specified twine is used.	3. Use specified twine.

Threads at the neck of the knot are frayed.

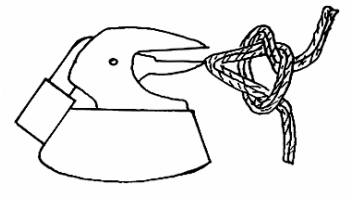
Cause	Remedy
1. Burrs on the knotter	1. Deburr with emery cloth.
2. String holder button spring tension set too high.	2. Loosen string holder button adjustment screw (C16).

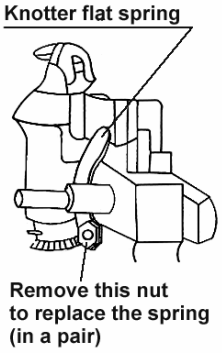
Threads at the neck of the knot are frayed.

Cause	Remedy
1. Burrs on the knotter	1. Deburr with emery cloth.
2. String holder button spring tension set too high.	2. Loosen string holder button adjustment screw (C16).

Twine is not knotted though picked up.

Cause	Remedy
1. Fatigue or breaking down of the knotter flat spring.	1. Replace the knotter flat spring (B09).
2. The stripper does not go down smoothly.	2. Replace the stripper coil spring (A20).
3. Clearance is created between the knotter roller and the knotter lever.	3. Replace the abraded part





Twines are not released though they are picked up and knotted.

Cause	Remedy
1. The knotter does not release the twine when tying is finished.	1. Adjust the pull of the loop with the knotter adjusting bolt. [turn in]

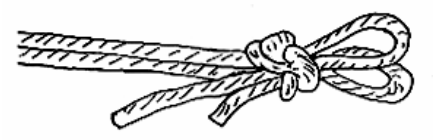
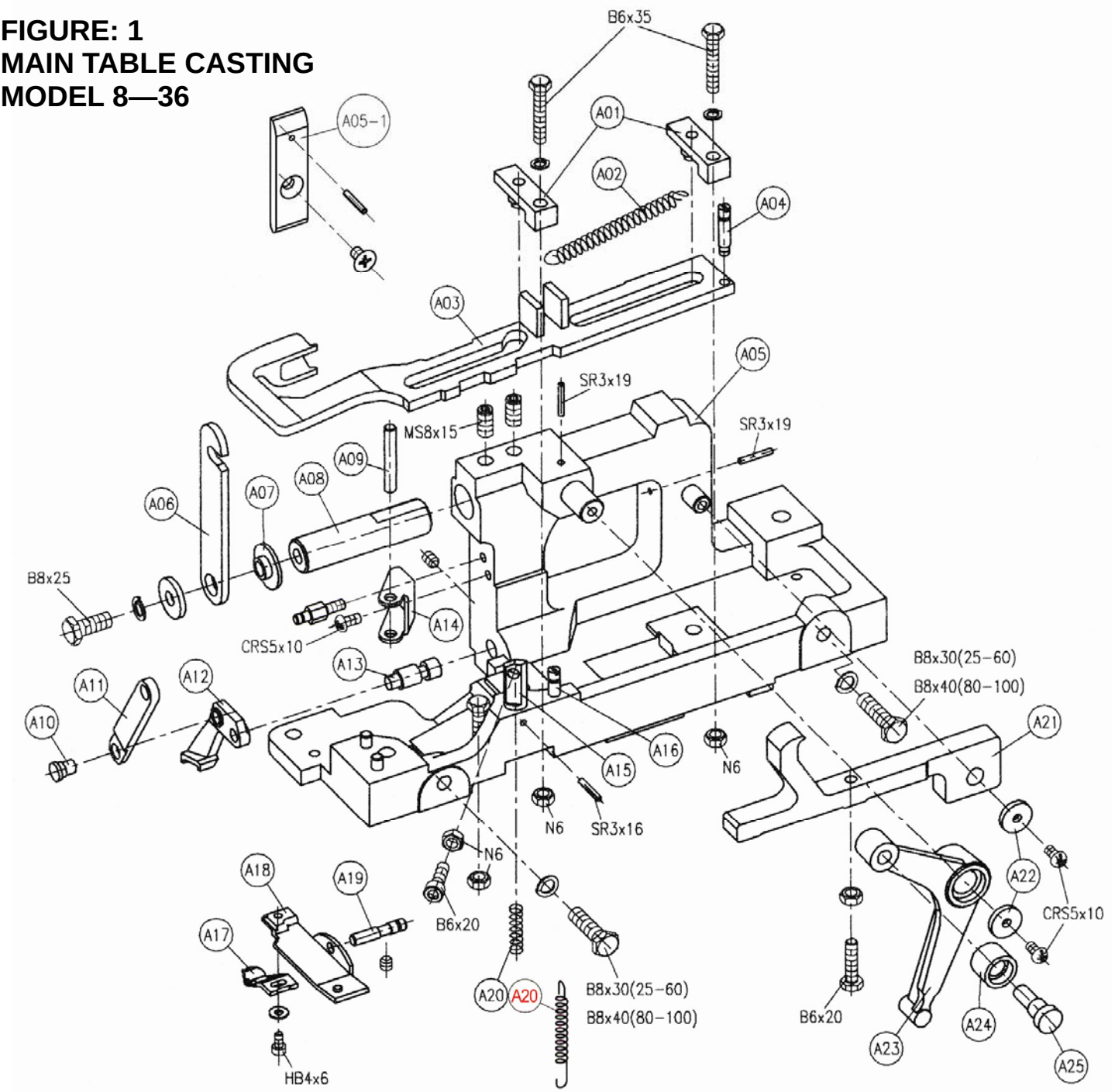
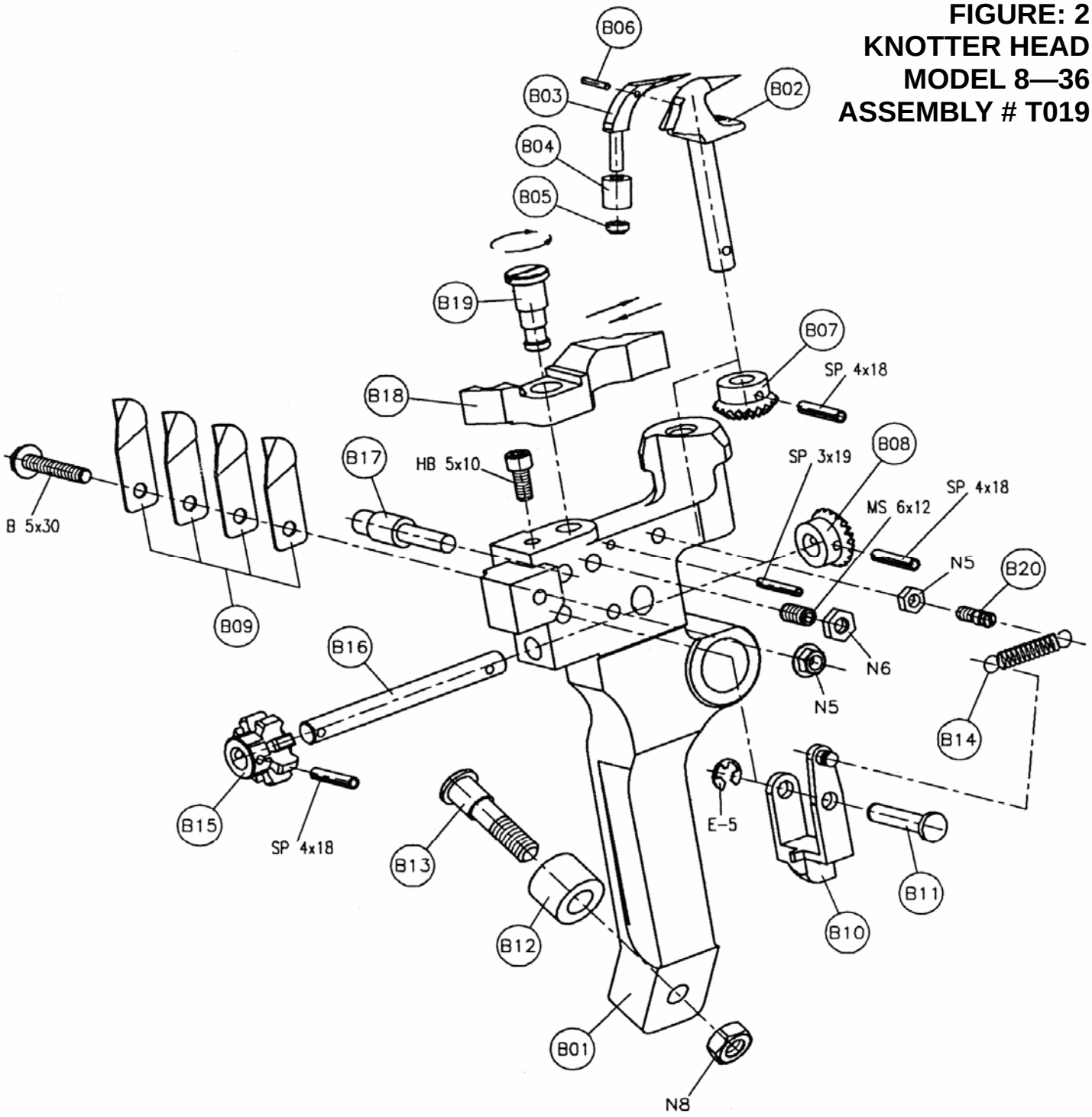


FIGURE: 1
MAIN TABLE CASTING
MODEL 8—36



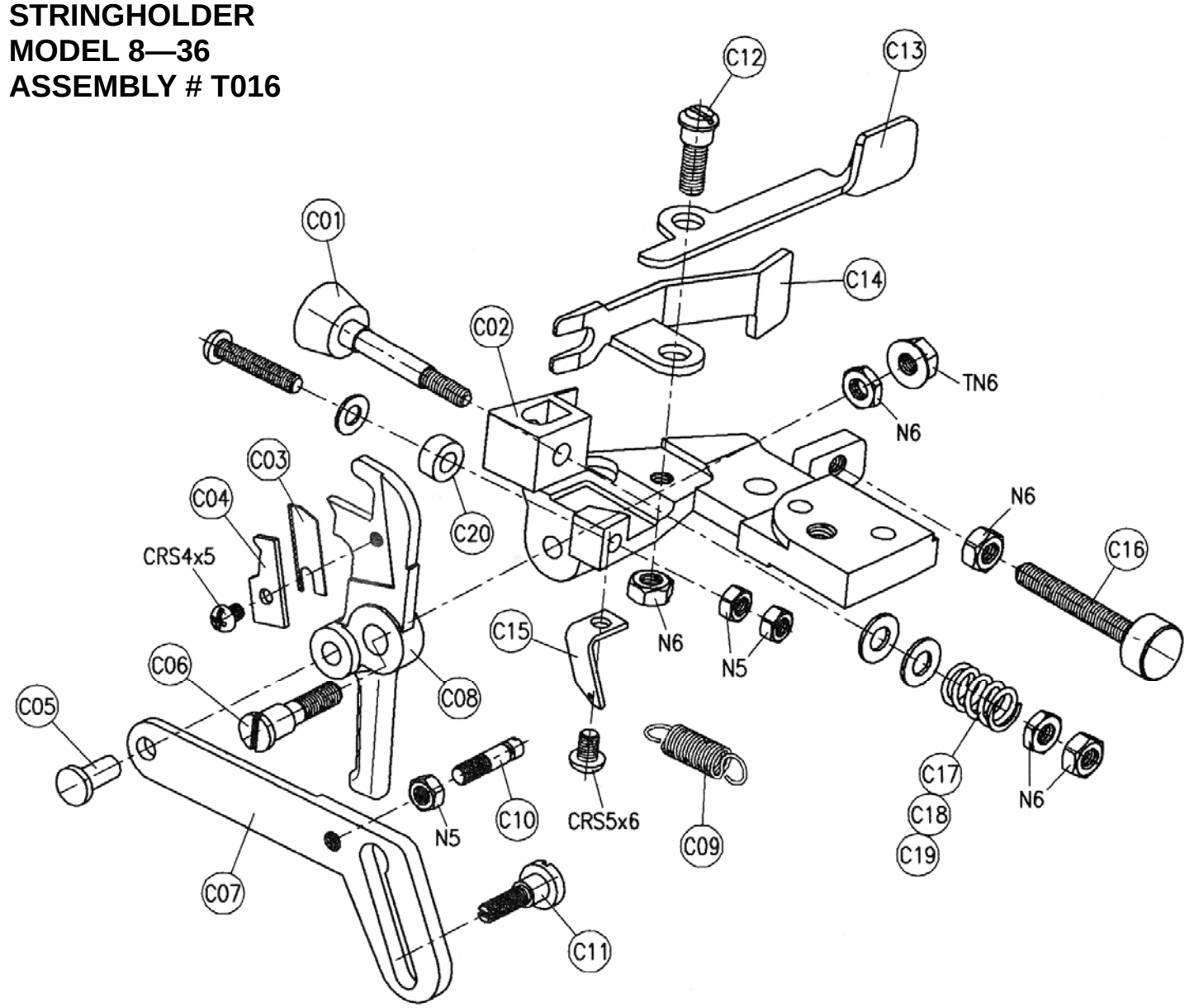
Assy #	Part #	Description	Qty	Assy #	Part #	Description	Qty
T001	A01	Draw Slide Cap Assembly	2		A14	Lift Pin Guide	1
	A02	Draw Side Spring	1		A15	Knotter Release Post	1
	A03	Draw Side	1		A16	Spring Stud	1
	A04	Draw Side Spring Stud	1		A17	Stripper	1
	A05	Main Table Casting	1		A18	Stripper	1
	A06	Knotter Head Supporter	1		A19	Stripper Screw	1
	A07	Knotter Head Pivot Washer	1		A20	Stripper Coil Spring	1
	A08	Knotter Head Pivot	1		A20	Stripper Coil Spring (after Ser#241056)	1
	A09	Lift Pin	1		A21	Lift Lever	1
T002 Tip Up	A10	Tip Up Lever Pin (A)	1		A22	Draw Slide Lever Washer	2
	A11	Tip Up Lever	1	T003 Draw Slide Lever	A23	Draw Slide Lever	1
	A12	Tip Up Nail	1		A24	Draw Slide Lever Roller	1
	A13	Tip Up Nail Shaft	1		A25	Draw Slide Lever Roller Pin	1

FIGURE: 2
KNOTTER HEAD
MODEL 8—36
ASSEMBLY # T019



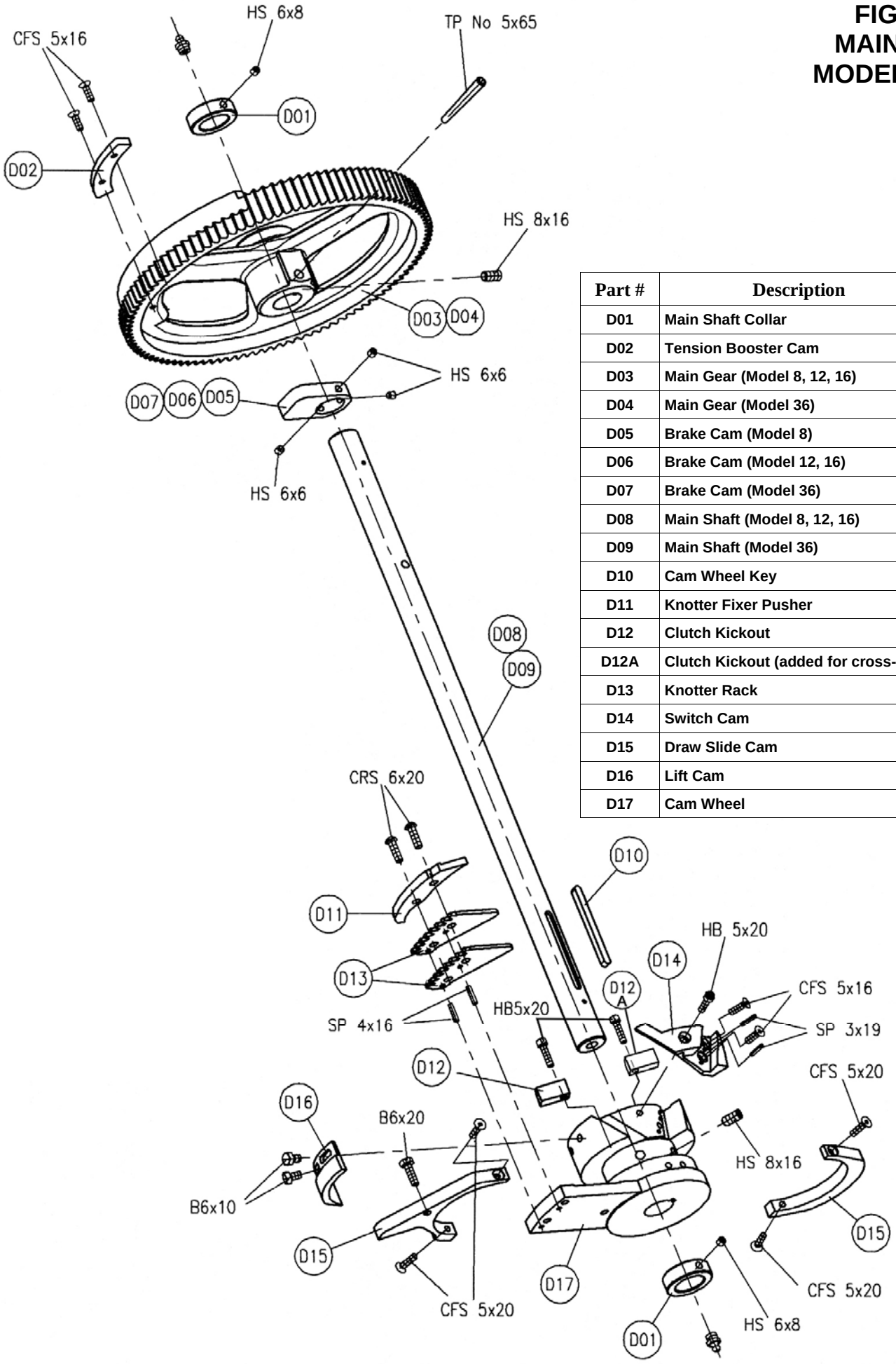
Assy #	Part #	Description	Qty	Assy #	Part #	Description	Qty
T006	B01	Knotter Head	1	T004	B02	Knotter (Upper)	1
	B12	Knotter Head Roller	1		B03	Knotter (Lower)	1
	B13	Knotter Head Roller Pin	1		B04	Knotter Roller	1
	B17	Tip Up Lever Stud	1		B05	Knotter Washer	1
	B18	Knotter Lever	1		B07	Knotter Miter Gear (Knotter Side)	1
	B19	Knotter Lever Screw	1		B09	Knotter Flat Spring	4
T005	B08	Knotter Miter Gear (Pinion Side)	1		B10	Knotter Fixer	1
	B15	Pinion (Star Wheel)	1		B11	Knotter Fixer Pin	1
	B16	Pinion Shaft	1		B14	Pinion Gear Fix Spring	1
	B06	Knotter Lower Pin	1		B20	Spring Stud	1

FIGURE: 3
STRINGHOLDER
MODEL 8—36
ASSEMBLY # T016



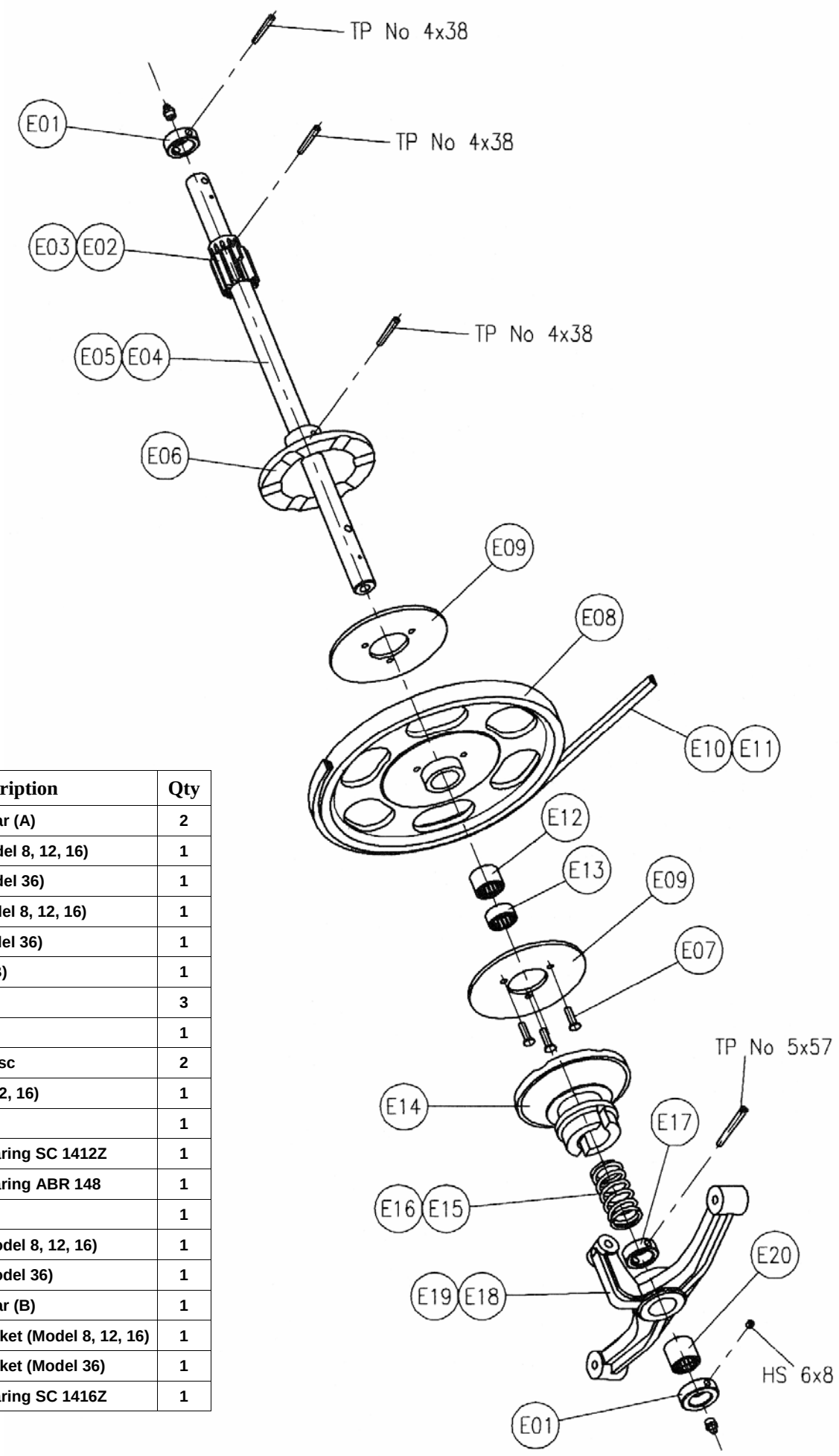
Assy #	Part #	Description	Qty	Assy #	Part #	Description	Qty
	C01	String holder Button	1		C11	Knife Trap Guide Pin	1
	C02	String holder	1		C12	String holder Release Lever Pivot Screw	1
	C03	Knife	1		C13	String holder Button Release Lever	1
T007	C04	Knife Holder	1		C14	String holder Button Adjusting Screw	1
	C05	Knife Trap Lever Pin	1		C15	Spring Stud	1
	C07	Knife Trap Lever	1		C16	String holder Adjusting Screw	1
	C08	Knife Trap	1		C17	String holder Button Spring (1.4 mm)	1
	C10	Knife Trap Spring Stud	1		C18	String holder Button Spring (1.6 mm)	1
	C06	Knife Pivot Screw	1		C19	String holder Button Spring (1.8 mm)	1
	C09	Knife Trap Spring	1		C20	Urethane Pu Tube Rod	1
			90200025		Knife Trap Extension Handle (not shown)		1

FIGURE: 4
MAIN GEAR
MODEL 8—36



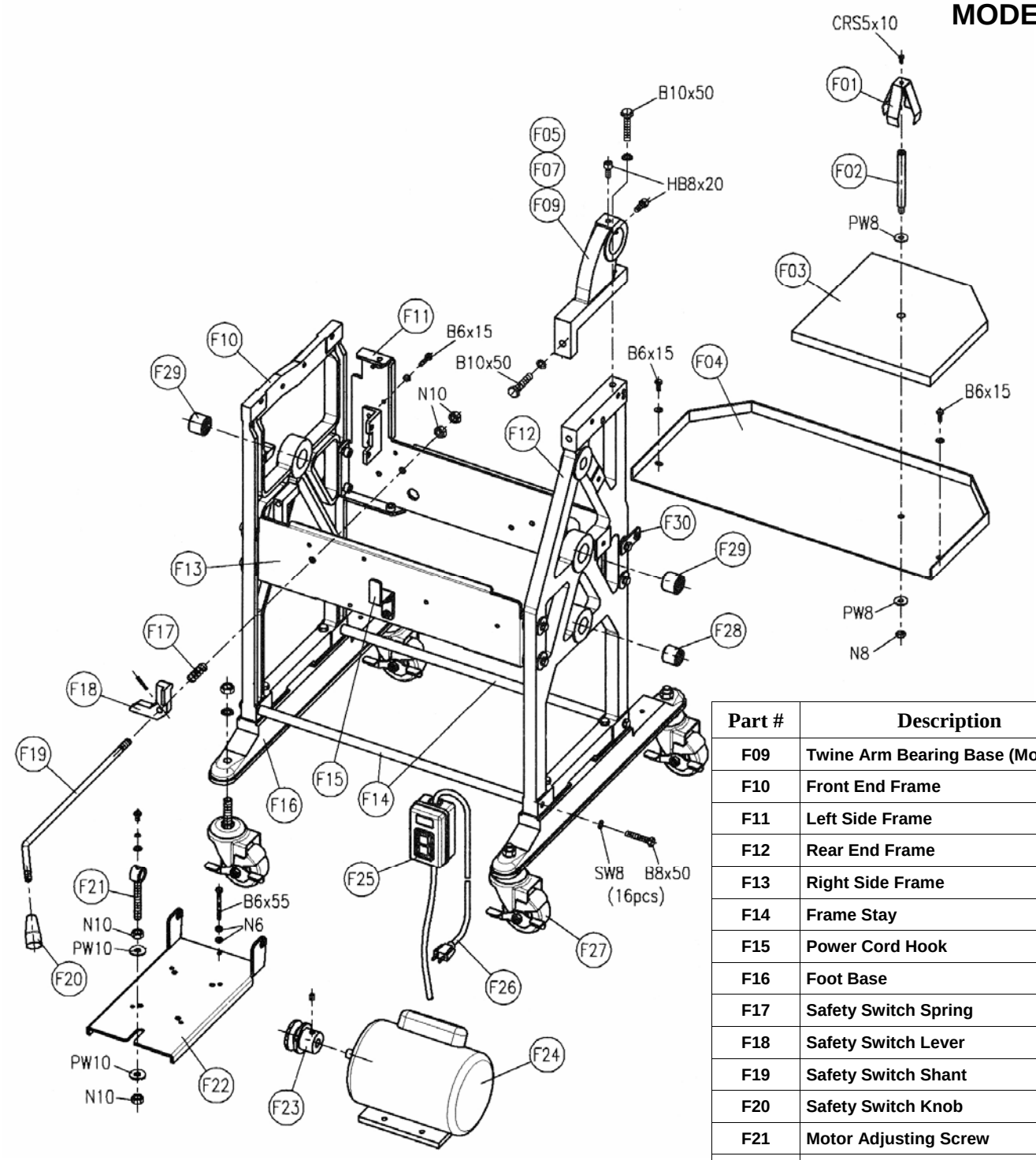
Part #	Description	Qty
D01	Main Shaft Collar	2
D02	Tension Booster Cam	1
D03	Main Gear (Model 8, 12, 16)	1
D04	Main Gear (Model 36)	1
D05	Brake Cam (Model 8)	1
D06	Brake Cam (Model 12, 16)	1
D07	Brake Cam (Model 36)	1
D08	Main Shaft (Model 8, 12, 16)	1
D09	Main Shaft (Model 36)	1
D10	Cam Wheel Key	1
D11	Knotter Fixer Pusher	1
D12	Clutch Kickout	1
D12A	Clutch Kickout (added for cross-tie)	1
D13	Knotter Rack	2
D14	Switch Cam	1
D15	Draw Slide Cam	1
D16	Lift Cam	1
D17	Cam Wheel	1

FIGURE: 5
CLUTCH SHAFT
MODEL 8—36



Part #	Description	Qty
E01	Clutch Shaft Collar (A)	2
E02	Driving Gear (Model 8, 12, 16)	1
E03	Driving Gear (Model 36)	1
E04	Clutch Shaft (Model 8, 12, 16)	1
E05	Clutch Shaft (Model 36)	1
E06	Clutch Member (B)	1
E07	Rivet	3
E08	Clutch Pulley	1
E09	Clutch Leather Disc	2
E10	V-Belt (Model 8, 12, 16)	1
E11	V-Belt (Model 36)	1
E12	Needle Roller Bearing SC 1412Z	1
E13	Needle Roller Bearing ABR 148	1
E14	Clutch Member	1
E15	Clutch Spring (Model 8, 12, 16)	1
E16	Clutch Spring (Model 36)	1
E17	Clutch Shaft Collar (B)	1
E18	Clutch Shaft Bracket (Model 8, 12, 16)	1
E19	Clutch Shaft Bracket (Model 36)	1
E20	Needle Roller Bearing SC 1416Z	1

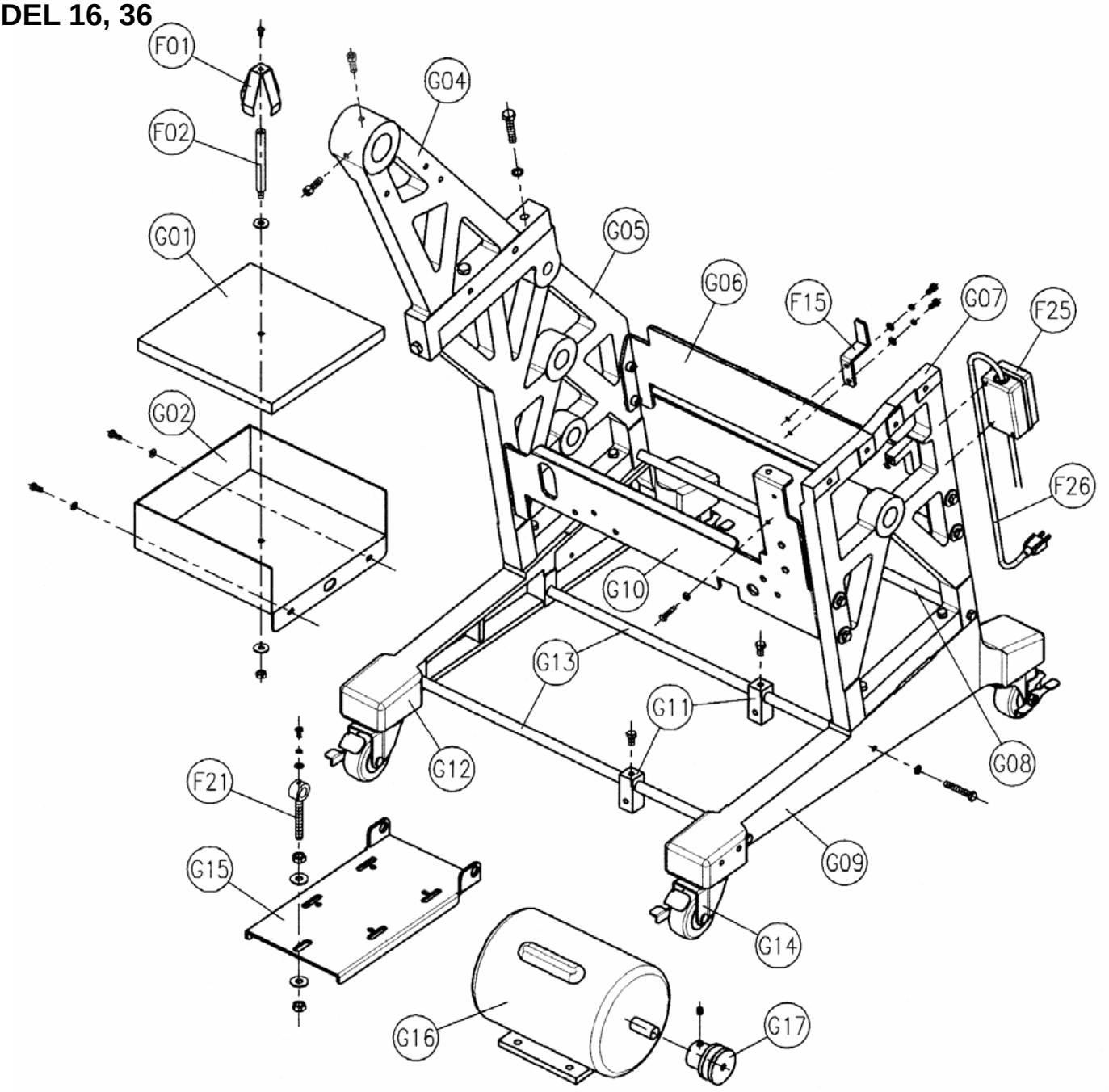
FIGURE: 6
FRAME, MOTOR & TWINE CAN
MODEL 8, 12



Part #	Description	Qty
F01	Twine Bobbin Holder Spring	2
F02	Twine Bobbin Shaft	1
F03	Bobbin Base	1
F04	Twine Can	1
F05	Twine Arm Bearing Base (Model 8)	1
F07	Twine Arm Bearing Base (Model 12)	1

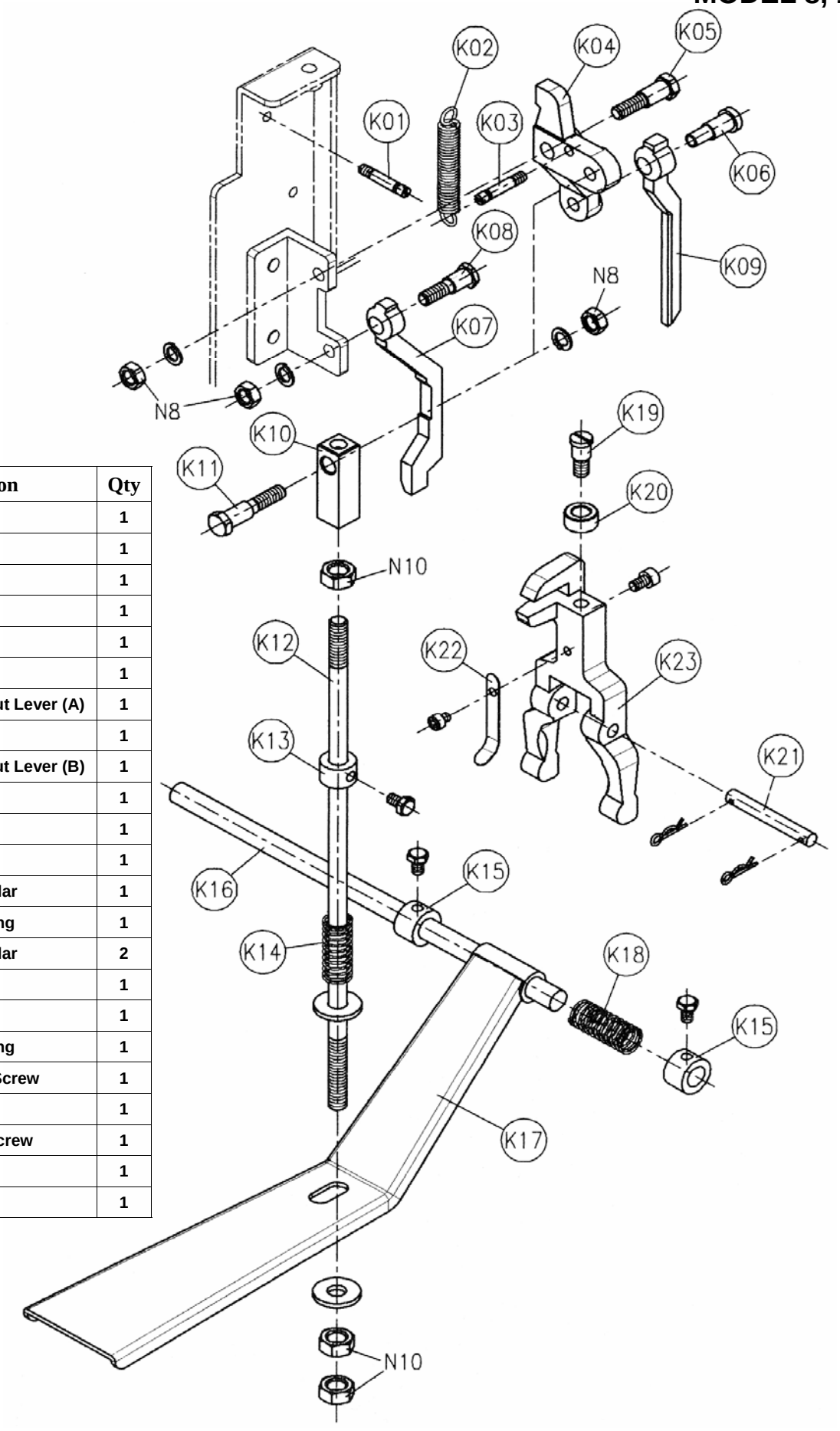
Part #	Description	Qty
F09	Twine Arm Bearing Base (Model 16)	1
F10	Front End Frame	1
F11	Left Side Frame	1
F12	Rear End Frame	1
F13	Right Side Frame	1
F14	Frame Stay	2
F15	Power Cord Hook	1
F16	Foot Base	1
F17	Safety Switch Spring	1
F18	Safety Switch Lever	1
F19	Safety Switch Shant	1
F20	Safety Switch Knob	1
F21	Motor Adjusting Screw	1
F22	Motor Base	1
F23	Motor Pulley	1
F24	Motor	1
F25	Switch (T-24-39)	1
F26	Power Cord	1
F27	Castor	4
F28	Needle Roller Bearing SC 1416Z	1
F29	Needle Roller Bearing SC 1616Z	2
F30	Twine Guide	1

FIGURE: 7
FRAME, MOTOR & TWINE CAN
MODEL 16, 36



Part #	Description	Qty	Part #	Description	Qty
F01	Twine Bobbin Holder Spring	2	G07	Front End Frame	1
F02	Twine Bobbin Shaft	1	G08	Frame Stay	1
F15	Power Cord Hook	1	G09	Foor Base (Front Side)	1
F21	Motor Adjusting Screw	1	G10	Left Side Frame	1
F25	Switch (T-24-39)	1	G11	Pedal Joint Bracket	2
F26	Power Cord	1	G12	Foot Base (Rear Side)	1
G01	Bobbin Base	1	G13	Frame Stay	2
G02	Twine Can	1	G14	Castor	4
G04	Twine Arm Bearing Base	1	G15	Motor Base	1
G05	Rear End Frame	1	G16	Motor	1
G06	Right Side Frame	1	G17	Motor Pulley	1

FIGURE: 9
KICKOUT LEVER
MODEL 8, 12



Part #	Description	Qty
K01	Trip Spring Stud	1
K02	Trip Spring	1
K03	Spring Stud	1
K04	Trip Bell Crank	1
K05	Pivot Screw	1
K06	Kickout Lever Pin	1
K07	Clutch Block Kickout Lever (A)	1
K08	Trip Rod Screw	1
K09	Clutch Block Kickout Lever (B)	1
K10	Clutch Lever Joint	1
K11	Pivot Screw	1
K12	Pedal Rod	1
K13	Cushion Spring Collar	1
K14	Pedal Cushion Spring	1
K15	Cushion Spring Collar	2
K16	Frame Stay	1
K17	Pedal	1
K18	Pedal Cushion Spring	1
K19	Clutch Fork Roller Screw	1
K20	Clutch Fork Roller	1
K21	Clutch Fork Pivot Screw	1
K22	Clutch Fork Spring	1
K23	Clutch Fork	1

FIGURE: 8
TWINE ARM
MODEL 8—36

Assy #	Part #	Description	Qty
T013	H01	Guide Roller Pin	4
	H02	Guide Roller	4
	H03	Ring	1
	H04	Twine Arm Shaft Collar	1
	H05	Twine Arm Bearing Shaft	1
	H06	Twine Arm Bearing Shaft (36)	1
T014	H07	Needle Roller Bearing CFC1616Z	4
	H40	Nut	1
	H41	Sprocket Cam	1
	H42	Spur Gear	1
	H43	Sprocket—3 Wrap (8, 12, 16)	1
	H08	Twine Arm Shaft (8, 12, 16)	1
	H09	Twine Arm Shaft (36)	1
T015	H10	Offset Link P=1/2”	1
	H12	Roller Chain P=1/2”	1
	H11	Offset Link P=5/8”	1
	H13	Roller Chain P=5/8”	1
	H14	Twine Arm Sprocket (8, 12, 16)	1
	H15	Twine Arm Sprocket (36)	1
	H16	Loose Table Pin	1
	H17	Ball Bearing 6907 ZZ	2
	H18	Bearing O-Ring	1

Assy#	Part#	Description	Qty
	H19	Bearing Washer	1
	H20	Twine Guide Roller Bracket	1
	H21	Twine Arm (8)	1
	H23	Twine Arm (12)	1
	H25	Twine Arm (16)	1
	H27	Twine Arm (36)	1
	H28	Twine Guide	1
	H29	Twine Guide Nut	1
	H30	Pivot Screw Collar	1
T020	H31	Tension Sprocket Base (8, 12, 16)	1
	H34	Tension Sprocket Pin (8, 12, 16)	1
	H36	Tension Sprocket (8, 12, 16)	1
	H32	Tension Sprocket Base (36)	1
	H33	Tension Sprocket Base Pivot Screw	1
	H35	Tension Sprocket Pin (36)	1
	H37	Tension Sprocket (36)	1
	H38	Gear Washer	1
	H39	Tension Adjust Support	1
	H44	Sprocket—3 Wrap (36)	1
	H45	Gear Shaft (8, 12, 16)	1
	H46	Gear Shaft (36)	1

FIGURE: 8
TWINE ARM
MODEL 8—36

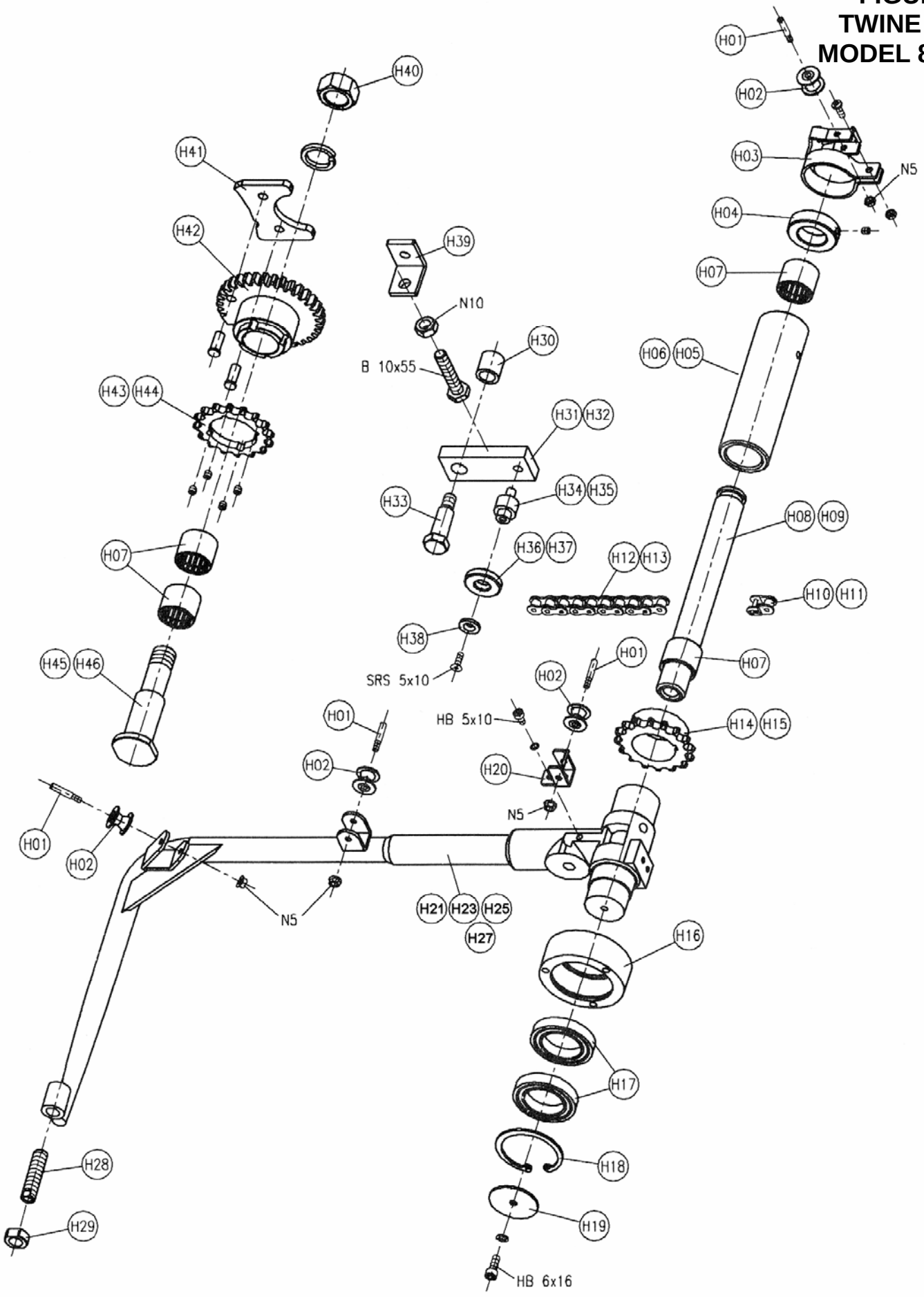


FIGURE: 10
KICKOUT LEVER
MODEL 16, 36

Part #	Description	Qty
L01	Pedal Rod	1
L02	Pedal Pivot Screw	2
L03	Pedal	1
L04	Spring Keeper	1
L05	Spring	1
L06	Clutch Fork	1
K01	Trip Spring Stud	1
K02	Trip Spring	1
K03	Spring Stud	1
K04	Trip Bell Crank	1
K05	Pivot Screw	1
K06	Kickout Lever Pin	1
K07	Clutch Block Kickout Lever (A)	1
K08	Trip Rod Screw	1
K09	Clutch Block Kickout Lever (B)	1
K10	Clutch Lever Joint	1
K11	Pivot Screw	1
K13	Cushion Spring Collar	1
K14	Pedal Cushion Spring	1
K19	Clutch Fork Roller Screw	1
K20	Clutch Fork Roller	1
K21	Clutch Fork Pivot Screw	1
K22	Clutch Fork Spring	1

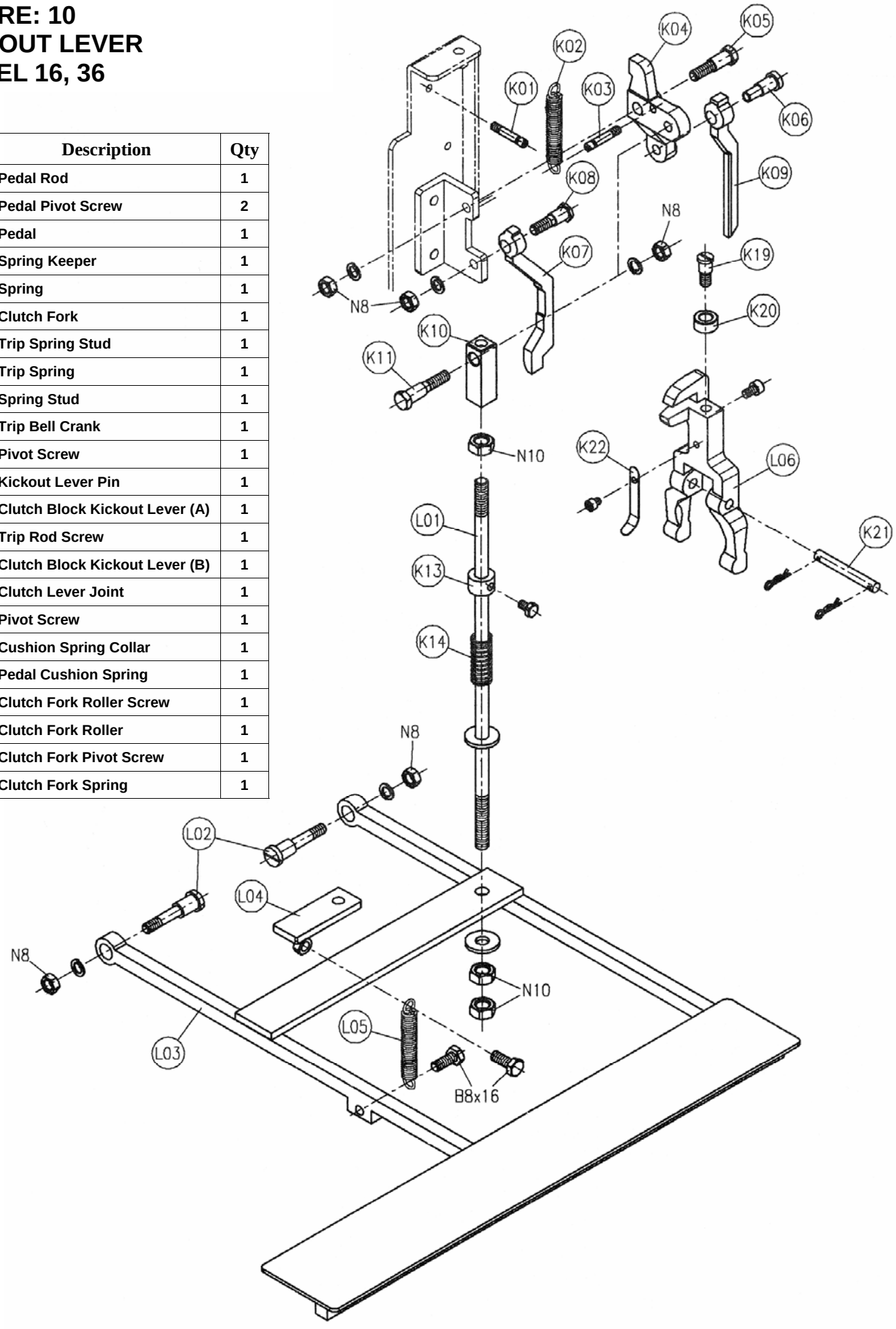
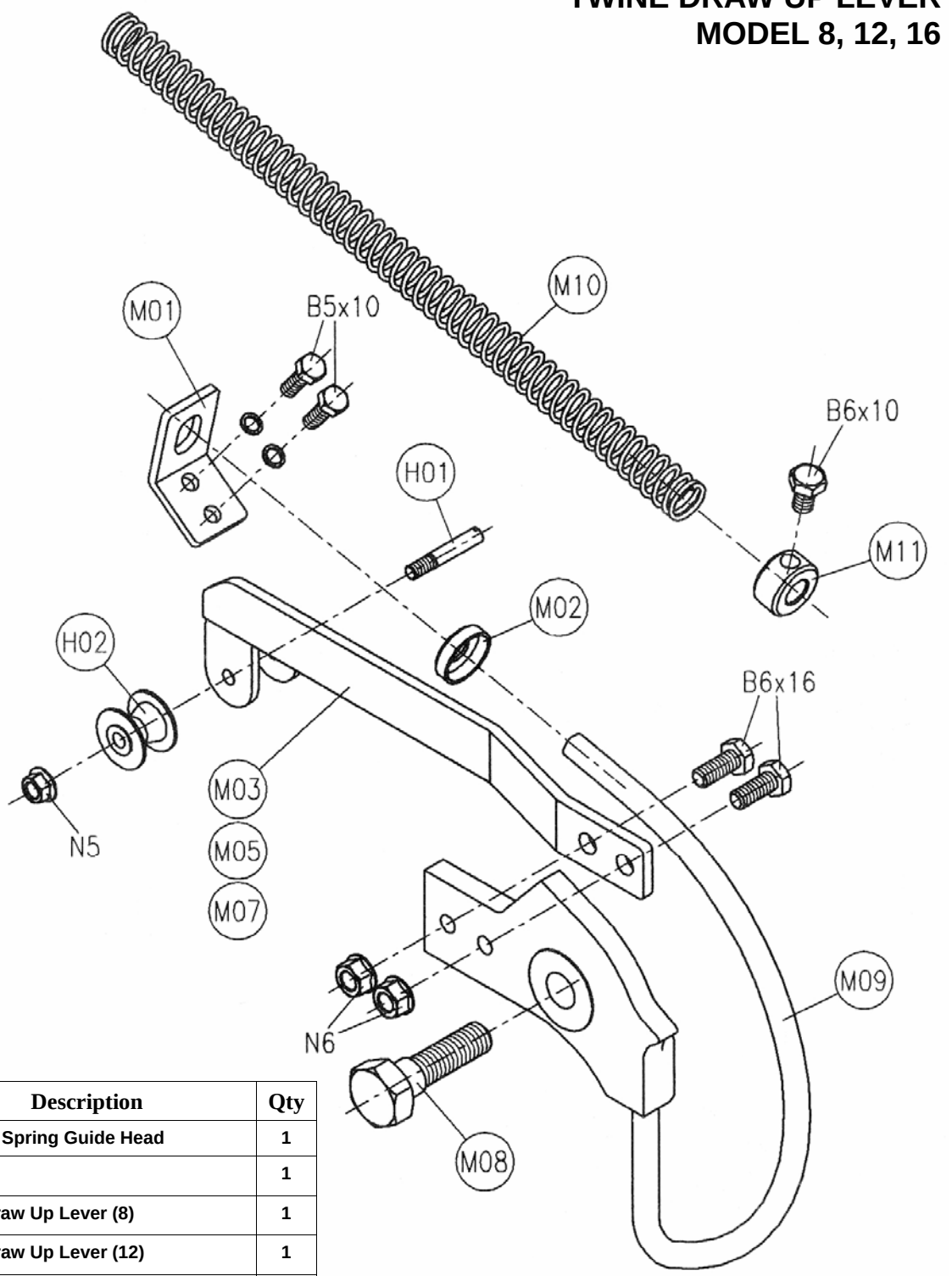
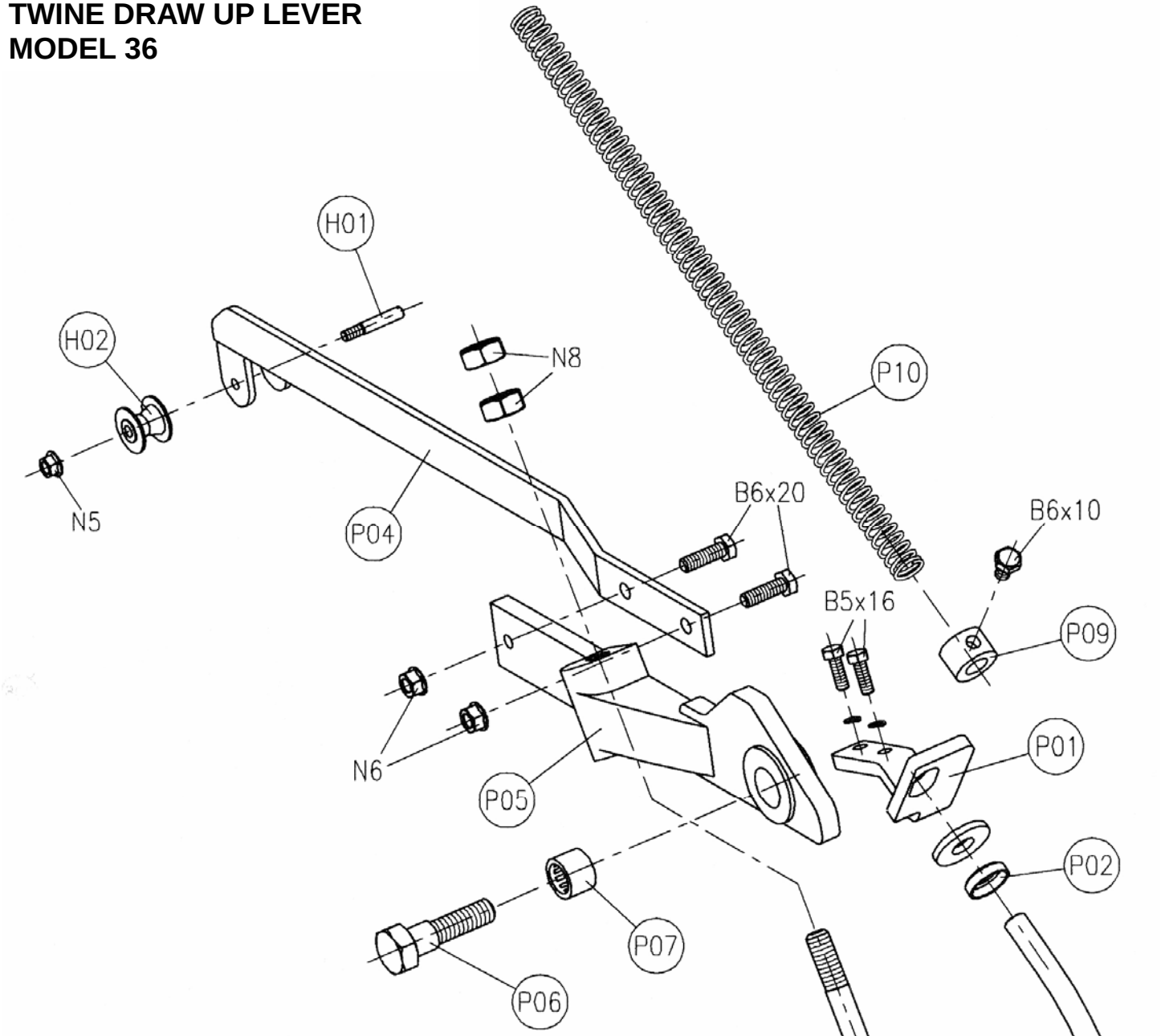


FIGURE: 11
TWINE DRAW UP LEVER
MODEL 8, 12, 16



Assy #	Part #	Description	Qty
	M01	Cushion Spring Guide Head	1
	M02	Collar	1
	M03	Twine Draw Up Lever (8)	1
	M05	Twine Draw Up Lever (12)	1
	M07	Twine Draw Up Lever (16)	1
	M08	Twine Draw Up Lever Pin	1
	M09	Cushion Spring Guide	1
	M10	Cushion Spring	1
	M11	Collar	1
	H01	Guide Roller Pin	1
	H02	Guide Roller	1

FIGURE: 12
TWINE DRAW UP LEVER
MODEL 36



Assy #	Part #	Description	Qty
T010	P01	Cushion Spring Guide Head	1
	P04	Twine Draw Up Lever	1
	P05	Cushion Spring Head	1
	P08	Cushion Spring Guide	1
	H01	Guide Roller Pin	1
	H02	Guide Roller	1
	P02	Collar	1
	P06	Twine Draw Up Lever Pin	1
	P07	Needle Roller Bearing BA88	1
	P09	Collar	1
	P10	Cushion Spring	1

FIGURE: 13
TENSION BOOSTER
MODEL 8—36

Part #	Description	Qty
R01	Cam Roller Pin	1
R02	Cam Roller	1
R03	Cam Roller Arm (8, 12, 16)	1
R04	Cam Roller Arm (36)	1
R05	Bolt	1
R06	Pin	1
R07	Twine Tension Spring Base	1
R08	Twine Tension Spring	1
R09	Twine Tension Plate	1
R10	Spring (2)	1
R11	Shaft	1
R12	Lock Spring	1
R13	Lock Nut	1
R14	Twine Tension Cam	1
R15	Spring (1)	1
R16	Twine Tension Box	1
R17	Twine Guide	1
R18	Dial Axle Bolt	1
R19	Dial	1
R20	Index Plate	1

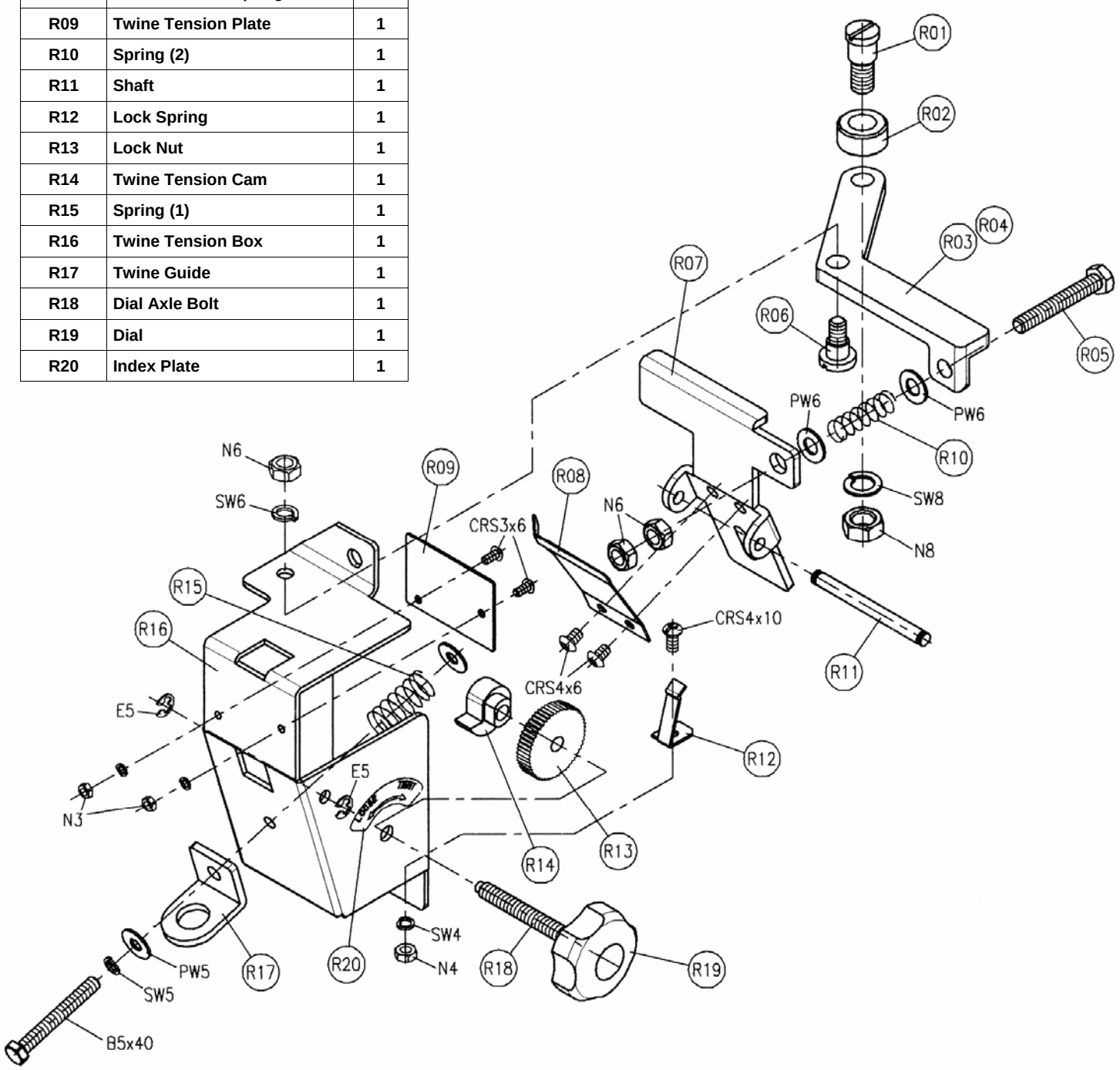


FIGURE: 14
BRAKE
MODEL 8—36

Part #	Description	Qty
S01	Brake Leather Band (8, 12, 16)	1
S02	Brake Leather Band (36)	1
S03	Brake Band Tension	1
S04	Brake Holder (8, 12, 16)	1
S05	Brake Holder (36)	1
S06	Brake Base	1
S07	Brake Bracket	1
S08	Brake Pivot Rod Collar (8, 12, 16)	1
S09	Brake Pivot Rod Collar (36)	1
S10	Brake Arm (8)	1
S11	Brake Arm (12, 16)	1
S12	Brake Arm (36)	1
S13	Brake Arm Roller	1
S14	Brake Arm Roller Pin	1
S15	Brake Pivot Rod (8, 12, 16)	1
S16	Brake Pivot Rod (36)	1
S17	Twine Guide	1
S18	Brake Joint Bracket	1
S19	Brake Cushion Adjuster (8, 16)	1
S20	Brake Cushion Adjuster (12)	1
S21	Brake Cushion Adjuster (36)	1
S22	Brake Cushion Spring	1
S23	Brake Arm Joint (8, 12, 16)	1
S24	Brake Arm Joint (36)	1
S25	Collar	2

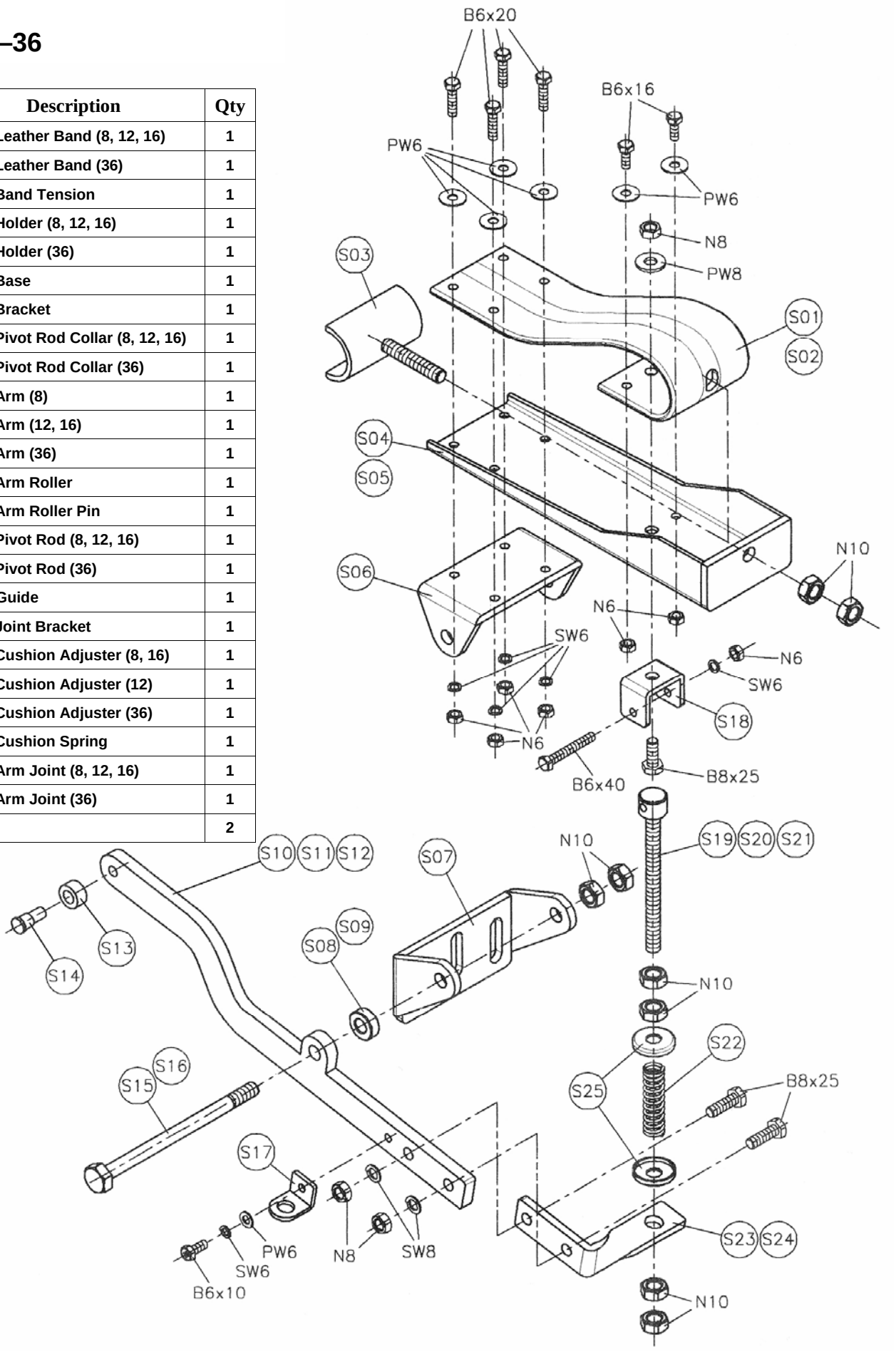
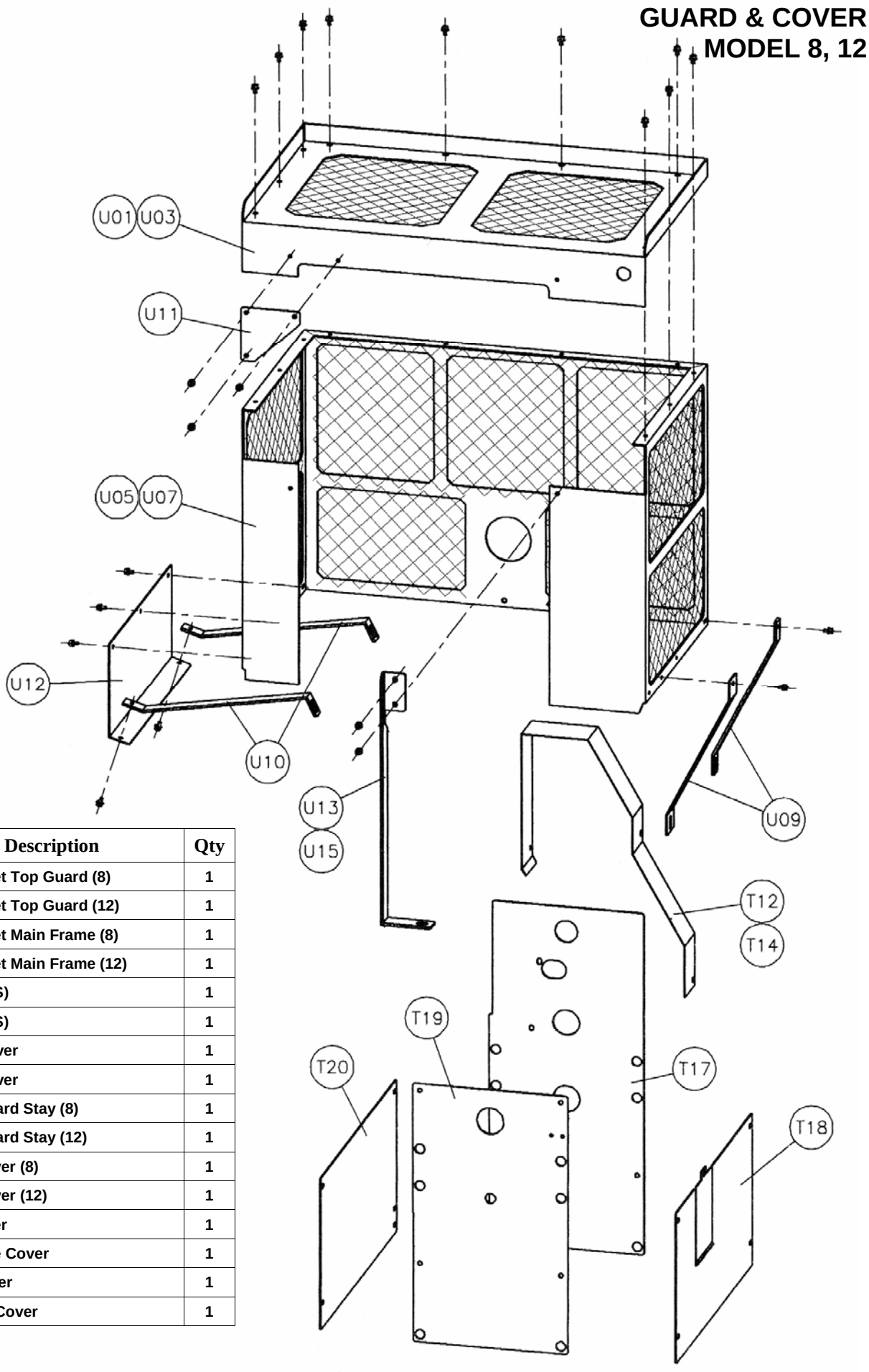
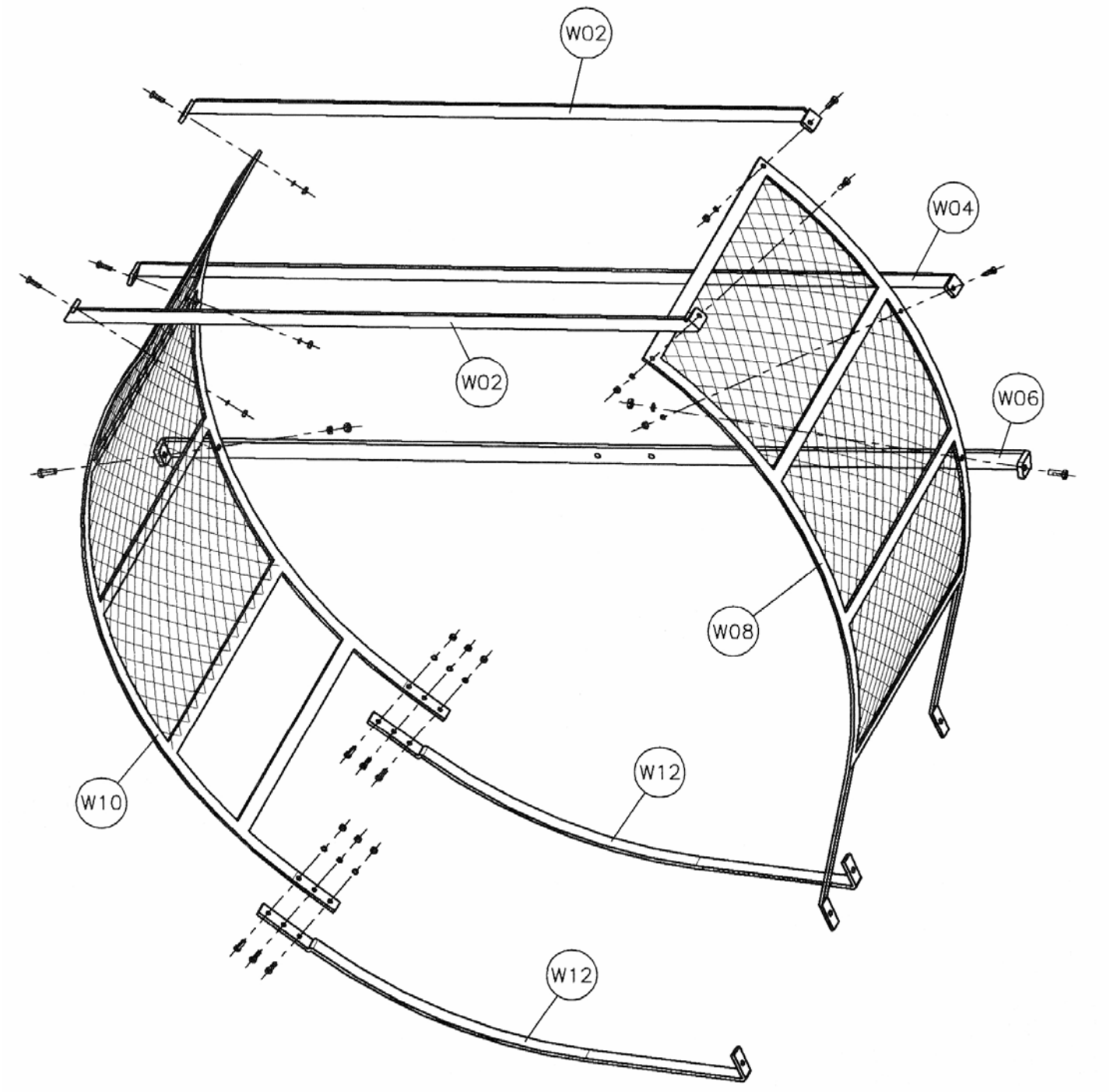


FIGURE: 16
GUARD & COVER
MODEL 8, 12



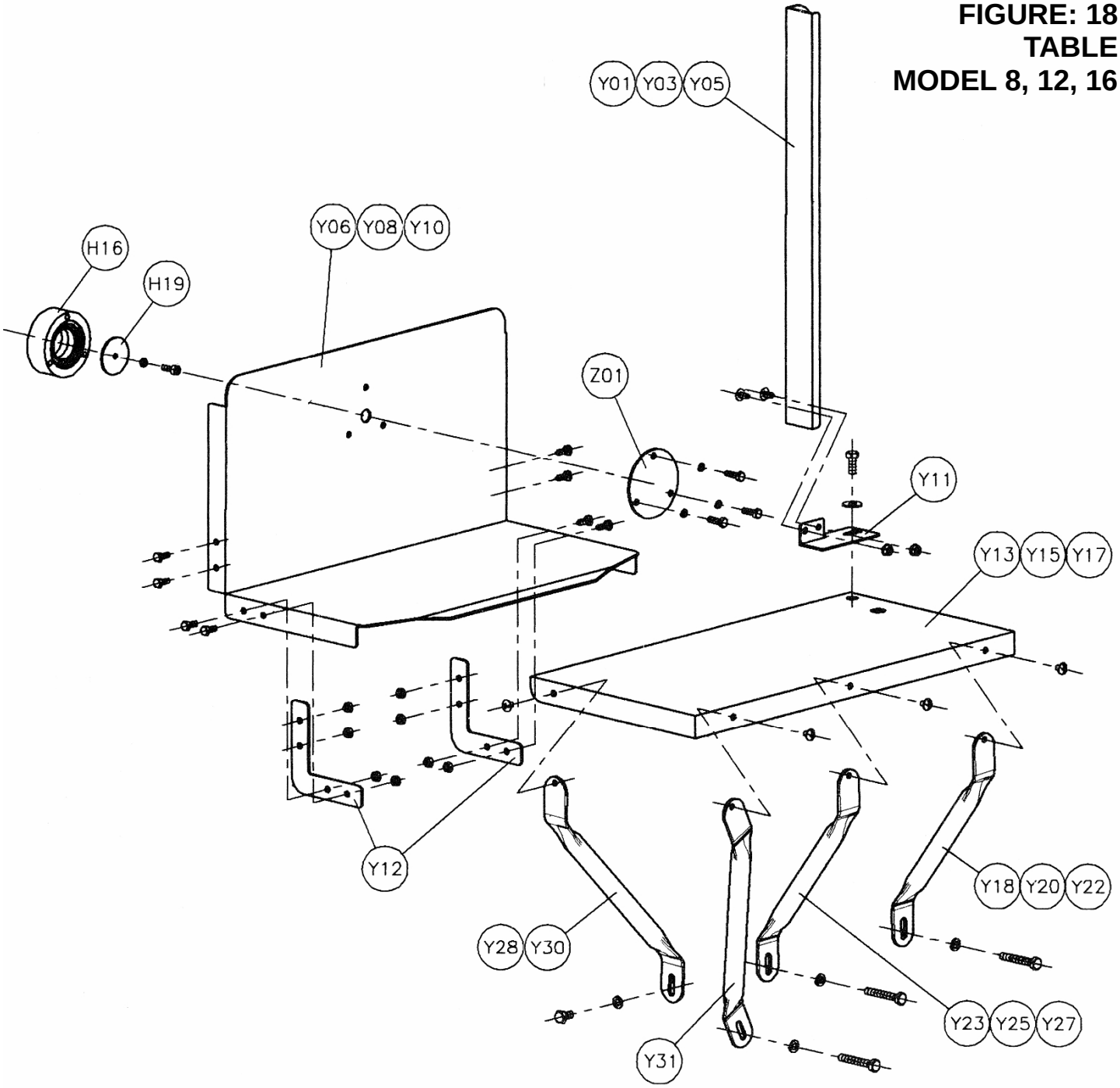
Part #	Description	Qty
U01	Square Net Top Guard (8)	1
U03	Square Net Top Guard (12)	1
U05	Square Net Main Frame (8)	1
U07	Square Net Main Frame (12)	1
U09	Support (S)	1
U10	Support (S)	1
U11	Guard Cover	1
U12	Guard Cover	1
U13	Upper Guard Stay (8)	1
U15	Upper Guard Stay (12)	1
T12	Chain Cover (8)	1
T14	Chain Cover (12)	1
T17	Rear Cover	1
T18	Right Side Cover	1
T19	Front Cover	1
T20	Left Side Cover	1

FIGURE: 17
UPPER GUARD
MODEL 36



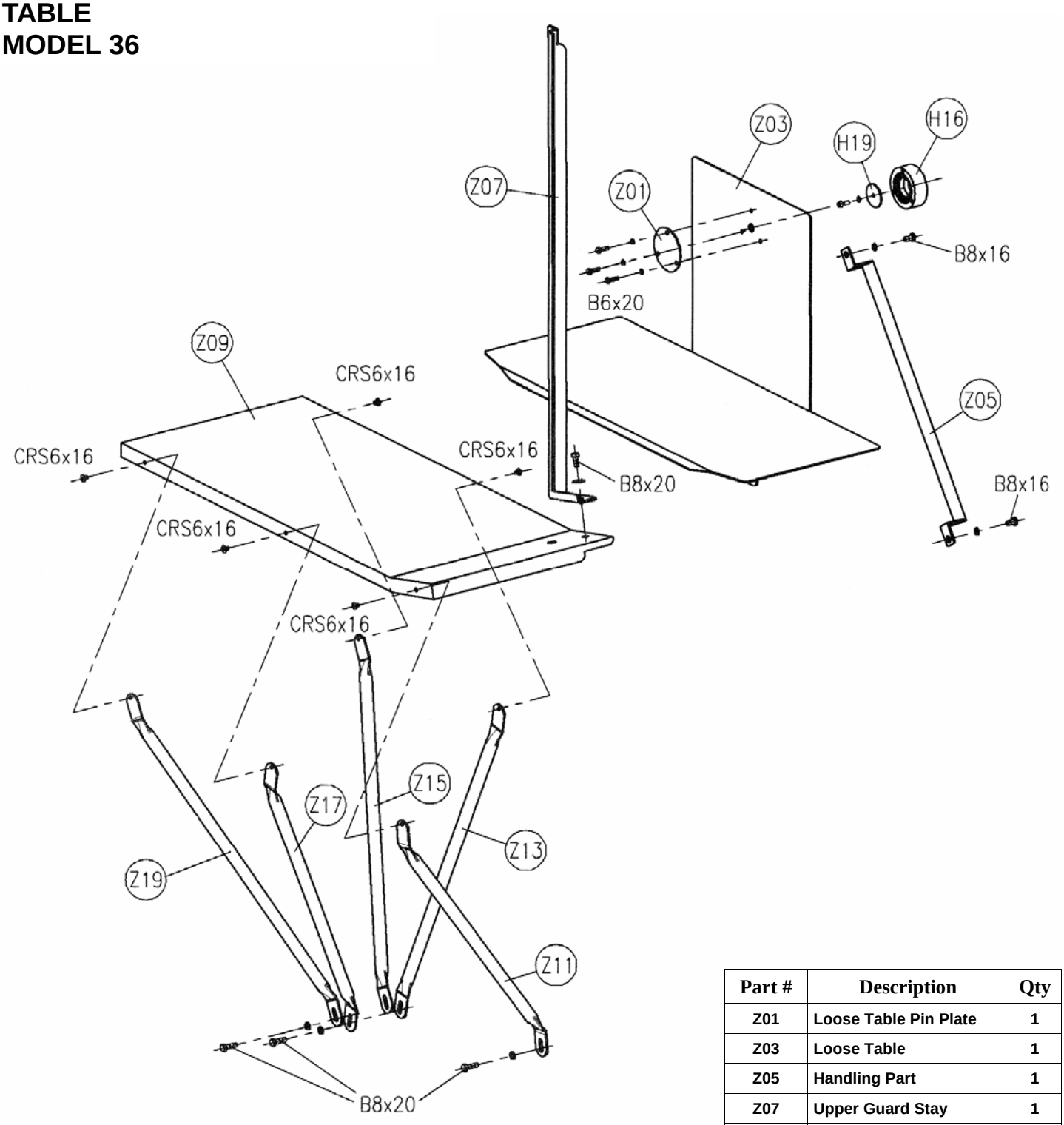
Part #	Description	Qty
W02	Upper Guard	2
W04	Upper Guard	1
W06	Upper Guard	1
W08	Upper Guard	1
W10	Upper Guard	1
W12	Upper Guard	2

FIGURE: 18
TABLE
MODEL 8, 12, 16



Part #	Description	Qty	Part #	Description	Qty
Y01	Upper Guard Stay (8)	1	Y18	Table Stay (8)	1
Y03	Upper Guard Stay (12)	1	Y20	Table Stay (12)	1
Y05	Upper Guard Stay (16)	1	Y22	Table Stay (16)	1
Y06	Loose Table (8)	1	Y23	Table Stay (8	1
Y08	Loose Table (12)	1	Y25	Table Stay (12)	1
Y10	Loose Table (16)	1	Y27	Table Stay (16)	1
Y11	Standard at Knotter	1	Y28	Table Stay (12)	1
Y12	90°	2	Y30	Table Stay (16)	1
Y13	Main Table (8)	1	Y31	Table Stay (16)	1
Y15	Main Table (12)	1	H16	Loose Table Pin	1
Y17	Main Table (16)		H19	Bearing Washer	1
			Z01	Loose Table Pin Plate	1

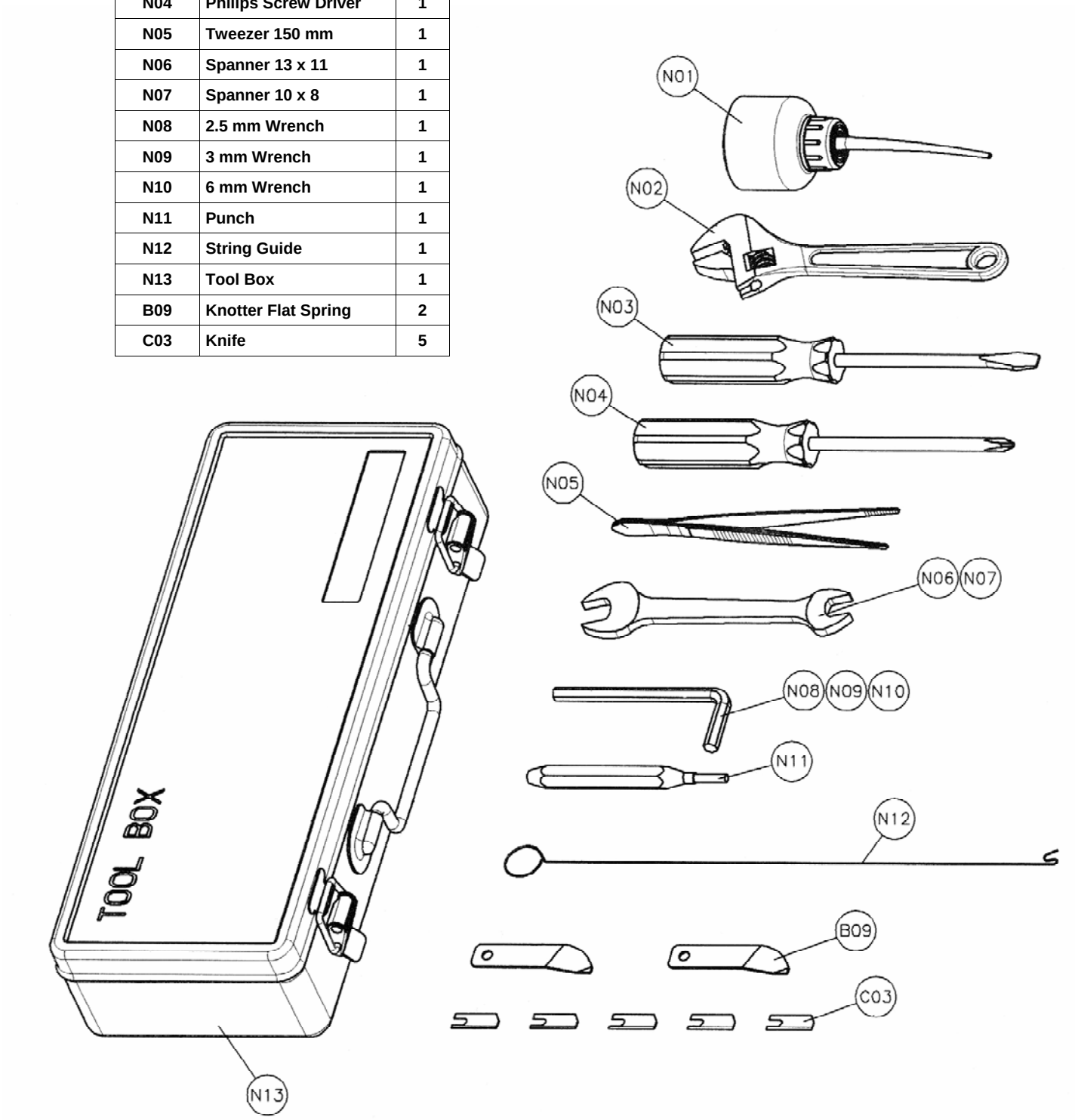
FIGURE: 19
TABLE
MODEL 36



Part #	Description	Qty
Z01	Loose Table Pin Plate	1
Z03	Loose Table	1
Z05	Handling Part	1
Z07	Upper Guard Stay	1
Z09	Main Table	1
Z11	Table Stay	1
Z13	Table Stay	1
Z15	Table Stay	1
Z17	Table Stay	1
Z19	Table Stay	1
H16	Loose Table Pin	1
H19	Bearing Washer	1

FIGURE: 20
TOOLS & SPARE PARTS

Part #	Description	Qty
N01	Oiler	1
N02	Adj Spanner	1
N03	Flat Screw Driver	1
N04	Philips Screw Driver	1
N05	Tweezer 150 mm	1
N06	Spanner 13 x 11	1
N07	Spanner 10 x 8	1
N08	2.5 mm Wrench	1
N09	3 mm Wrench	1
N10	6 mm Wrench	1
N11	Punch	1
N12	String Guide	1
N13	Tool Box	1
B09	Knotter Flat Spring	2
C03	Knife	5



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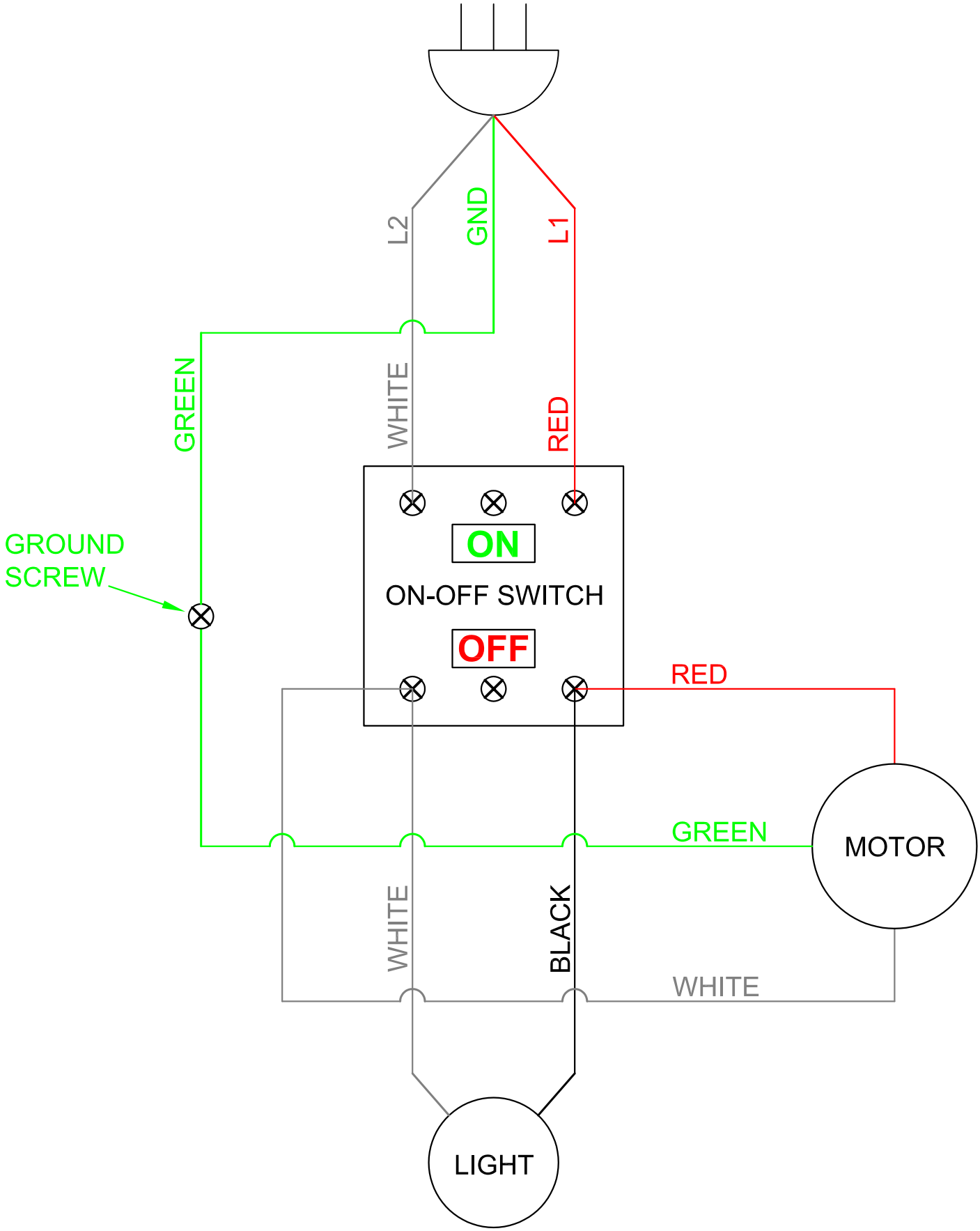

ROTARY PAK-TYER ON-OFF
SWITCH TO 110V CIRCUIT