



SPARE PART AND OPERATION MANUAL

Form 109 (09/10)

**FOOD MIXER
Model W150PL
1993 to Present**

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Read this page entirely BEFORE beginning installation.

VARIMIXER INSTALLATION INSTRUCTIONS

UNDER NO CIRCUMSTANCES ARE THE SPEED LEVER, BOWL LIFT LEVER, OR THE BOWL ARMS TO BE USED TO MOVE THE MIXER INTO PLACE. DAMAGE WILL RESULT TO THE UNIT.

IT IS RECOMMENDED THAT THE TOP LID BE REMOVED BEFORE MOVING THE UNIT.

The mixer must be mounted with the rubber feet, which neutralize both shaking and rusting. Spacers can be inserted under the mixer's feet if the floor is uneven. The mixer can be bolted to the floor if desired.

Before the mixer is connected to power, it should be checked that the voltage and frequency on the rating plate is correct in relation to the place of installation. A unit labeled 220V 3 Phase will operate from 208V to 240V 3 phase safely. The rating plate is located on the rear right side of the mixer. The electrical connection box is located at the top rear of the mixer.

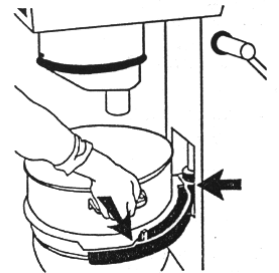
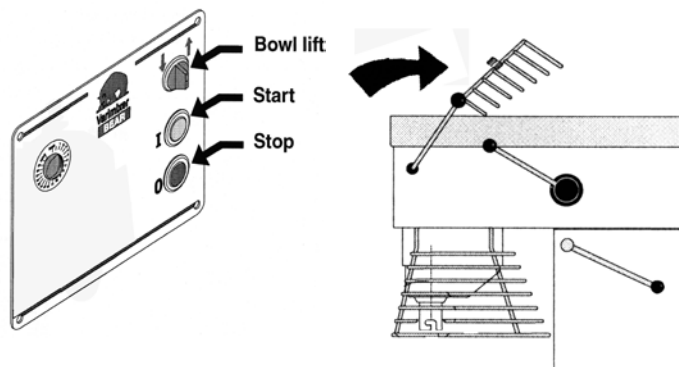
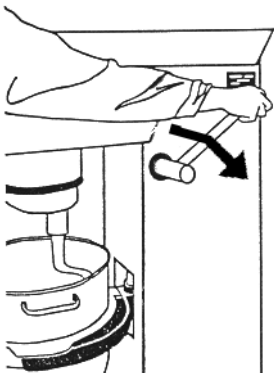
WARNING

Electrical and grounding connections must comply with applicable portions of the National Electrical Code and/or other local electrical codes.

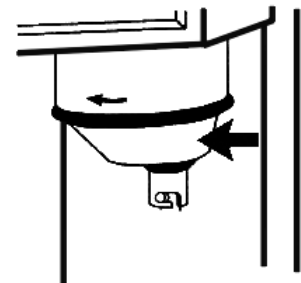
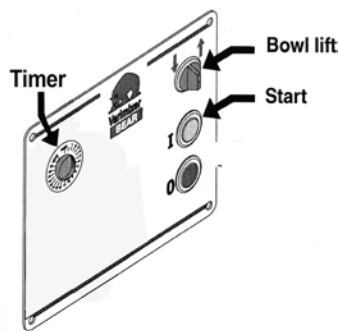
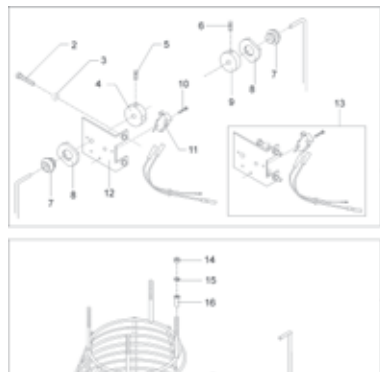
Wire Color Codes

White-Phase 1
Red -Phase 2
Black-Phase 3
Green-Ground

No Neutral is used in the United States and Canada



1. Lower the bowl using the bowl lift lever or the bowl lift switch on the front panel.
2. Open the bowl screen.
3. Remove the bowl and tools.



4. Close bowl screen and raise the bowl arms into the up position.
5. Turn timer to 10 minutes and push "start".
6. Insure cover is rotating in the correct direction.

OPERATION OF THE MIXER:

A) Open the bowl screen and place the bowl in the bowl arms. Note: The bowl arms must be in lowest position and the bowl must be pushed all the way into the bowl arms. (Fig.3).

B) Place the mixing tool in the bayonet shaft. The pin on the tool must be turned into the bayonet hole (fig.2).

C) The bowl is raised to working position by a clockwise turn of the button for bowl lift. Ensure that the bowl is placed correctly. Close the bowl screen. If the mixer is equipped with a timer, set the mixing time required by turning the timer (fig 1) clockwise. The mixer will stop automatically, when the time runs out. When the mixer has timed out, the "procedure for starting after emergency stop" is used before the mixer is re-started.

D) Start the mixer by pressing the green start button (fig.1)

The mixer will only start when the bowl is in the "up" position, the bowl screen is "closed", and the timer is set to "time" or "hold".

E) Turn the speed selector lever (fig. 4) to the rear until the required speed has been obtained, (notice the recommended maximum speeds on page 3).

F) Before the mixer is stopped, the speed selector lever must be moved back to lowest speed (fig.4).

G) Stop the mixer by pressing the red stop button (fig.1)

PROCEDURE FOR STARTING AFTER EMERGENCY STOP:

1) This procedure must be used in cases where the mixer has been interrupted in high speed.

2) Lower the bowl and remove the tool from the bayonet.

3) Raise the bowl arms, either empty or with the bowl.

4) Close the bowl screen, start the mixer and move the speed selector lever back to lowest speed. Switch off the mixer. Now the mixer can be started as usual.

OVERLOAD

Do not overload the mixer. Sticky and heavy doughs may reduce the capacity of the bowl by 75%. The capacity is further reduced if the speed of the mixing tool is increased beyond recommended values or if an incorrect mixing tool is used. Large lumps of fat or cooled ingredients MUST be cut into small parts before they are placed into the bowl or damage can occur to the mixing tool(s).

Fig. 1 Operation panel.

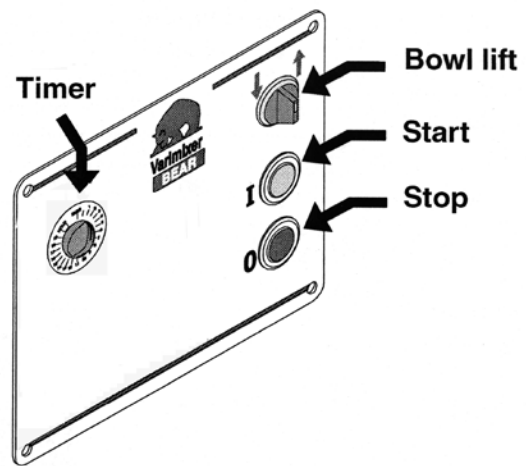


Fig. 2

Mixer with open safety screen, lowered bowl and mounted tool.

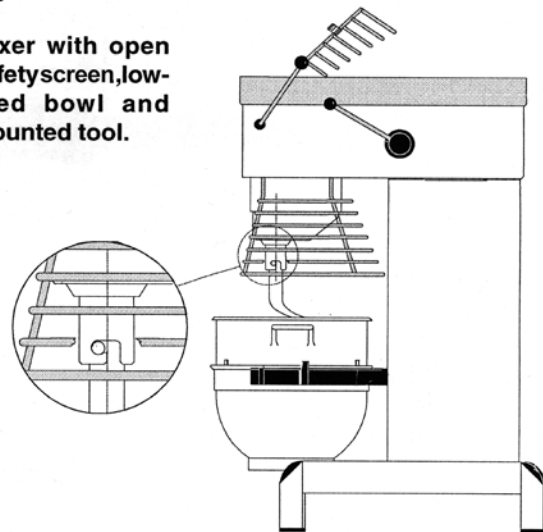


Fig. 3

Mixer seen from above, the bowl has been pushed all the way into the bowl arms. Notice: the third "ear" of the bowl is facing the mixer

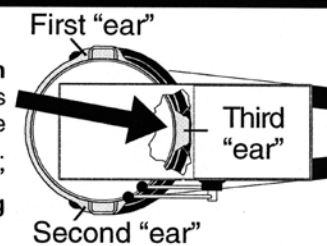
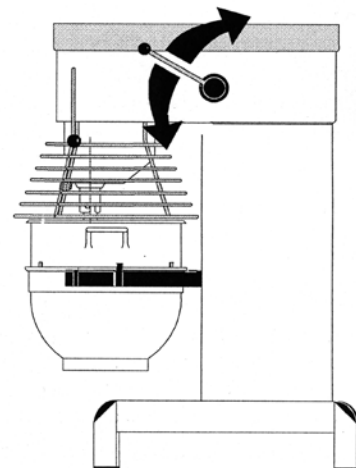


Fig. 4

Mixer with closed safety screen, raised bowl and mounted tool.



Correct use of tools:

Whips should never be struck against hard objects, this will decrease the life of the tool.

Recommended applications for tools:

Whip	Beater	Hook
Cream	Cakes	Pizza
Egg Whites	Waffles	Bread
Mayonnaise	Muffins	Donut
and the like.	and the like.	Doughs and the like.

Cleaning:

The mixer should be cleaned daily or after use. The mixer should be cleaned with a soft cloth and clean water. Sulphonated soaps should be used with caution as they destroy the mixer's lubricants.

Never use high pressure cleaning for the mixer.

Bowls and tools of aluminium must not be washed with strong alkaline detergents (pH not to exceed 9.0).

The soap suppliers can recommend the correct type of soap.

The mixer should be unplugged before cleaning to prevent accidental starting while cleaning.

The inside of the beater shaft should be cleaned once a day with warm, soapy water.

Dough hook Cleaning: *Special care should be given to cleaning the dough hook. We recommend that it be cleaned and sanitized in a commercial dish machine. An alternate cleaning procedure is to vigorously scrub the hook with a hot water and detergent solution. Use a heavy bristled brush. After cleaning, sanitize the hook by rinsing it with a 50 ppm solution of sodium hypochlorite.*

Maintenance and Lubrication:

The variable speed pulleys must be lubricated regularly, i.e. a lubrication interval of approx. 60 hours of operation or once a week.

Lubrication of variable speed pulleys:

-Start the mixer and increase the speed to approx. 50%. Stop the mixer and open the lid on the top of the mixer. On the top of each of the two pulley set shafts is a grease nipple (fig. 5 point 1). Press grease through the grease nipples until the grease gun feels hard to press or until grease comes out between the shaft and the pulleys.

-Start the mixer, and set the speed back to low speed.

-Stop the mixer and fill the grease gun with new grease so that it is ready for next time.

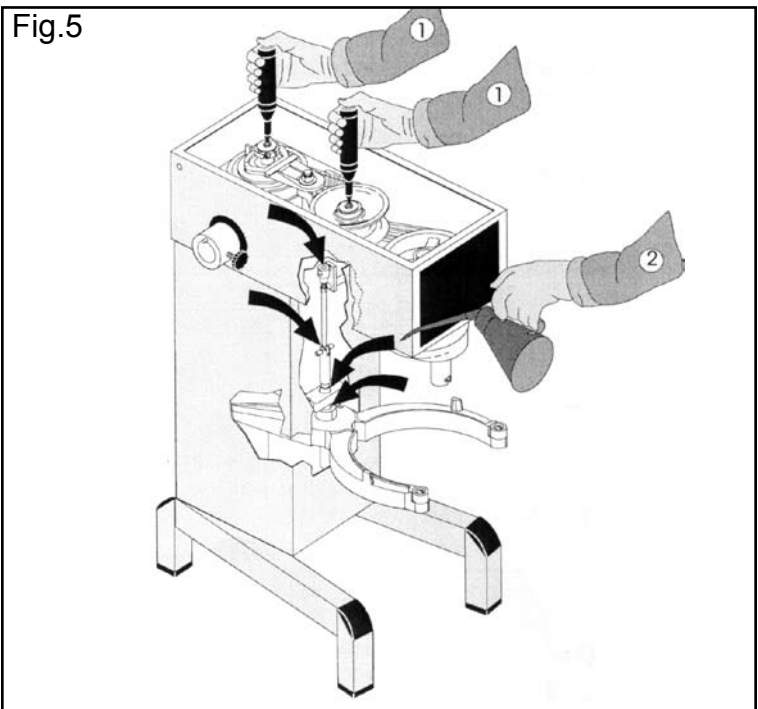
Lubrication of other movable parts:

The movable parts of the bowl arms, the shaft and the lifting rod must also be lubricated with oil. Remove the rear covering and lubricate the marked points with an oil can. (fig.5 pkt.2)

Grease Types:

-Grease for the pulley set shafts: Lubriplate # 1200-2

-On repair of the planetary head: Grease the toothed wheel and the toothed rim with Nye Gel 868VH, (PN 868VH), the needle bearings in the planetary head must not be lubricated with this type of grease, they should be lubricated with PN Sapphire 2. Do not use any another type of grease than the one stated here.



List of Errors

Possible Solutions

A rattling sound from the closed part of the mixer.
 The mixer starts "striking" when kneading dough which normally causes no problems.
 The mixer changes its speed by itself.
 The minimum and the maximum speeds are changing.
 The bowl is too tight or too loose.
 The tool hits the sides of the bowl.
 The tool hits the bottom of the bowl.

Adjustment of special v-belt
Adjustment of special v-belt
Adjustment of special v-belt
Adjustment of speed.
Adjustment of bowl fixing
Adjustment of bowl centering or damaged tool.
Adjustment of bowl height or damaged tool.



Prior to a possible repair or adjustment, switch off the mixer by disconnecting the power cable.

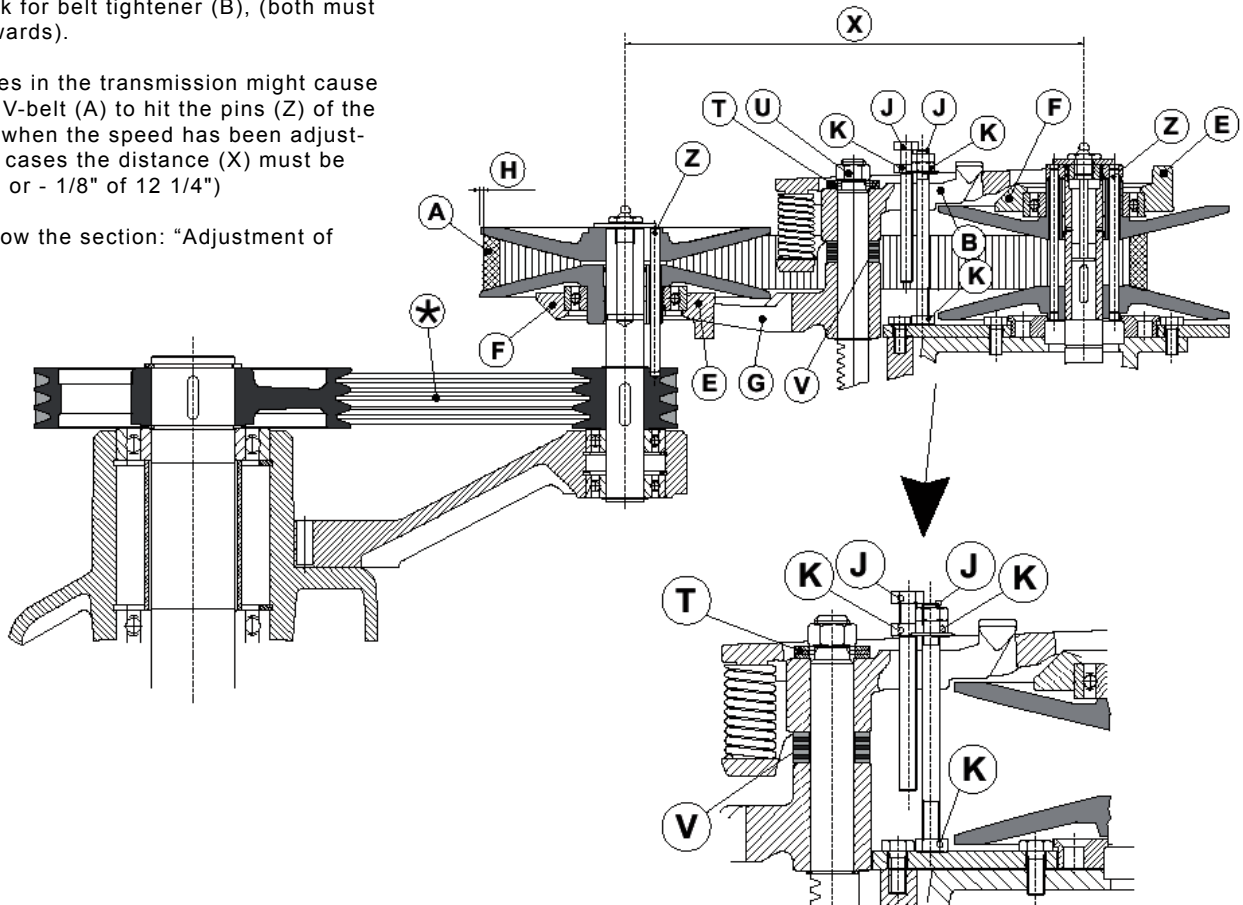
Adjustment of special v-belt:

The distance (X) is only indicative as it depends on the tolerance of the special V-belt.

1. Start by tightening the v-belts (*).
2. Tighten the special V-belt (A) by moving one or two washers from (V) to (T).
3. Start the mixer and leave it running while the nut (U) is tightened completely.
4. On the front pulley set the stud (E) on the varispeed collar (F) must be placed inside the lower fork (G) and on the rear pulley set outside the fork for belt tightener (B), (both must point backwards).
5. Tolerances in the transmission might cause the special V-belt (A) to hit the pins (Z) of the pulley sets when the speed has been adjusted. In such cases the distance (X) must be reduced. (+ or - 1/8" of 12 1/4")
6. Then follow the section: "Adjustment of speed"

Adjustment of speed:

1. The stop screws (J) on the speed lever should be adjusted so that the measurement (H) is 1/8" on the front and the rear pulley, at low and high speed, respectively. Tighten the counter nuts (K) when the speed is correctly adjusted.
2. Tolerances in the transmission might cause that the special V-belt (A) is hitting the pins of the pulley sets (Z) when the speed has been adjusted. In such cases the distance (X) must be reduced, see "Adjustment of special v-belt", and the speed must be readjusted.

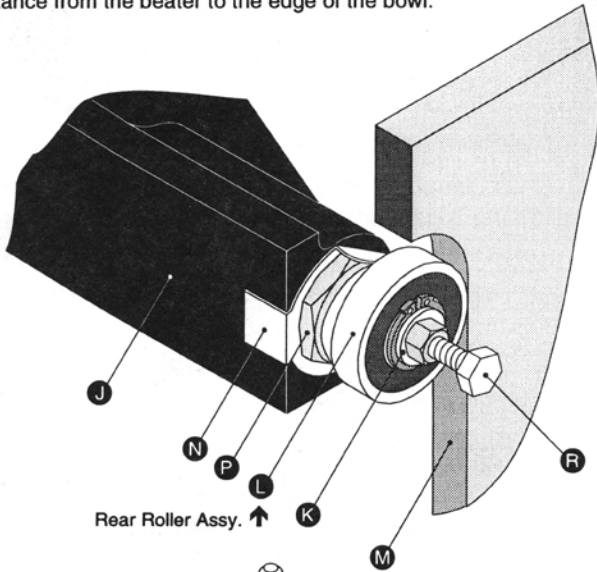


ADJUSTING OF BOWL CLAMPING AND CENTERING

In the rear part of the bowl arms (J) a shaft with an eccentric stud (K) has been mounted, on which the ball bearing is mounted. By turning the eccentric stud, the bowl arms can be opened and closed so that the clamping and the centering of the bowl can be adjusted. It has to be observed that the shaft is mounted in the bowl arm with a thread so that when the eccentric stud is turned, the whole shaft is turned out and in into the bowl arms. When exchanging the whole shaft, the right starting point for the adjustment must be found first. The ball bearing (L) must be in the middle of the guide plate (M) so that the width of the entire ball bearing is fitting tightly against the guide plate, and at the same time it has to be observed that the eccentric stud cannot hit the back plate when the adjustment has been finished.

In order to counteract that the eccentric shaft turns loose by itself when the mixer is working, the eccentric shaft must be self-tightening. In order to obtain this effect, the below drawings must be followed, on which the adjusting area for the left and the right bowl arm, resp. is shown.

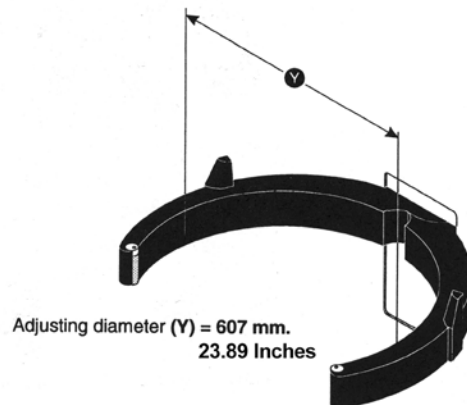
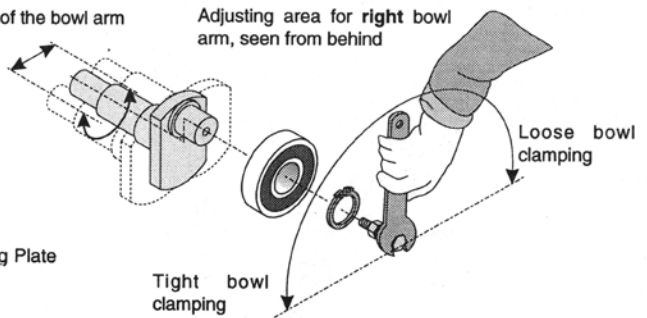
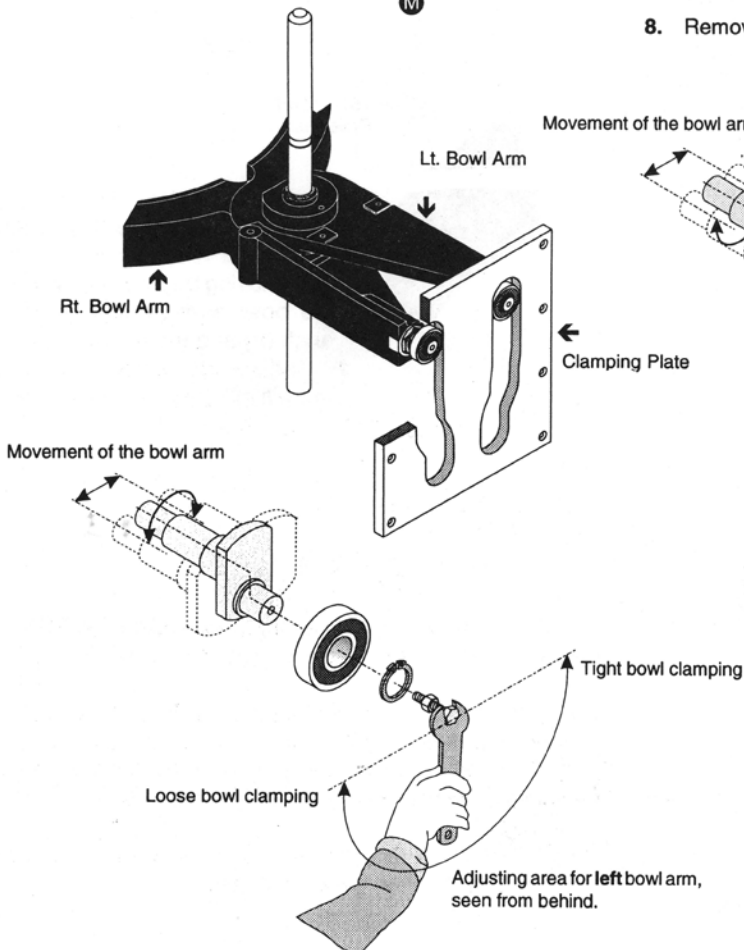
First find the bowl centering, e.g. by mounting bowl and beater in the mixer, and turn the beater round with your hand, and measure the distance from the beater to the edge of the bowl.

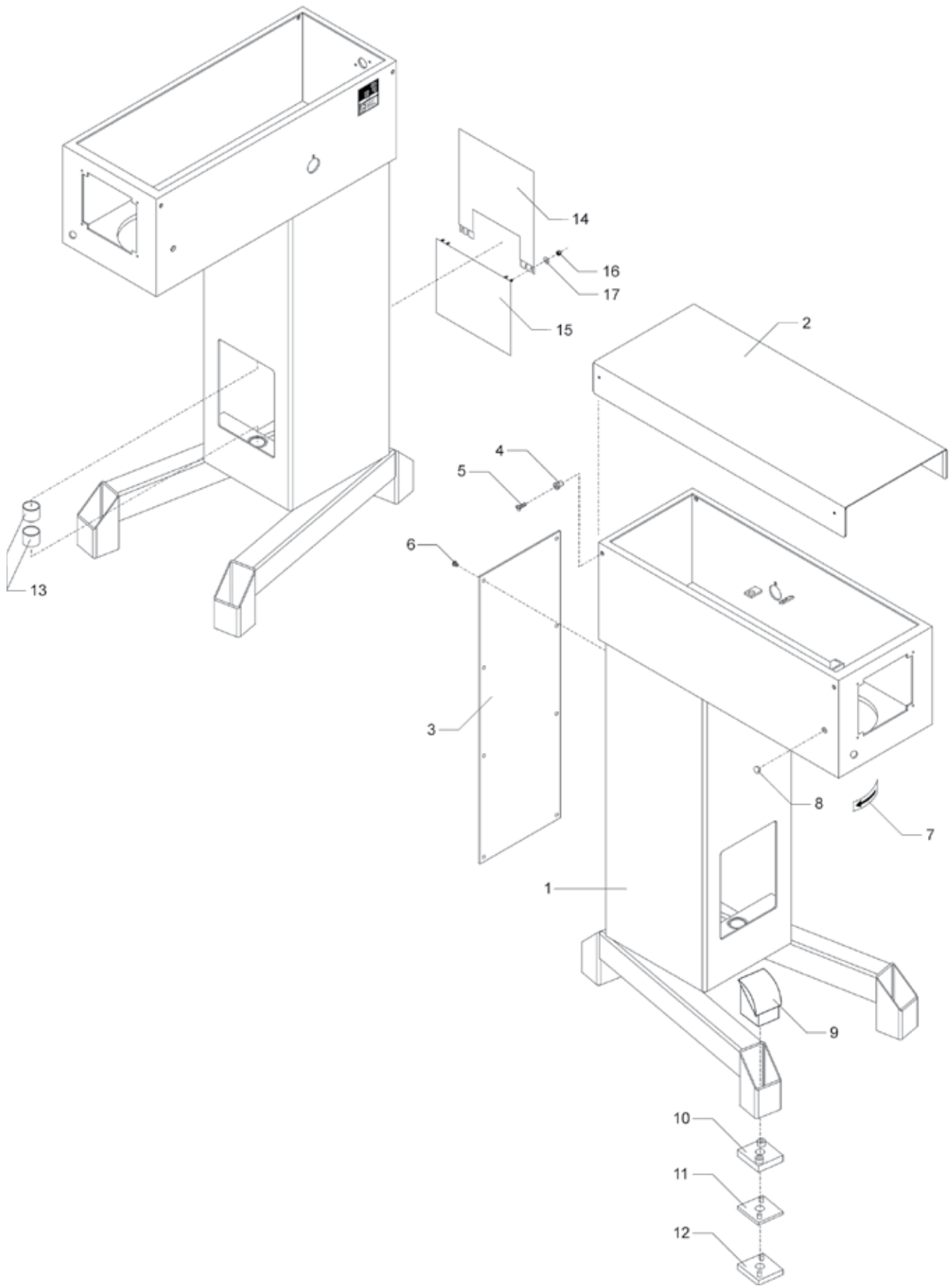


1. When adjusting the clamping and centering of the bowl, the bowl arms must be raised into working position. When exchanging the shaft with eccentric stud (K) the bowl arms must be lowered.
2. First open the lock plate (N).
3. Loosen the shaft counter nut (P). Use span 46.
4. Screw an M8 bolt with counter nut (R) into both the eccentric studs (K), and tighten the counter nuts. If the shaft with the eccentric stud has stuck in the bowl arm, it can be loosened with a key with the span 36.
5. By turning the eccentric studs the clamping and the centering of the bowl can be adjusted.

Remember to use the right adjusting area for right and left bowl arm. The drawings show the adjusting area for both bowl arms.

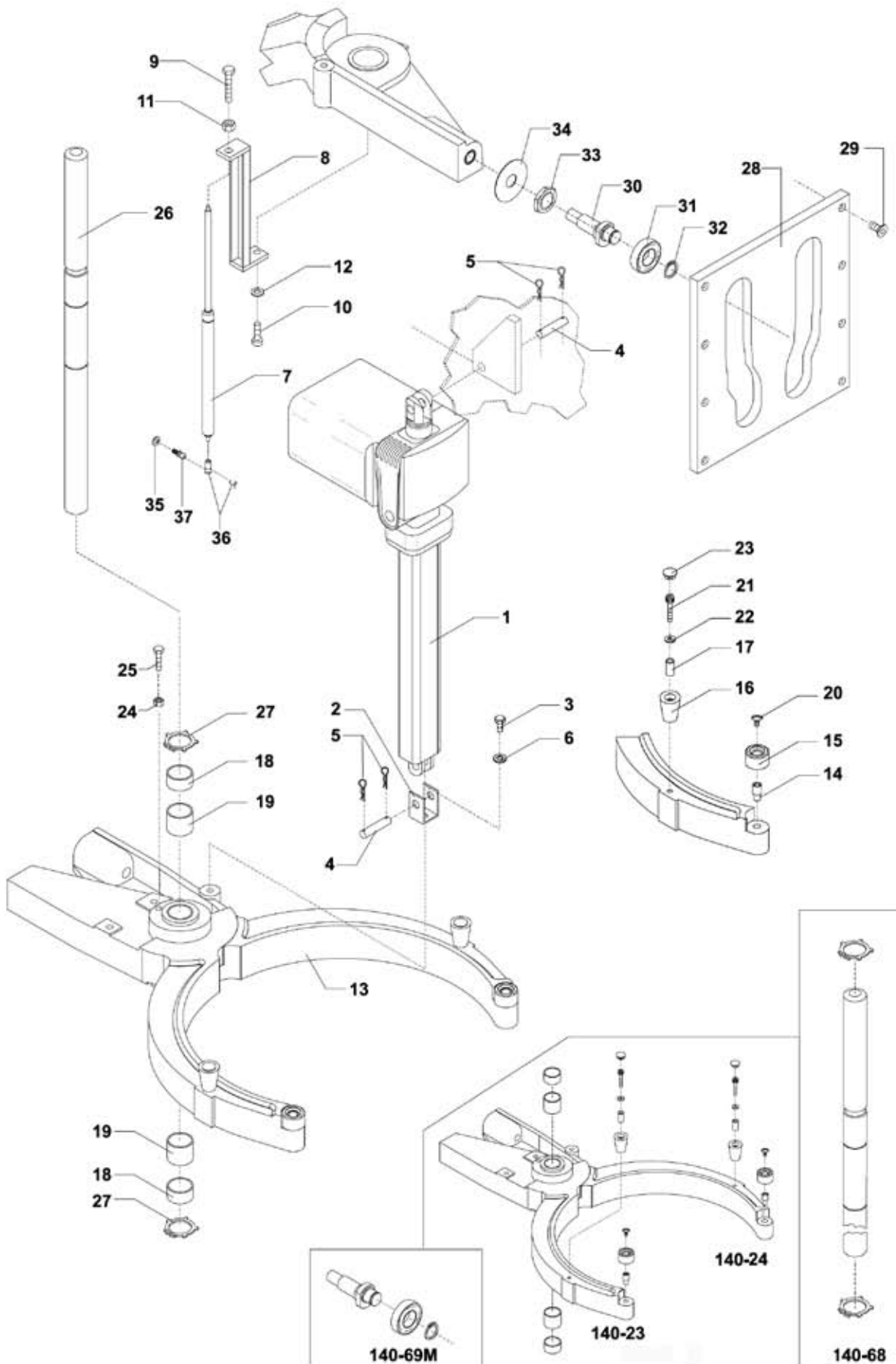
6. When the adjusting is correct, tighten the shaft counter nuts (P). Hold back the bolt (R), while the shaft counter nut is tightened.
7. Knock the lock plate (N) in position.
8. Remove bolt and counter nut (R).





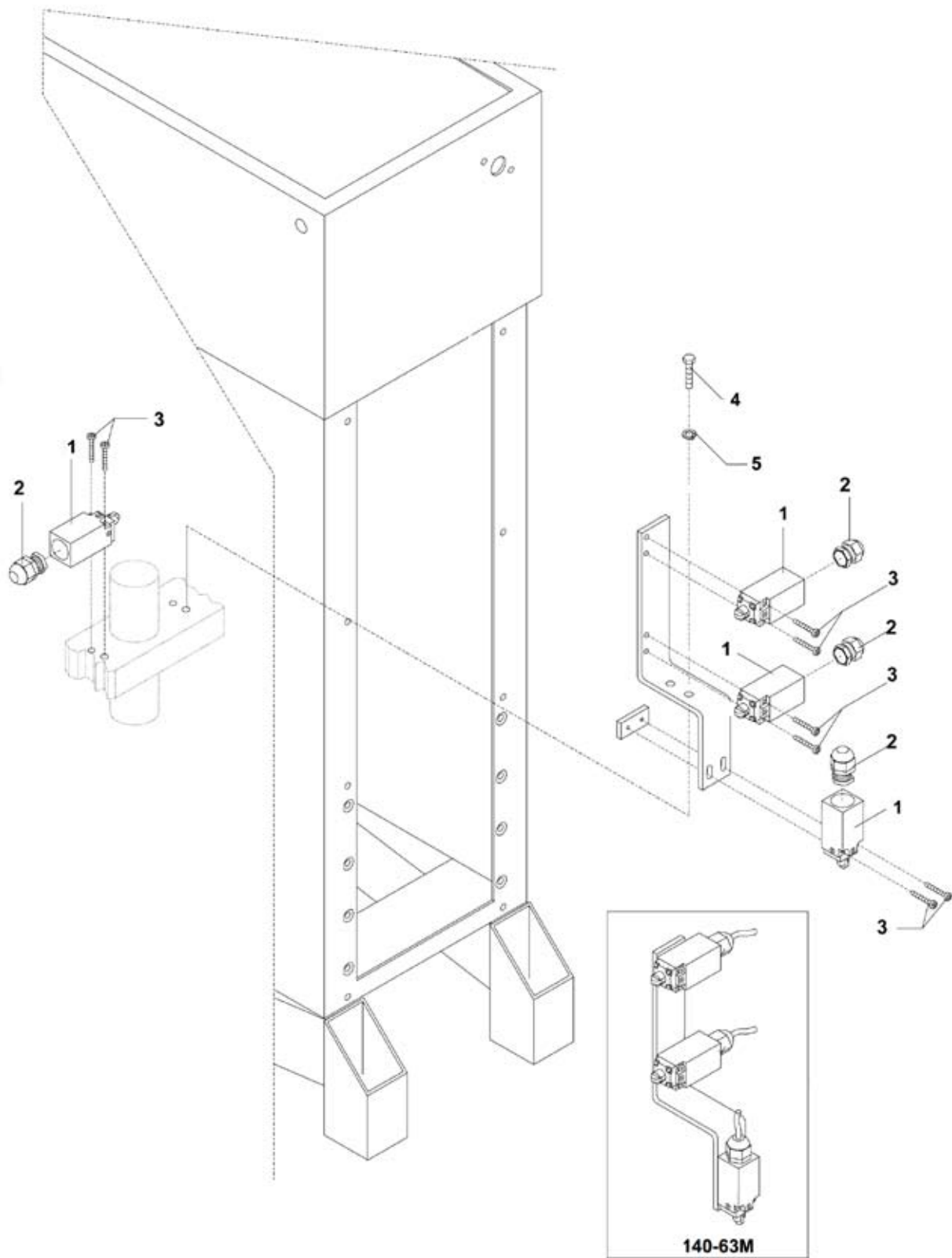
Machine Column W150PL

<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Column	140-22MO
2.	Top Lid	150N-21
3.	Rear Access Panel	150N-22.7
4.	Threaded Bushing Top Lid	STA 6580
5.	Screw Top Lid	STA 5017
6.	Screw Rear Access Plate	STA 5080
7.	Indicator Arrow	15-245
8.	Plug Button (non bowl screen only)	STA 6519
9.	Knee Pad	80-212
10.	Intermediate Pad 3mm	80N-214.3
11.	Intermediate Pad 6mm	80N-214.6
12.	Foot Pad	80N-213
13.	Bushings Bowl Arm Shaft	STA 2530
14.	Upper NSF Plate	140-270
15.	Lower NSF Plate	140-274
16.	Nut for NSF Plate	STA 5834
17.	Washer	STA 6027



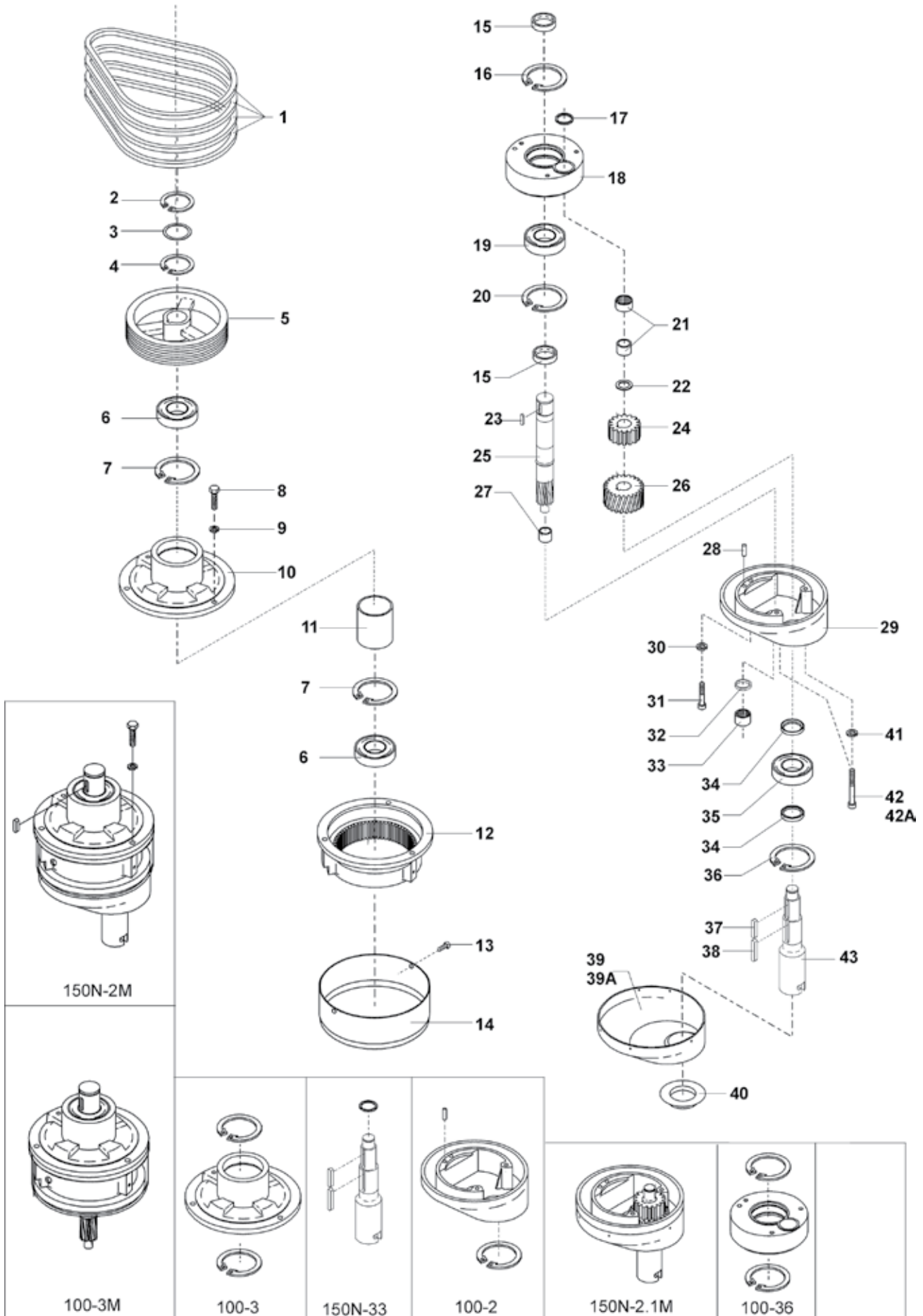
Bowl Arms W150PL

<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Bowl Lift Motor Magnetik 24VDC	140-86.15
1A.	Bowl Lift Motor Magnetik 220VAC	140-86.5
1B.	Bowl Lift Motor Magnetik 115VAC	140-86.6
1C.	Control Box for 24VDC (Not shown)	140-87
2.	Bracket Lower Bowl Lift Motor	140-116
3.	Bolt	STA 5454
4.	Pin f/lower bowl lift motor	100-67
5.	Cotterpin	STA 6205
6.	Washer	STA 6058
7.	Pneumatic Spring	140-121M
8.	Bracket f/Pneumatic Spring	140-119
9.	Upper Bolt f/Pneumatic Spring	140-120
10.	Bolt	STA 5454
11.	Nut	STA 5815
12.	Lockwasher	STA 6058
13.	Bowl Arms	see diagram
14.	Bowl Arm Roller Threaded Shaft	31-127
15.	Bowl Arm Front Roller	31-128
16.	Tapered Roller for Bowl Arms	140-127
17.	Bushing for Tapered Roller	140-128
18.	Bushing MB5030DU W150 Bowlarm	STA 2527
19.	Bushing MB5040 W150 Bowlarm	STA 2530
20.	Screw M8x16mm Bowl Arm Roller	STA 5088
21.	Socket Head Bolt M10x50 F/Roller	STA 5678
22.	Washer	STA 6010
23.	Plug Button Bowl Arm Bolt	STA 6518
24.	Nut	STA 5825
25.	Bolt	STA 5345
26.	Bowl Arm Shaft	140-68
27.	Snap Ring	STA 3464
28.	Bowl Arm Guide Plate	140-71.1
29.	Screw f/Guide Plate W150PL	STA 5620
30.	Sold with assembly 140-69M only	see diagram
31.	Sold with assembly 140-69M only	see diagram
32.	Snap Ring	STA 3467
33.	Nut M30x2/Bowl Arm Adjuster	140-170
34.	Lock Plate / Bowl Arm Adjuster	140-69.1
35.	Washer	STA 6020
36.	Ball Mounting M8 for Pnu Sprng	140-121.1
37.	Fastening Ball 013 for Pnu Spg	140-121.2



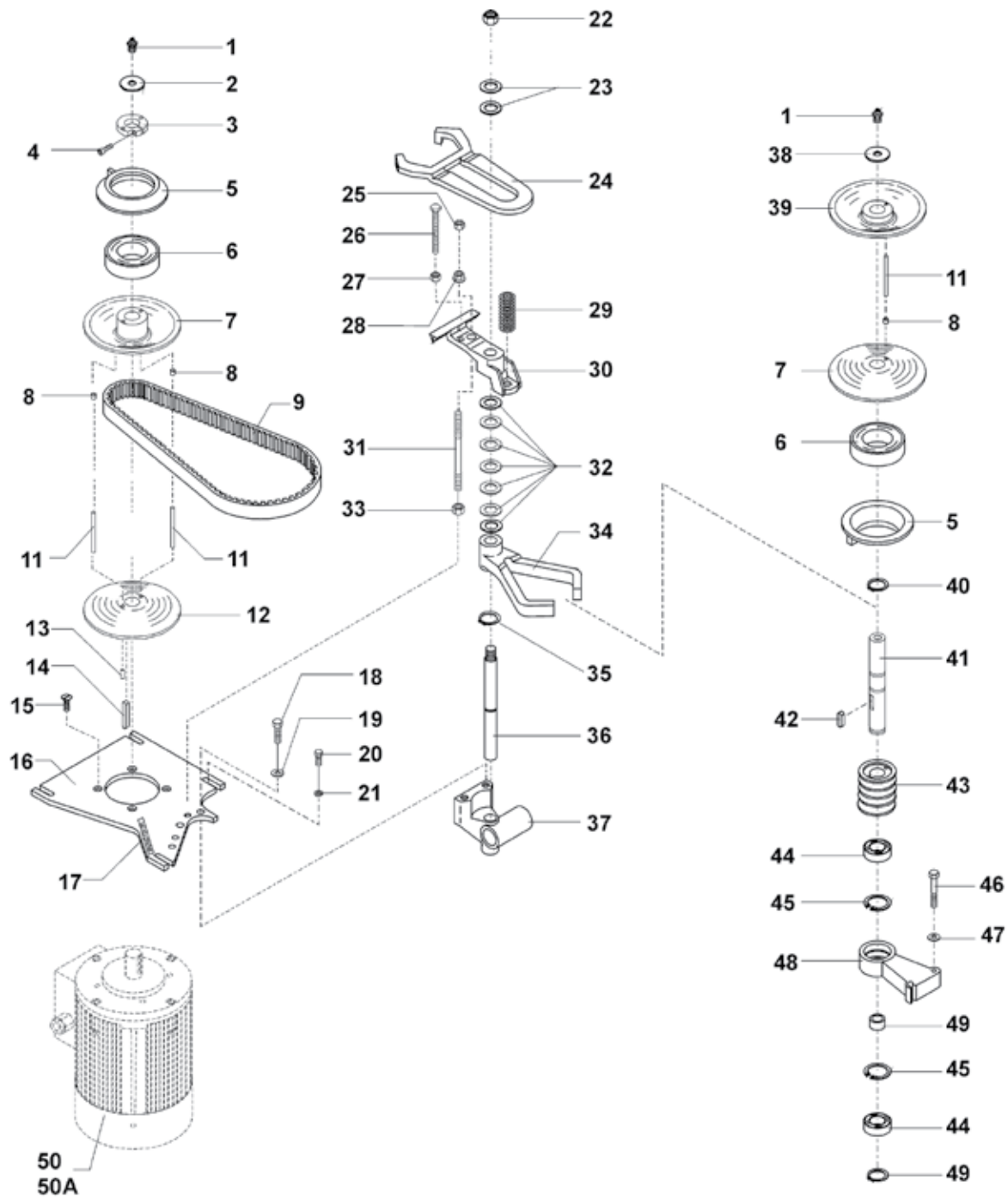
Bowl Lift Microswitches W150PL

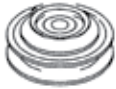

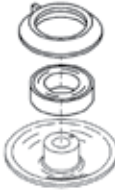

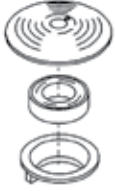

<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Bowl Arm Microswitch	81-173
2.	Cable Inlet	STA 3002
3.	Microswitch Mounting Screws	STA 5274
4.	Bolt Bowl Lift Bracket	STA 5312
5.	Lockwasher	STA 6053



Planetary Head W150PL

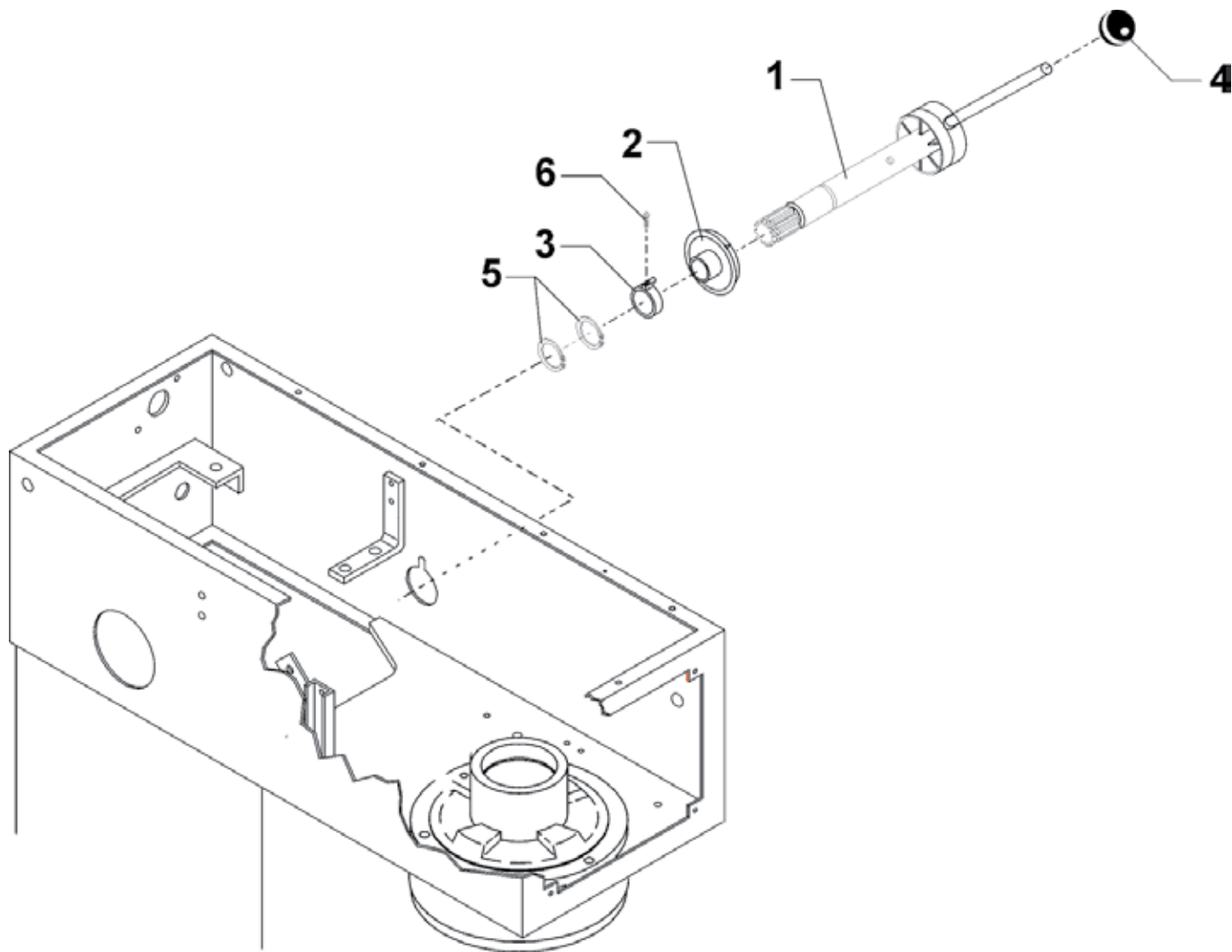
<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	V-Belt (Must be changed as a set)	100N-90.2 Order qty 4
2.	Snap Ring	STA 3419
3.	Washer	STA 6048
4.	Snap Ring	STA 3419
5.	Planetary Pulley	100N-129A
6.	Ball Bearing	100-99
7.	Snap Ring	STA 3532
8.	Bolt	STA 5346
9.	Lockwasher	STA 6057
10.	Main Bearing Casting	100-3
11.	Distance Tube	100-141
12.	Gear Wheel	100-1
13.	Screw	STA 5044
14.	Shroud	100-22.9P
15.	Spacer	100-37
16.	Snap Ring	STA 3530
17.	Snap Ring	STA 3478
18.	Eccentric Disc	100-36
19.	Ball Bearing	100-100
20.	Snap Ring	STA 3530
21.	Needle Bearing w/ Race	100-96
22.	Washer	100-235
23.	Key	STA 2030
24.	Upper Rim Pinion	100-31
25.	Main Shaft	100N-30
26.	Lower Rim Pinion	100N-32N
27.	Race for Needle Bearing	100-101RACE
28.	Pin	STA 6460
29.	Lower Planetary Head Casting	100-2
30.	Lockwasher	STA 6057
31.	Bolt	STA 5644
32.	Seal	100-108R
33.	Needle Bearing w/Race	100-101
34.	Spacer	100-37
35.	Ball Bearing	100-97
36.	Snap Ring	STA 3532
37.	Key	STA 2034
38.	Key	STA 2039
39.	Stainless Steel Cover	100-272
40.	Rubber Ring	100-209
41.	Lockwasher	STA 6057
42.	Bolt (Allen Head-under cover)	STA 5650
42A	Bolt (Hex Head S/S-over cover)	STA 5652
43.	Bayonet Shaft	150N-33



 <p>150N-59M Motor Pulley Assembly</p>	 <p>150N-13.1M Lower Motor Pulley Assembly</p>	 <p>60-15.1M Upper Motor Pulley Assembly</p>	 <p>60-13M Top Pedestal Pulley</p>	 <p>60-15M Lower Pulley Pedestal Assembly</p>	 <p>100N-6M W100 4-Belt</p>
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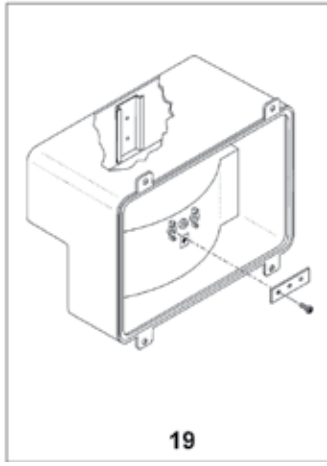
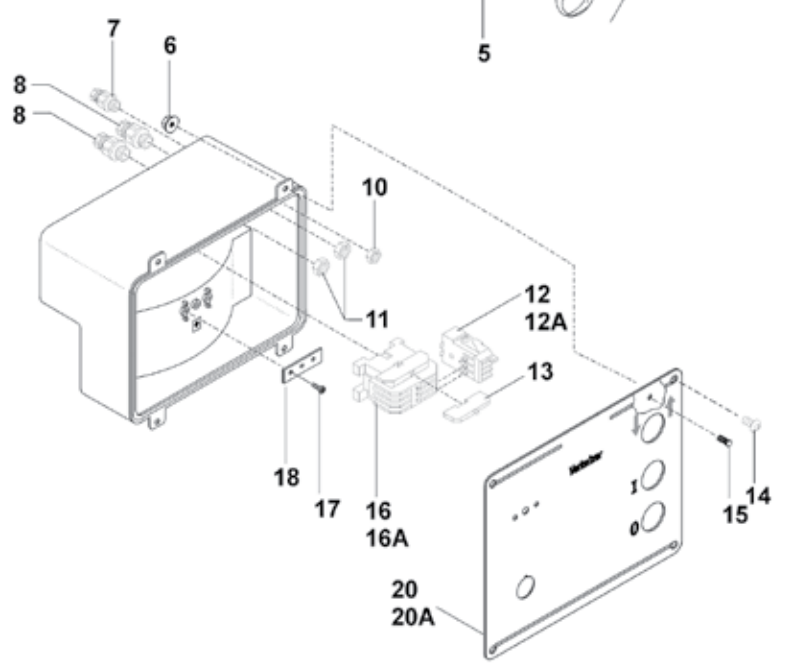
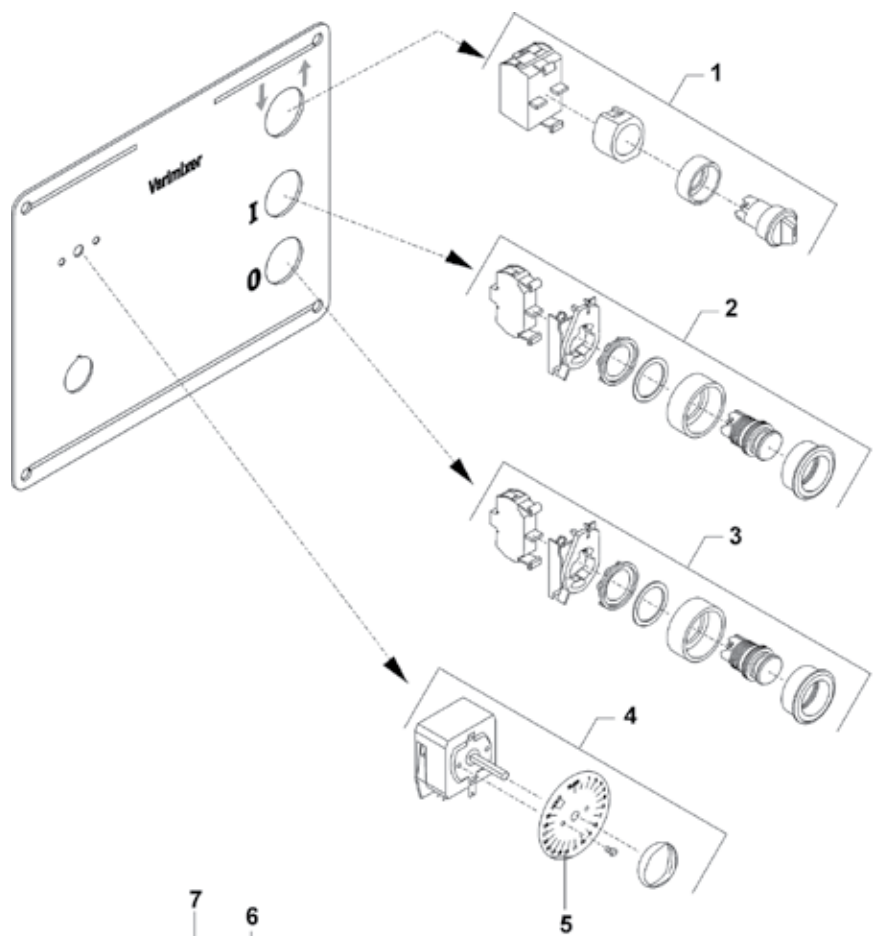
Transmission W150PL

<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Grease Zerk	STA 3220
2.	Washer	STA 6018
3.	Clamping Ring w/screw	27-227
4.	Screw f/clamping ring	STA 5612
5.	Vari Speed Collar	15-17
6.	Ball Bearing	15-103
7.	Movable Pulley	60-15.1M
8.	Bushing	NA
9.	Vari Speed Belt	60-91
10.	Reducer	15-156
11.	Drive Pin	60-285
12.	Motor Pulley Bottom Half Assembly	150N-13.1M
13.	Set Screw	NA
14.	Key (no attachment drive)	STA 2011
14A.	Key (f/units with attachment drive)	NA
15.	Slotted Screw f/motor mount plate	STA 5018
16.	Motor Mount Plate	60-61
17.	Label	N/A
18.	Mounting Bolt f/speed mechanism	STA 5345
19.	Washer	STA 6010
20.	Bolt f/motor mount plate	STA 5433
21.	Washer	STA 6026
22.	Nut f/rack	STA 5815
23.	Washers for spring fork	STA 6040
24.	Upper Fork	20-19
25.	Jam Nut f/ low speed stop	STA 5810
26.	Bolt f/high speed stop	STA 5446
27.	Jam Nut f/ high speed stop	STA 5810
28.	Flanged Nut f/low speed stop	STA 5895
29.	Vari Spring	40P-275
30.	Trestle	20-26
31.	Pin Bolt f/low speed stop	30N-305
32.	Washers for spring fork	STA 6040
33.	Flanged Nut f/low speed stop	STA 5895
34.	Lower Fork	27-16
35.	Snap ring f/rack	STA 3407
36.	Rack	15-46
37.	Bearing for Rack	15-18
38.	Washer	STA 6018
39.	Upper Pedestal Pulley	60-13M
40.	Snap Ring	STA 3410
41.	Pedestal Shaft	100N-41
42.	Key f/Pedestal Shaft	STA 2022
43.	Pulley f/Pedestal Shaft	100N-128 (4V)
44.	Ball Bearing	27-102
45.	Snap Ring	STA 3514
46.	Bolt	STA 5348
47.	Washer	STA 6026
48.	Pedestal Arm	100N-6
49.	Snap Ring	STA 3410
50.	Motor 220V 3 Phase	150N-85.50
50A.	Motor 480V 3 Phase	150N-85.10



Speed Lever System W150PL

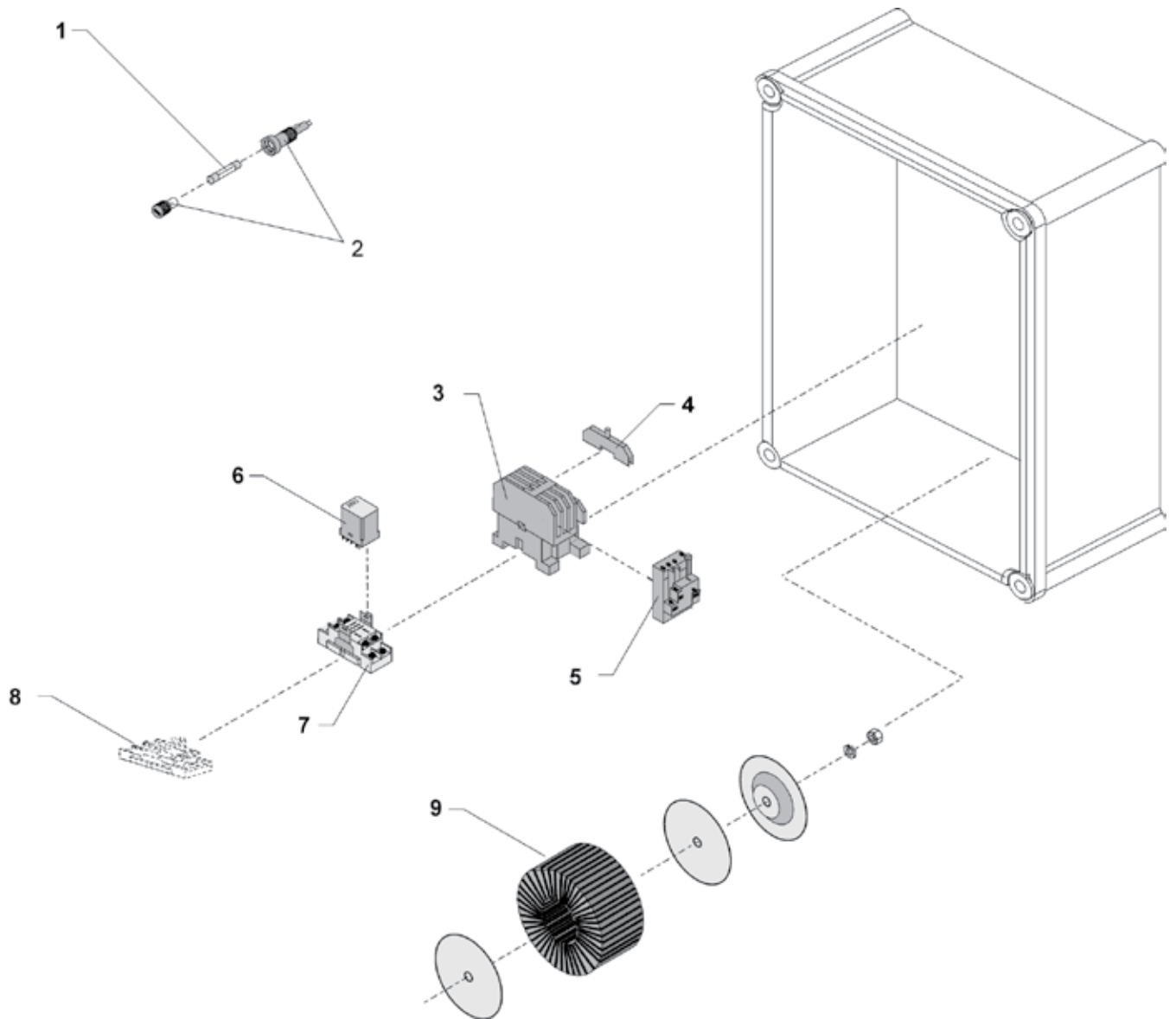
<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Speed Lever	150N-47M
2.	Disc w/ arrow	30N-47.10
3.	White Clamp	30N-47.20
4.	Black Knob	STA 3306
5.	Snap Ring	STA 3414
6.	Screw	STA 5247



Electrical Control Panel W150PL 1998-Present

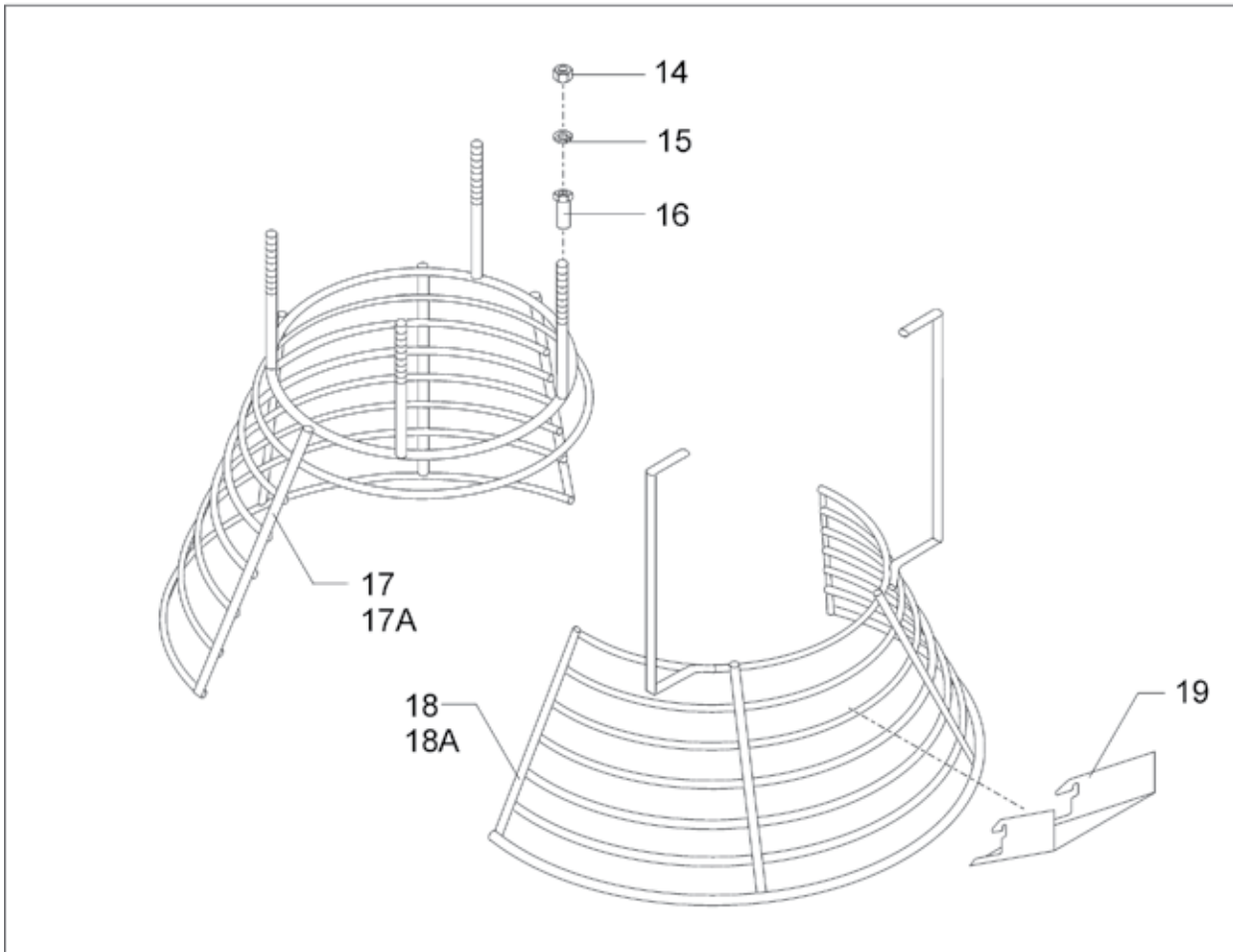
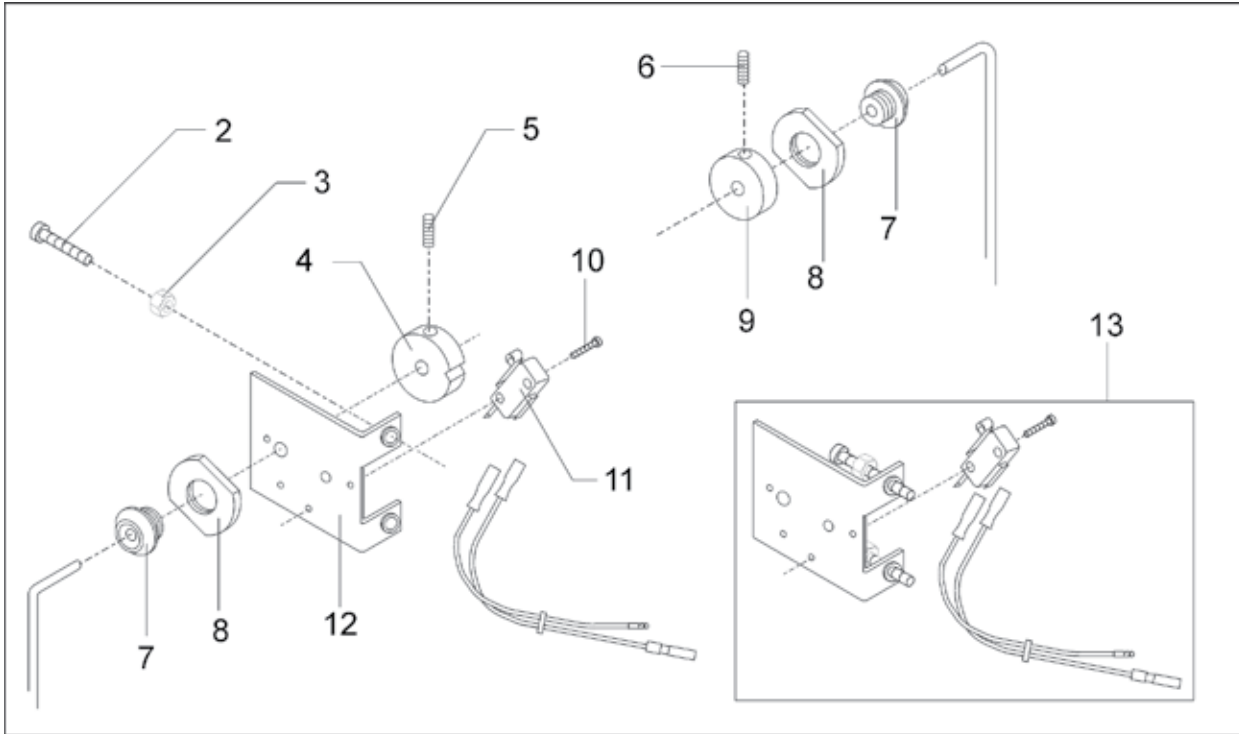
<u>Fig. No.</u>	<u>Description</u>	<u>W80-W100</u>
1.	Power Bowl Lift Switch (if applicable)	60-86.1
2.	Start Button complete	31-174.2
3.	Stop Button complete	31-174.3
4.	Timer (220v)	30-188.15
5.	Timer Scale 15 minute	30-190
6.	Nut	STA 5987
7.	Cable Inlet f/14/2 cable	STA 6483
8.	Cable Inlet f/14/4 cable	STA 3017
10.	Nut	STA 3038
11.	Nut	STA 3010
12.	Thermal Overload 220v*	20-88.24
12A.	Thermal Overload 480v*	20-88.21
13.	Auxiliary Switch*	20-88.47
14.	Screw	STA 5097
15.	Press Screw	STA 6483
16.	Contactor 220v*	100-88.5
16A.	Contactor 480v*	20-88.91
17.	Screw	STA 5232
18.	Ground Clamp	31-457
19.	Plastic Electrical Box	31-152
20.	Front Control Plate w/o Power Bowl Lift	31-149

**On versions produced from 2005 to present, these components are located in the rear power supply box, behind the rear access panel on the mixer frame. Refer to the following diagram.*



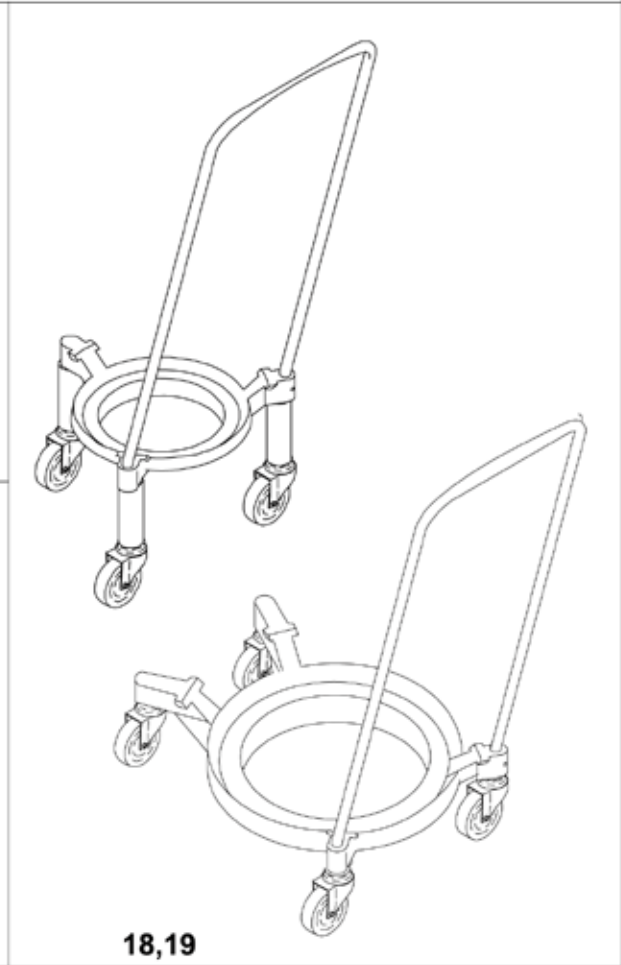
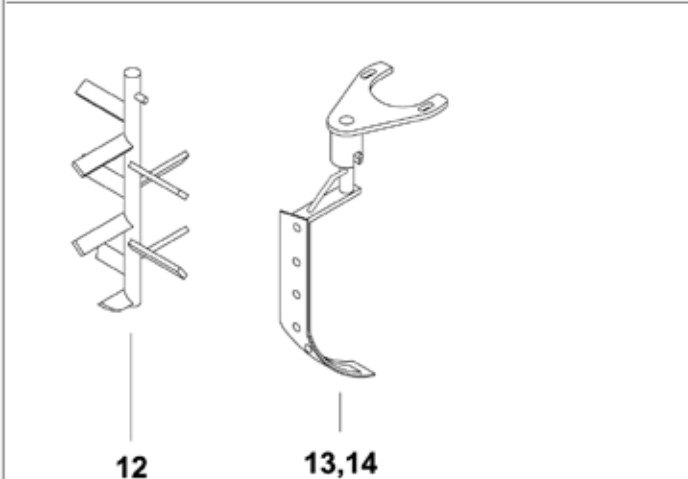
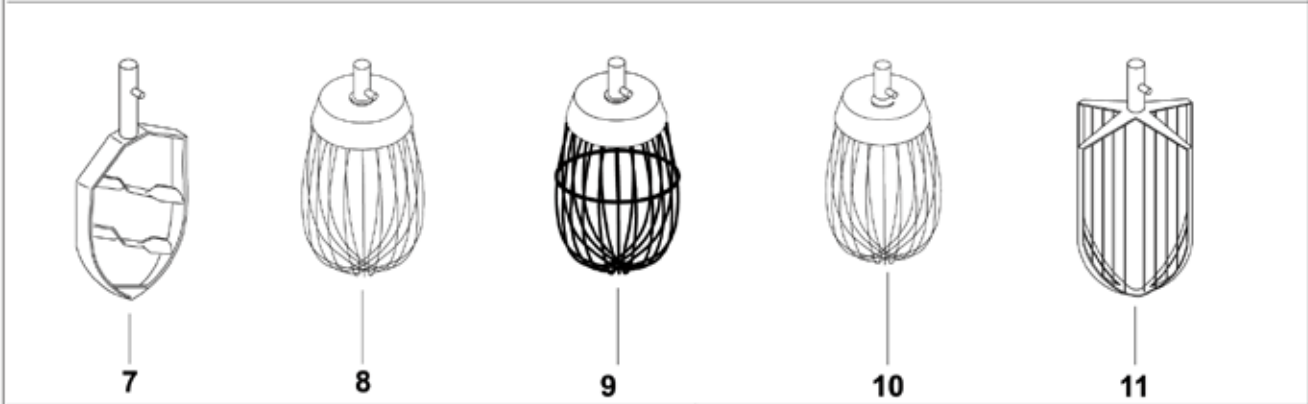
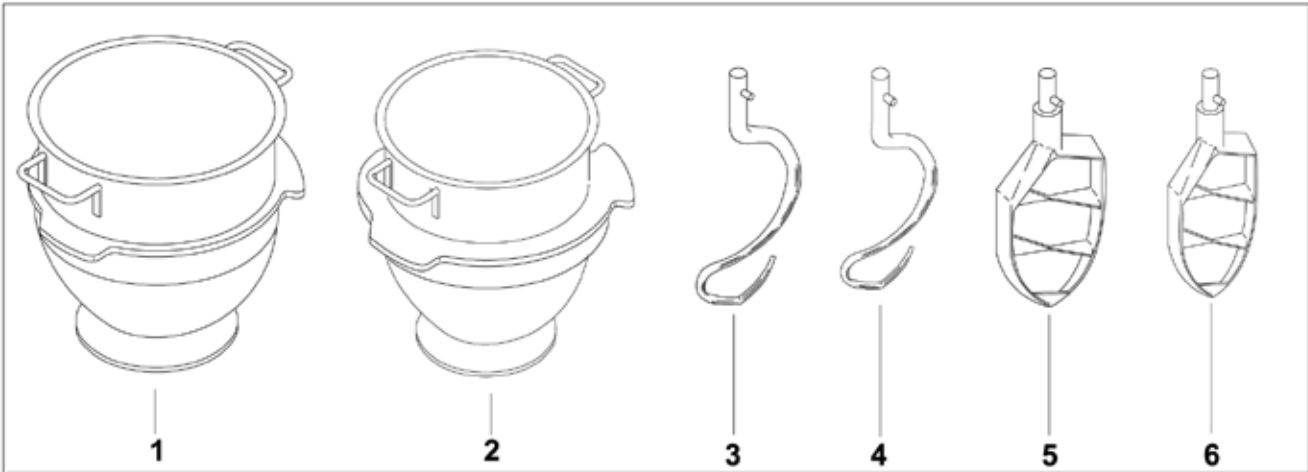
Electrical Power Supply W150PL 1998-Present

<u>Fig. No.</u>	<u>Description</u>	<u>W80-W100</u>
1.	Fuse	20E-418
2.	Fuse Holder	20E-416
3.	Contactor 220V	100-88.5
3A.	Contactor 480V	20-88.91
4.	Auxiliary Switch	20-88.47
5	Thermal Overload 11-16 Amps	20-88.24
5A.	Thermal Overload 4-6.2 Amps	20-88.21
6.	Relay 24VDC IDEC RH1B-U	140E-420
7.	Relay Socket	140E-421
8.	LINAK Power Bowl Lift Control	100N-86.01
9.	Transformer 220v/31v	60E-430.1
10.	Rectifier	150E-425



Bowl Screen W150PL

<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	Bowl Screen Kit W150PL	225/150N
2.	Screw	STA 5250
3.	Nut	STA 5819
4.	Bowl Screen Cam notched	56SN30-22
5.	Set Screw f/cam	STA 5665
6.	Set Screw f/keeper	STA 5665
7.	Bushing	56SN30-21
8.	Nut f/ bushing	56SN30-24
9.	Cam	56SN30-23
10.	Screw f/microswitch	STA 5251
11.	Microswitch	56SN20-30
12.	Bracket f/ microswitch	56SN30-13
13.	Microswitch bracket assembly	56P30-15
14.	Nut	STA 5810
15.	Lockwasher	STA 6056
16.	Nut f/bowl screen adjustment	56G30-26
17.	Rear bowl screen W150PL	225/150NR
18.	Front bowl screen W150PL	225/150NF
19.	Ingredient Chute	227

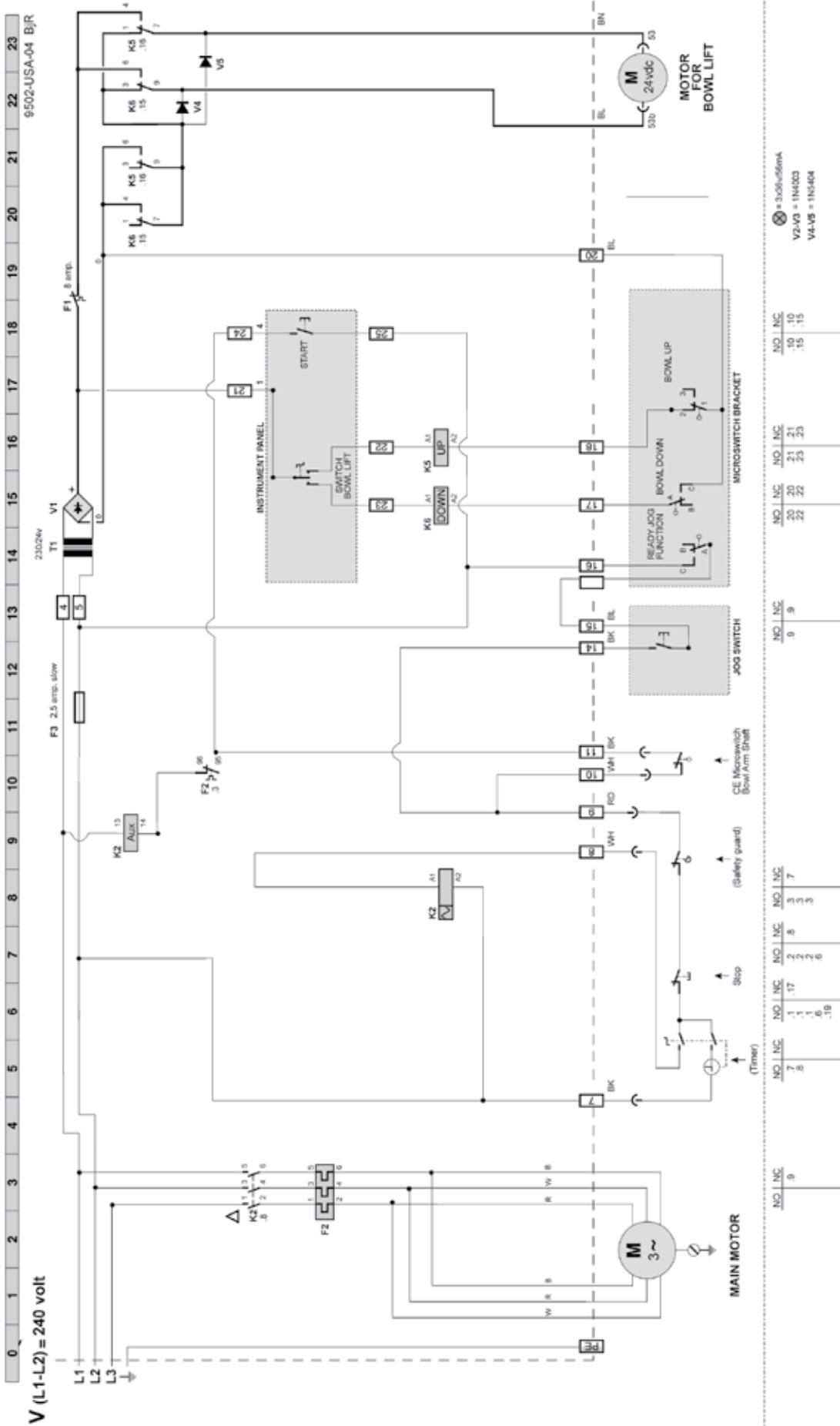


Accessories W150PL

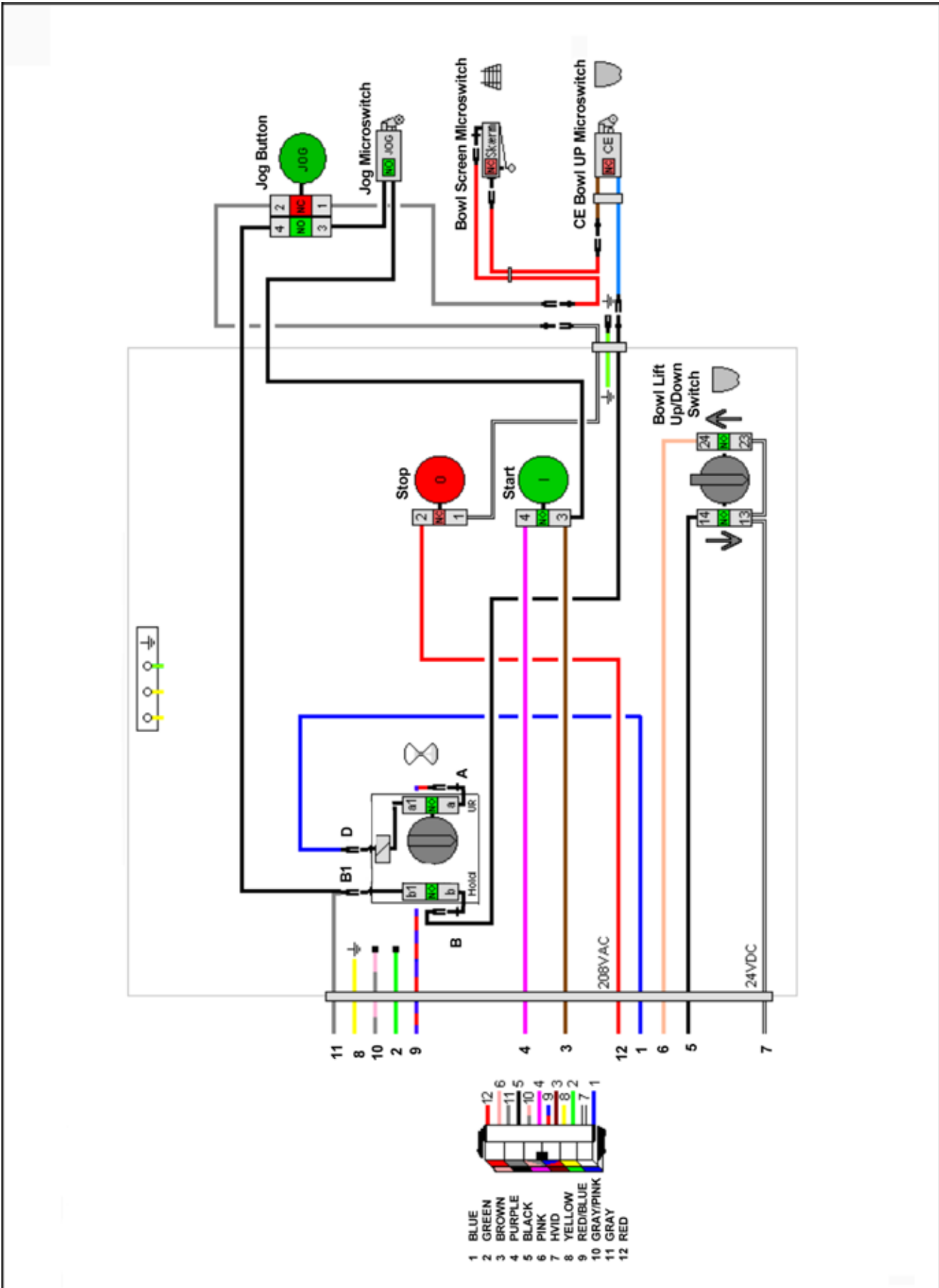
<u>Fig. No.</u>	<u>Description</u>	<u>W150PL</u>
1.	S/S Bowl 150 Qt.	203/150
2.	S/S Bowl 80 Qt.	203/80BN
3.	Dough Hook 150 Qt.	213/150N
4.	Dough Hook 80 Qt.	213/80BN
5.	Flat Beater 150 Qt.	205/150N
6.	Flat Beater 80 Qt.	205/80BN
7.	S/S Flat Beater 150 Qt.	204/150N
8.	Wire Whip 150 Qt.	207/150N
9.	Reinforced Wire Whip 150 Qt.	221/150N
10.	Wire Whip 80 Qt.	207/80BN
11.	S/S Wing Whip 150 Qt.	210/150N
12.	Powder Mixing Tool 150 Qt.	220/150N
13.	Bowl Scaper 150 Qt.	224/150N
14.	Bowl Scaper 80 Qt .	224/80BN
18.	Bowl Truck f/80 Qt. Bowl	215/80BN
19.	Bowl Truck f/150 Qt. Bowl (Dual castors)	215/150N

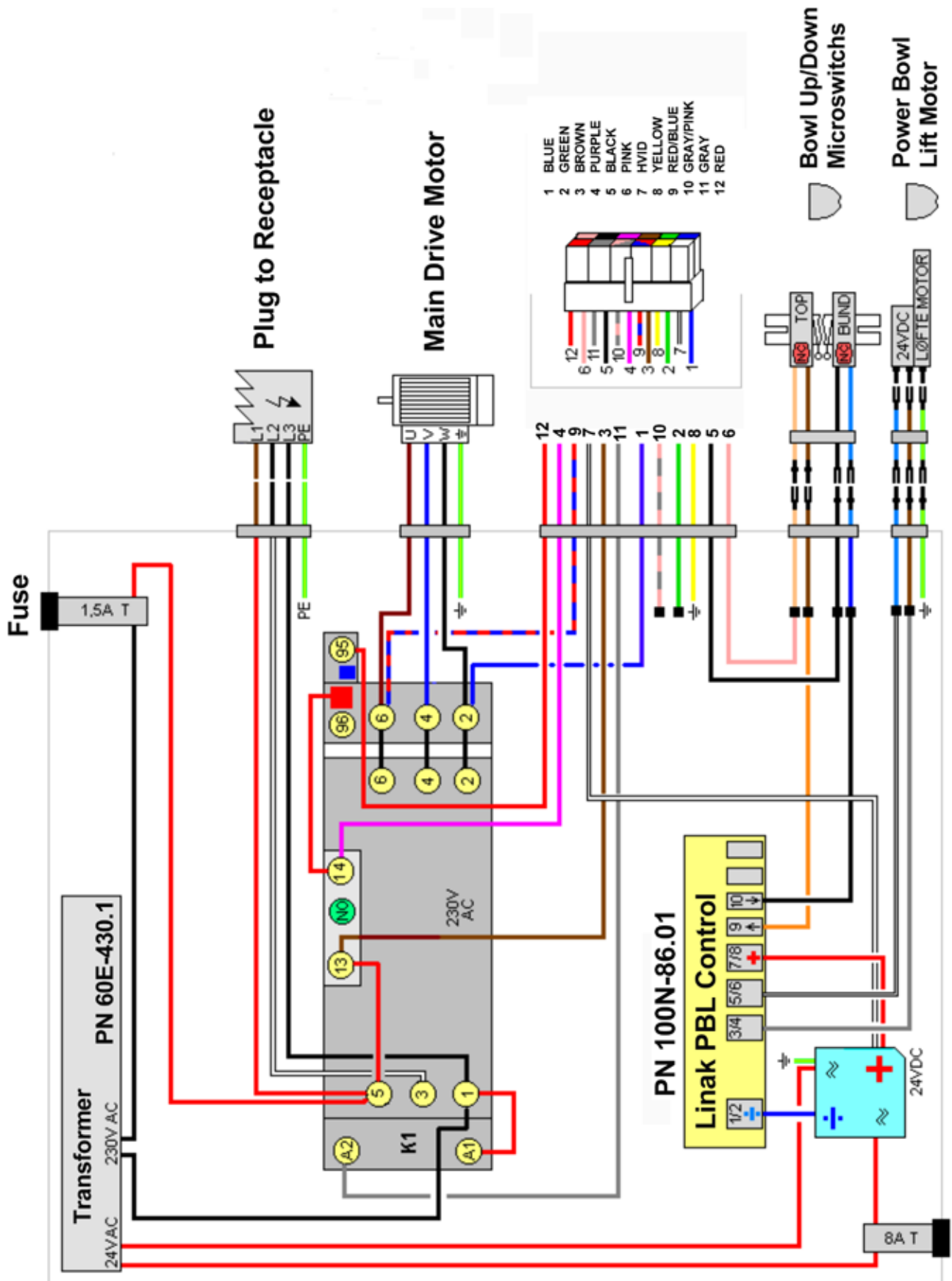
W150N USA MK-I

1993-2004
DELTA START CONVERSION



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