



MARKET FORGE

F-P, F-L, FT-P AND FT-L SERIES 2/3 JACKETED DIRECT STEAM TILTING & STATIONARY KETTLES PARTS AND SERVICE MANUAL

EFFECTIVE NOVEMBER 2, 2015

Superseding All Previous Parts Lists.

The Company reserves the right to make substitution in the event that items specified are not available.

ERRORS: Descriptive and/or typographic errors are subject to correction.

MARKET FORGE

Telephone: (802) 658-6600 Fax: (802) 860-3732 www.marketforge.com

P/N 14-0340 Rev A

TABLE OF CONTENTS

| | |
|--|----|
| SAFETY VALVE MAINTENANCE AND TESTING | 3 |
| TROUBLESHOOTING..... | 4 |
| ILLUSTRATED PARTS LIST | |
| KETTLES | 5 |
| TILT CONSOLE EXPLODED VIEW | 6 |
| DRAW OFF VALVE..... | 8 |
| SPRING ASSIST HINGE ASSEMBLY | 10 |
| HINGE ASSEMBLY (STATIONARY KETTLES)..... | 12 |

SAFETY VALVE MAINTENANCE AND TESTING



CAUTION

Under normal operating conditions a “try lever test” should be performed every two months. Under severe service conditions, or if corrosion and/or deposits are noticed within the valve body, testing must be performed more often. A “try lever test” should also be performed at the end of any non-service period.



CAUTION

Hot, high pressure fluid may be discharged from body drain and vent during “try lever” test. Care must be taken to avoid any bodily contact.



CAUTION

High sound levels may be experienced during “try lever” test. Wear proper safety equipment and exercise extreme care! Test at, or near, half of the operating pressure by holding the test lever fully open for at least two seconds to flush the valve seat free of sediment and debris. Then release lever and permit the valve to snap shut.

If lift lever does not activate, or there is no evidence of discharge, turn off equipment immediately and contact a licensed contractor or qualified service personnel.

TROUBLESHOOTING

DRAW-OFF VALVE LEAKS

If a leak occurs through the valve stem, replace the “O” ring. If the leak can be attributed to faulty sealing occurring between the stem disc and valve seat, then quite often this problem can be corrected by cleaning off the dried on food residue with an extremely fine emery cloth or the rubber vulcanized stem piece has been damaged and must be replaced.



NOTICE

Draw-off valve has a vulcanized rubber coated stem for better sealing. Do not over tighten. This may cause the rubber to pull away from stem and permanently damage it.

EXTREMELY SLOW COOKING TIME

If the cooking time is abnormally slow then the difficulty may be due to insufficient steam pressure and/or volume. First determine that pressure on incoming steam line at kettle is within 5 PSI of rated kettle pressure. Note that pressures approaching the rated kettle pressure are liable to set off the safety relief valve. If required pressure is available to kettle, then possibly volume of steam is not sufficient. Minimum 3/4" pipe size is required to the kettle but if the steam generating source is at a great distance from the kettle, larger pipe will be required. Finally, the core of the steam supply pipe may have debris or scalants that impede steam flow and will require disassembly and inspection.

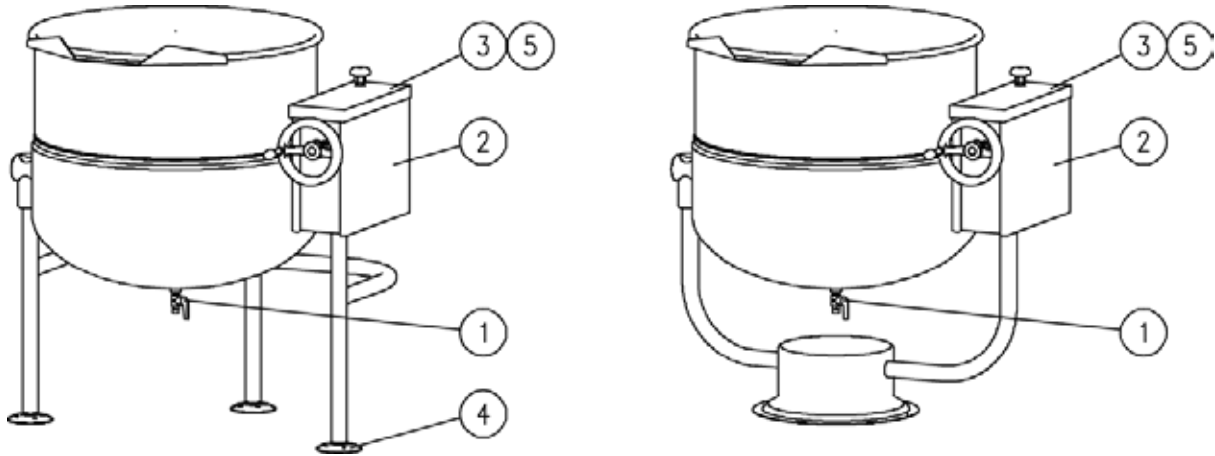
AIR VENTING

It is recommended that the “optional” steam trap assembly be installed. This should be plumbed to the exit end of the kettle. The thermostatic trap is a mechanical device that closes on high temperature and opens when the temperature drops, allowing the water which formed from condensate to exhaust but retain the steam under pressure.

The temperatures required for the cooking process to function adequately must be greater than the boiling point of the liquid food product, that is, water. The greater the steam pressure used, the higher the temperature and the quicker the cooking process. For example, steam pressurized at 30 p.s.i. reaches a temperature of 274 degrees Fahrenheit (135 degrees Celsius). Since air is an unsuitable media through which heat may be transferred, the air should be exhausted from the jacket by opening the pressure relief valve until the air has been completely replaced by pressurized steam.

In the initial stages of the cooking process when the steam comes in contact with the cold kettle bowl surface, it condenses and forms a large amount of water. The condensate water must be removed from the kettle jacket in order for the kettle to function adequately. The ball valve located at the base of the kettle jacket may be opened to remove the water. It may be necessary to repeat this procedure several times depending on the number of batches being cooked as each batch will create condensate. If the kettle appears to be slow in heating, this would indicate that there is water in the jacket. Open ball valve and drain. Close valve and commence operation of kettle.

KETTLES

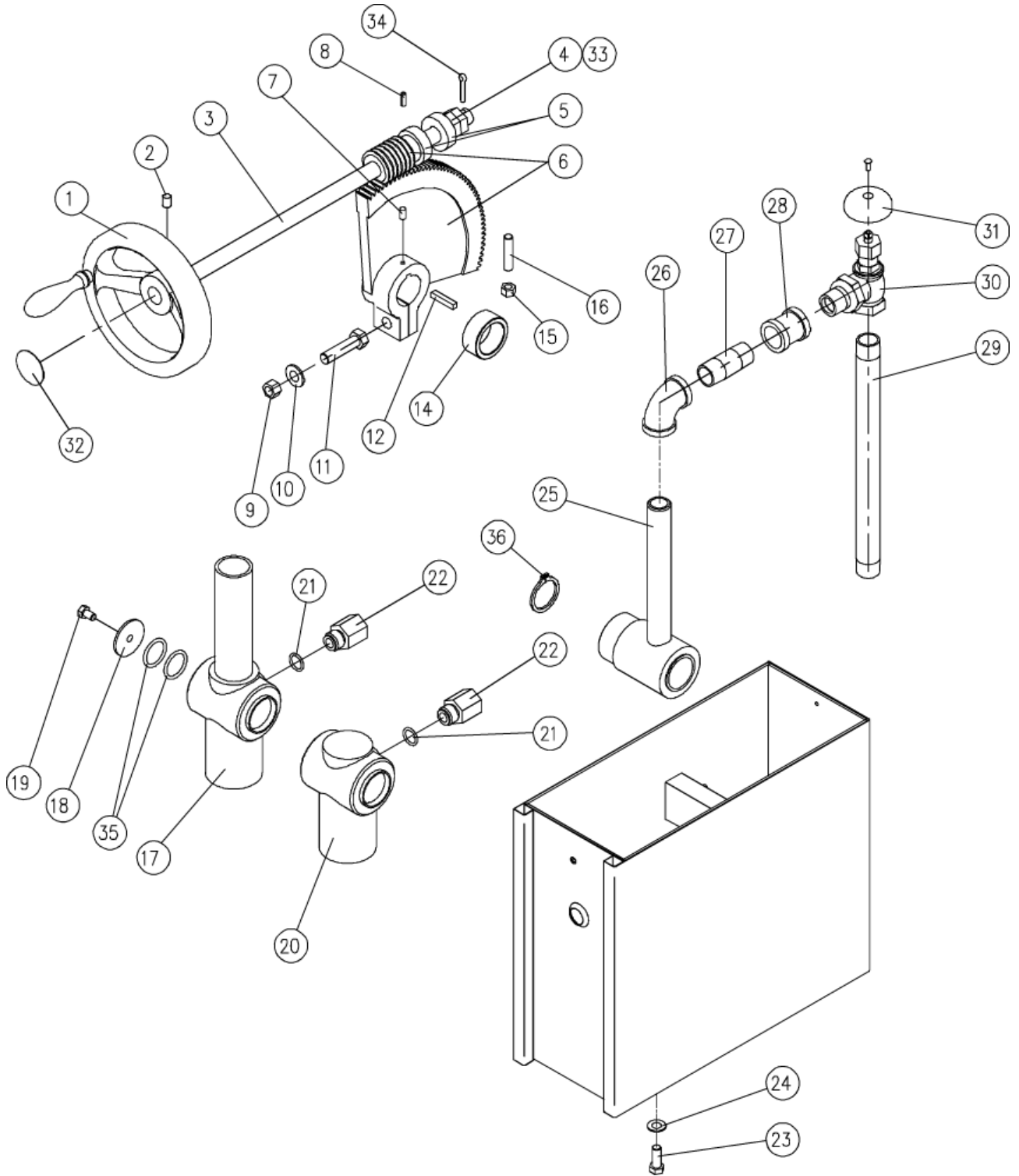


| ITEM | PART NO. | DESCRIPTION | QTY |
|------|--------------|---------------------------------|-----|
| 1 | 97-5156 | BALL VALVE | 1 |
| 2 | 97-6491 | TILT CONSOLE | 1 |
| 3 | 97-6492 | CONSOLE COVER | 1 |
| 4 | 97-5032 | ADJUSTABLE FLANGED FOOT | 3 |
| 5 | 97-6739 | SCREW, 10-32 x 1/2" | 1 |
| *6 | 97-5592/5045 | RELIEF VALVE, 35 PSI | 1 |
| **6 | 97-5009 | RELIEF VALVE, 50 PSI (OPTIONAL) | 1 |
| *7 | 97-6368 | DOWN TUBE FOR RELIEF VALVE | 1 |

* NOT SHOWN.

** SELECT AS REQUIRED.

TILT CONSOLE EXPLODED VIEW



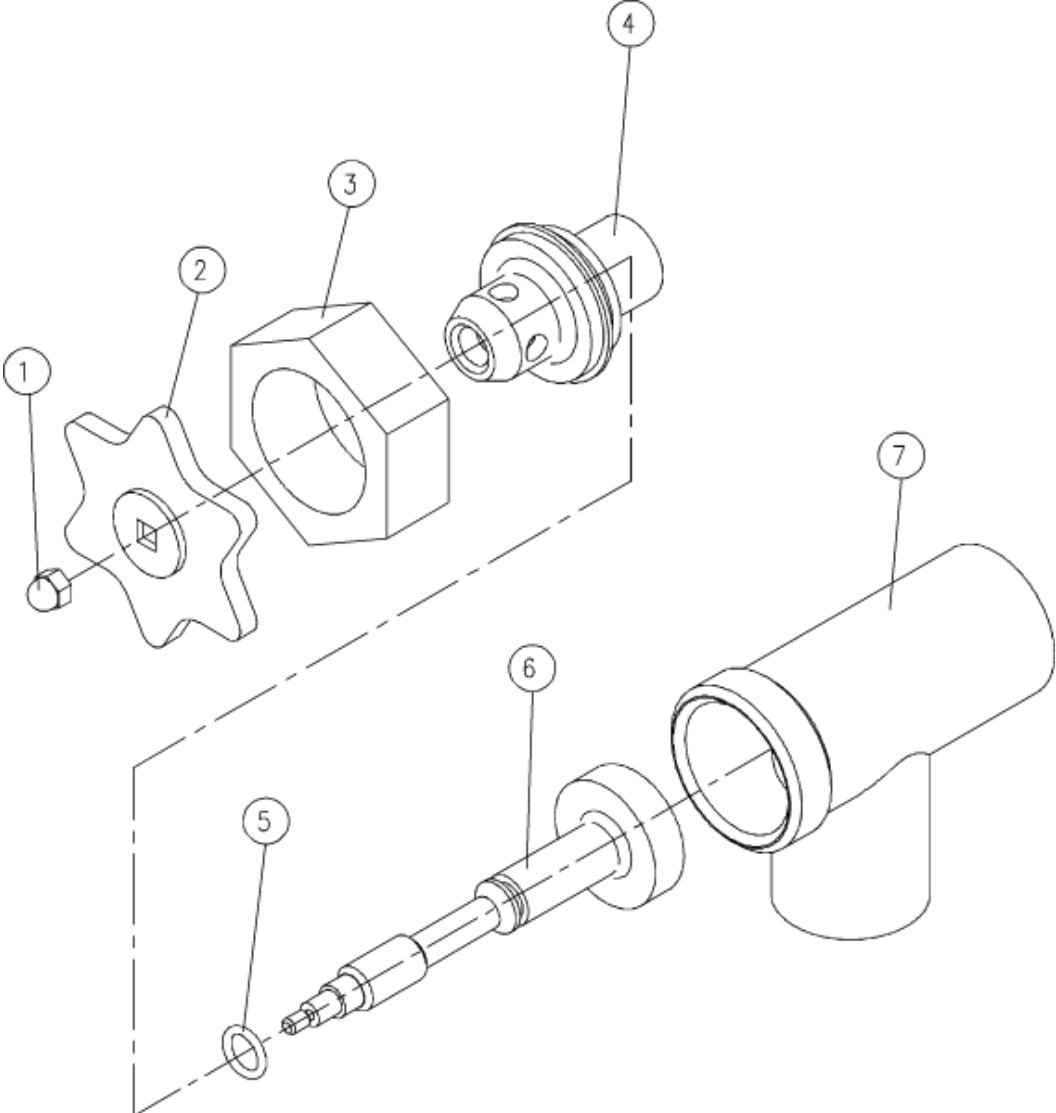
TILT CONSOLE EXPLODED VIEW

| ITEM | PART NO. | DESCRIPTION | QTY |
|--------|--------------|---|-----|
| 1 | 97-5090/5713 | HANDWHEEL | 1 |
| 2 | 97-5091 | SET SCREW, 3/8 – 16 x 1/2" | 1 |
| 3 | 97-5092 | TILT SHAFT | 1 |
| 4 | 97-5096 | JAM NUT, 3/4 - 16 UNF | 2 |
| 5 | 97-5909 | THRUST BEARING | 2 |
| 6 | 97-5882 | SEGMENT GEAR & WORM GEAR KIT (7 THRU 12) | 1 |
| 7 | 97-5416 | SET SCREW, 1/4 – 20 x 1/2" | 1 |
| 8 | 97-5093 | TENSION PIN, 3/16" OD x 1-1/4" L | 1 |
| 9 | 97-7248 | NUT, 1/2 – 13 UNC | 1 |
| 10 | 97-7247 | LOCK WASHER, 1/2" | 1 |
| 11 | 97-7246 | BOLT, 1/2 – 13 UNC x 2" | 1 |
| 12 | 97-6493 | KEY, 1/4" | 1 |
| *13 | 97-6405 | "O" RING LUBRICATION | 1 |
| 14 | 97-5099 | SPACER | 1 |
| 15 | 97-5584 | NUT, 3/8 – 16 UNC | 1 |
| 16 | 97-5583 | SET SCREW, 3/8 – 16 UNC x 1 – 3/4" | 1 |
| *** 17 | 97-5179 | OUTBORE BEARING COMPLETE w/EXTENTION (USED ON SPRING ASSIST COVER ONLY) | 1 |
| 18 | 97-5368 | STAINLESS STEEL WASHER | 1 |
| 19 | 97-5883 | BOLT | 1 |
| 20 | 97-5177 | OUTBORE BEARING | 1 |
| 21 | 97-5366 | "O" RING | 1 |
| 22 | 97-5367 | BRASS FITTING | 1 |
| 23 | 97-7324 | BOILT, 3/8 – 16 UNC x 1" | 4 |
| 24 | 97-7325 | LOCK WASHER, 3/8" | 4 |
| 25 | 97-5171 | BLOCK BEARING | 1 |
| 26 | 97-5877 | 90° ELBOW, 3/4" | 1 |
| 27 | 97-5878 | NIPPLE, 3/4 x 2-1/2" L | 1 |
| 28 | 97-5879 | COUPLING, 3/4 x 2-1/2" L | 1 |
| 29 | 97-6495 | PIPE-STEAM SUPPLY, 3/4" x 12-1/2" L | 1 |
| 30 | 97-5030/5362 | CONTROL VALVE, 3/4" | 1 |
| 31 | 97-5306 | CONTROL VALVE KNOB | 1 |
| 32 | 97-6494 | DECAL – TILT | 1 |
| 33 | 97-5820 | WASHER, 3/4" ID x 1-1/4" OD | 1 |
| 34 | 97-7214 | COTTER PIN, STAINLESS STEEL, 3/16" x 1" L | 1 |
| 35 | 97-5110 | "O" RING | 4 |
| 36 | 97-5546 | RETAINING RING | 1 |

* NOT SHOWN.

*** SPECIFY MODEL.

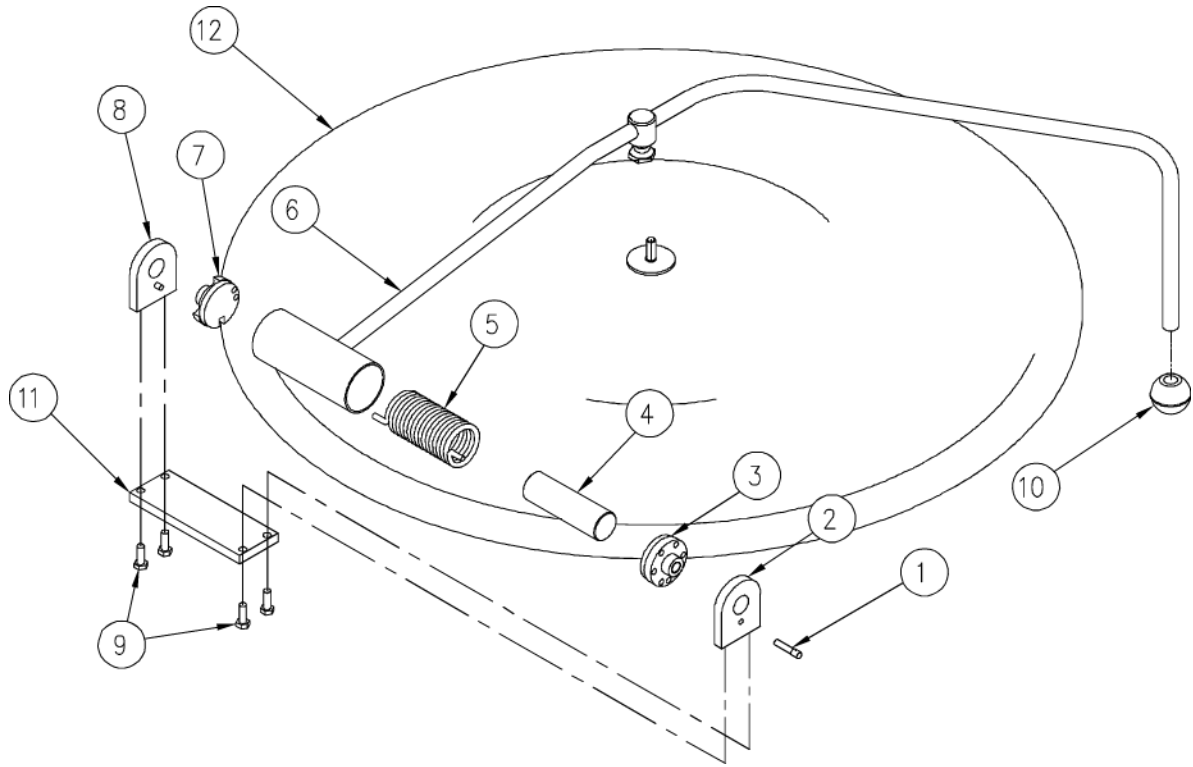
DRAW OFF VALVE



DRAW OFF VALVE

| ITEM | PART NO. | DESCRIPTION | QTY |
|------|--------------------------|--------------------------------|-----|
| | 97-5062 | 1-1/2" DRAW OFF VALVE ASSEMBLY | 1 |
| 1 | 98-6155 | ACORN NUT 10-24 UNC | 1 |
| 2 | 97-5566 | HANDLE, STAINLESS STEEL | 1 |
| 3 | 97-5068 | GLAND NUT | 1 |
| 4 | 97-507 | BONNET | 1 |
| 5 | 97-50771 | "O" RING | 1 |
| 6 | 97-5074 | STEM ASSEMBLY | 1 |
| 7 | 97-6496 | VALVE BODY | 1 |
| | 97-5063 | 2" DRAW OFF VALVE ASSEMBLY | 1 |
| 1 | 98-6155 | ACORN NUT 10-24 UNC | 1 |
| 2 | 97-5566 | HANDLE, STAINLESS STEEL | 1 |
| 3 | 97-5069 | GLAND NUT | 1 |
| 4 | 97-5072 | BONNET | 1 |
| 5 | 97-5078 | "O" RING | 1 |
| 6 | 97-5075A | STEM ASSEMBLY | 1 |
| 7 | 98-6156 | VALVE BODY | 1 |
| | 97-5605 | 3" DRAW OFF VALVE ASSEMBLY | 1 |
| 1 | 97-5066 | ACORN NUT 10-24 UNC | 1 |
| 2 | 97-5067 | HANDLE, STAINLESS STEEL | 1 |
| 3 | 97-5068 | GLAND NUT | 1 |
| 4 | 97-5073 | BONNET | 1 |
| 5 | 97-5079 | "O" RING | 1 |
| 6 | 97-5076 | STEM ASSEMBLY | 1 |
| 7 | 97-6497 | VALVE BODY | 1 |

SPRING ASSIST HINGE ASSEMBLY

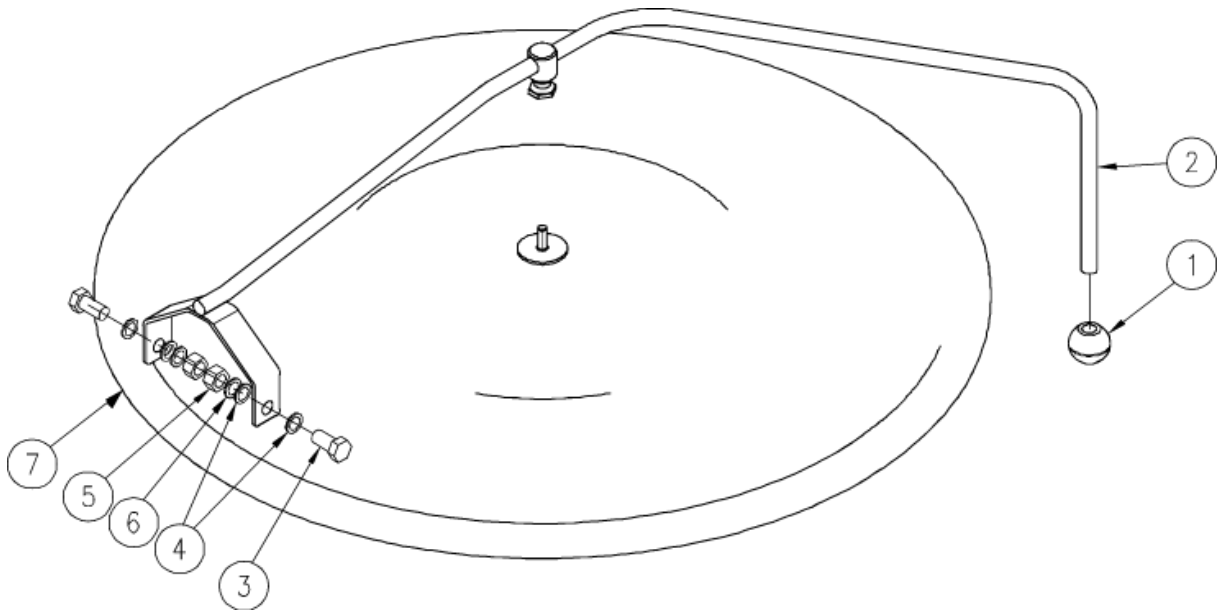


SPRING ASSIST HINGE ASSEMBLY

| ITEM | PART NO. | DESCRIPTION | QTY |
|------|----------------------------------|---------------------------------------|-----|
| | 97-5464 | HINGE ASSEMBLY | 1 |
| 1 | 97-5352 | LOCK PIN | 1 |
| 2 | 97-5343 | END LOCK PLATE | 1 |
| 3 | 98-5354 | STATIONARY DISC | 1 |
| 4 | 98-6074/ 97-5355 | CORE | 1 |
| 5 | 97-5160 | SPRING | 1 |
| **6 | 97-5585 | HANDLE ASSEMBLY, 20 GALLON KETTLE | 1 |
| | 97-5586 | HANDLE ASSEMBLY, 30 GALLON KETTLE | 1 |
| | 97-6388 | HANDLE ASSEMBLY, 40 GALLON KETTLE | 1 |
| | 97-5059 | HANDLE ASSEMBLY, 60 GALLON KETTLE | 1 |
| | 97-5587 | HANDLE ASSEMBLY, 80 GALLON KETTLE | 1 |
| | 97-5588 | HANDLE ASSEMBLY, 100 GALLON KETTLE | 1 |
| 7 | 97-6391/5355 | ROTARY DISC | 1 |
| 8 | 97-5356 | END STOP PLATE | 1 |
| 9 | 97-5349 | CAP SCREWS, 1/4-20 x 3/4 | 4 |
| 10 | 97-5008 | KNOB | 1 |
| 11 | 97-7271 | MOUNTING PLATE – TILTING KETTLES ONLY | 1 |
| **12 | 97-5471 | COVERS, 20 GALLON KETTLES | 1 |
| | 97-5723 | COVERS, 30 GALLON KETTLES | 1 |
| | 97-5053 | COVERS, 40 GALLON KETTLES | 1 |
| | 97-5054 | COVERS, 60 GALLON KETTLES | 1 |
| | 97-5594 | COVERS, 80 GALLON KETTLES | 1 |
| | 97-5595 | COVERS, 100 GALLON KETTLES | 1 |

** SELECT AS REQUIRED.

HINGE ASSEMBLY (STATIONARY KETTLES)



| ITEM | PART NO. | DESCRIPTION | QTY |
|------|--------------|---|-----|
| 1 | 97-5008 | KNOB | 1 |
| **2 | 97-5596 | HANDLE ASSEMBLY, 20 GALLON KETTLE | 1 |
| | 97-5597/5722 | HANDLE ASSEMBLY, 30 GALLON KETTLE | 1 |
| | 97-5598 | HANDLE ASSEMBLY, 40 GALLON KETTLE | 1 |
| 3 | 97-5200 | HEX BOLT, 1/2 – 20 UNF x 1" STAINLESS STEEL | 2 |
| 4 | 97-7326 | FIBRE WASHER | 4 |
| 5 | 97-5601 | HEX NUT, 1/2 – 20 UNF, STAINLESS STEEL | 2 |
| 6 | 97-7200 | SPLIT LOCK WASHER, 1/2" STAINLESS STEEL | 2 |
| 7 | 97-5471 | COVER, 20 GALLON KETTLE | 1 |
| | 97-5723 | COVER, 30 GALLON KETTLE | 1 |
| | 97-5053 | COVER, 40 GALLON KETTLE | 1 |

** SELECT AS REQUIRED