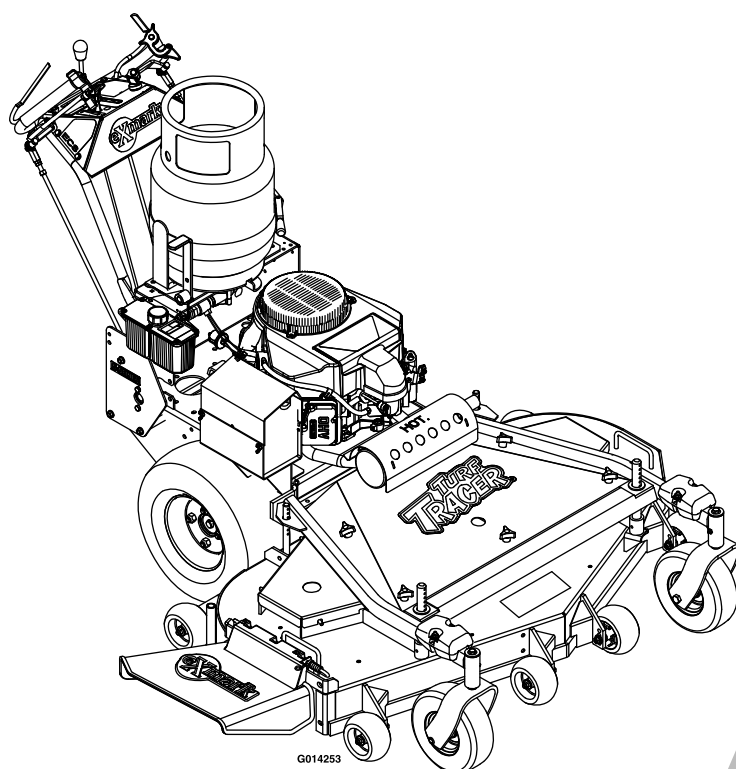




# **TURF TRACER® S-SERIES LP**

Model No. TTS20PKAE523—Serial No. 920000 and Up



G014253

# **Parts Manual**

# Ordering Replacement Parts

To order replacement parts, please supply the part number, the quantity, and the description of each part desired.

## Understanding Reference Numbers

Each identified part in an illustration has a reference number. The reference number for a part also appears in the parts list, along with other information about the part.

This catalog uses two special reference number formats, one to indicate parts in a service assembly and another to indicate the quantity of a given part in an illustration.

## Service Assembly Reference Numbers

Parts in service assemblies have reference numbers in the form a:b. The a represents the reference number of the entire service assembly and the b represents a sequential number unique to each part within the service assembly.

For example, a wheel assembly might be identified by reference number 6, the tire by 6:1, the valve by 6:2, and the wheel by 6:3. When you order the assembly identified by reference number 6, you receive all parts identified by reference numbers 6:1, 6:2, and 6:3. However, you may also order any part individually. Reference numbers of this type appear in illustration and in parts lists.

## Reference Numbers Indicating Quantity

In an illustration, if a reference number indicates more than one part, the reference number has the form nX y. The n represents the quantity of the part, the X is the multiplication symbol, and the y represents the reference number.

For example, in an illustration, the reference number 2X 37 means that two of the parts identified by reference number 37 are indicated.

# List of Abbreviations

**AR:** as required

**ASM:** assembly

**BBC:** blade brake control

**BHTF:** button head thread forming

**CARR:** carriage

**CCW:** counter clockwise

**CW:** clockwise

**DEG:** degrees

**DPA:** Dual Point Adjustment

**ECM:** electronic control module

**EXT:** external

**FH:** flat head

**GA:** gauge

**HD:** heavy-duty

**HF:** hex flange

**HH:** hex head

**HHF:** hex head flange

**HHFTF:** hex head flange thread forming

**HJ:** hex jam

**HLH:** hex lag head

**HOC:** height-of-cut

**HSBH:** hex socket button head

**HSFH:** hex socket flat head

**HSH:** hex socket head

**HWH:** hex washer head

**HWHTF:** hex washer head thread forming

**HYD:** hydraulic

**LH:** left hand

**LP:** Liquid Propane

**NI:** nylon insert

**NPTF:** national pipe thread fine

**PFH:** phillips flat head

**PPH:** phillips pan head

**PPHTF:** phillips pan head thread forming

**PRH:** phillips round head

**PTH:** phillips truss head

**PTO:** power-take-off

**RH:** right hand

**ROPS:** roll-over protection system

**RRB:** rear roller brush

**SFH:** slotted fillister head

**SHH:** slotted hex head

**SHWH:** slotted hex washer head

**SPH:** slotted pan head

**SQH:** square head

**SRH:** slotted round head

**STD:** standard

**TAP:** self tapping

**TTH:** torx truss head

# Touch Up Paint

Exmark black touch up spray paint – gloss black.

Exmark red touch up paint (spray paint – P/N 1-850337 - .6 oz liquid bottle – P/N 103-9140).

**EXMARK PARTS PLUS**

***PARTS***

**OVERNIGHT**

**OR *FREE*\***

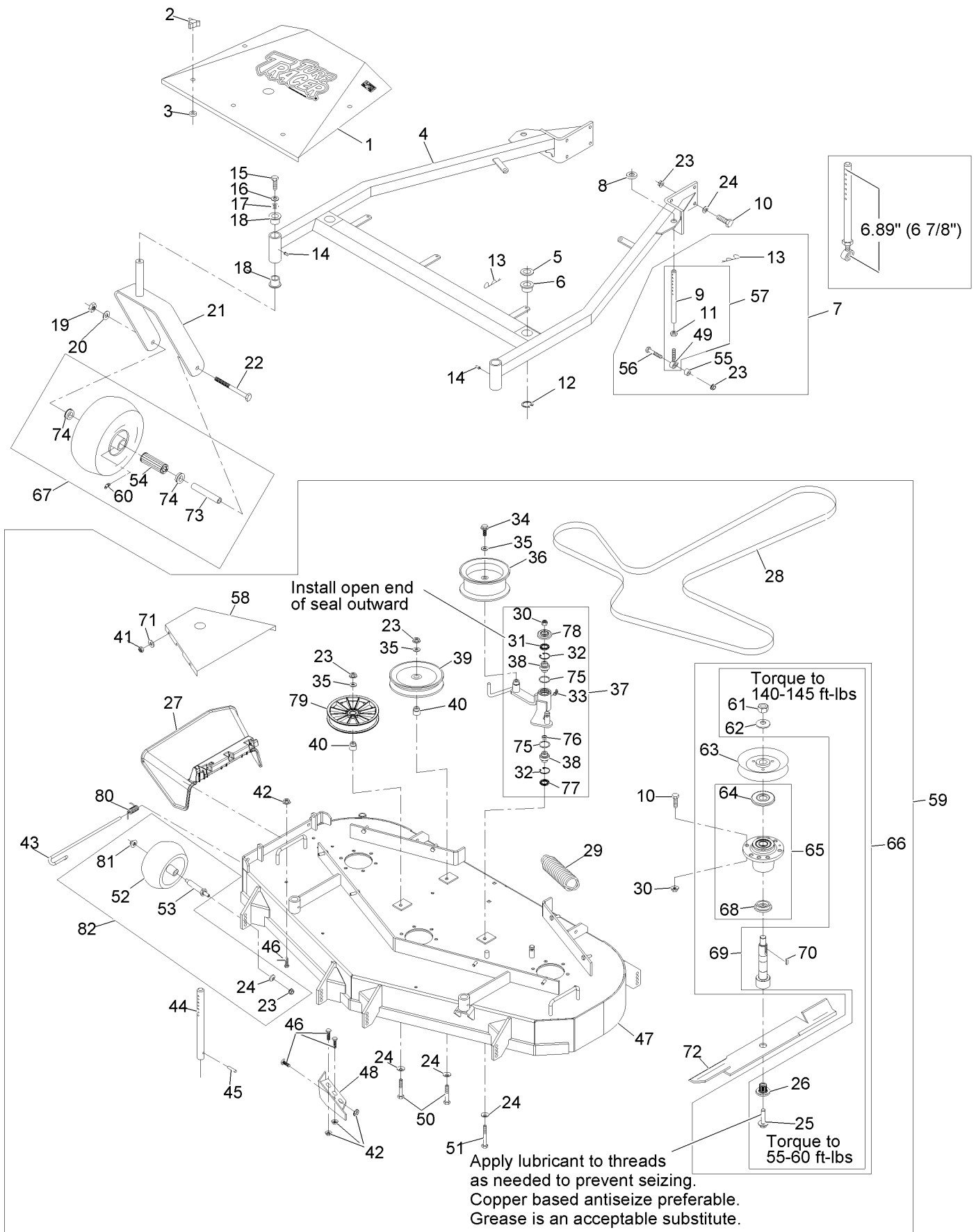
If your Exmark dealer does not have the Exmark part in stock, Exmark will get the parts to the dealer the next business day or the part will be FREE Guaranteed!! (Some restrictions apply. See your participating Exmark Dealer for details.)

# Contents

- Mower Deck Assembly ..... 6
- Engine Deck Assembly ..... 8
- Engine Deck Assembly (cont.) ..... 10
- ECS Upper Handles and Controls Assembly ..... 12
- Fuel Assembly ..... 14
- Electrical Assembly ..... 15
- Hydraulic Assembly ..... 16
- Decals ..... 18



# Mower Deck Assembly



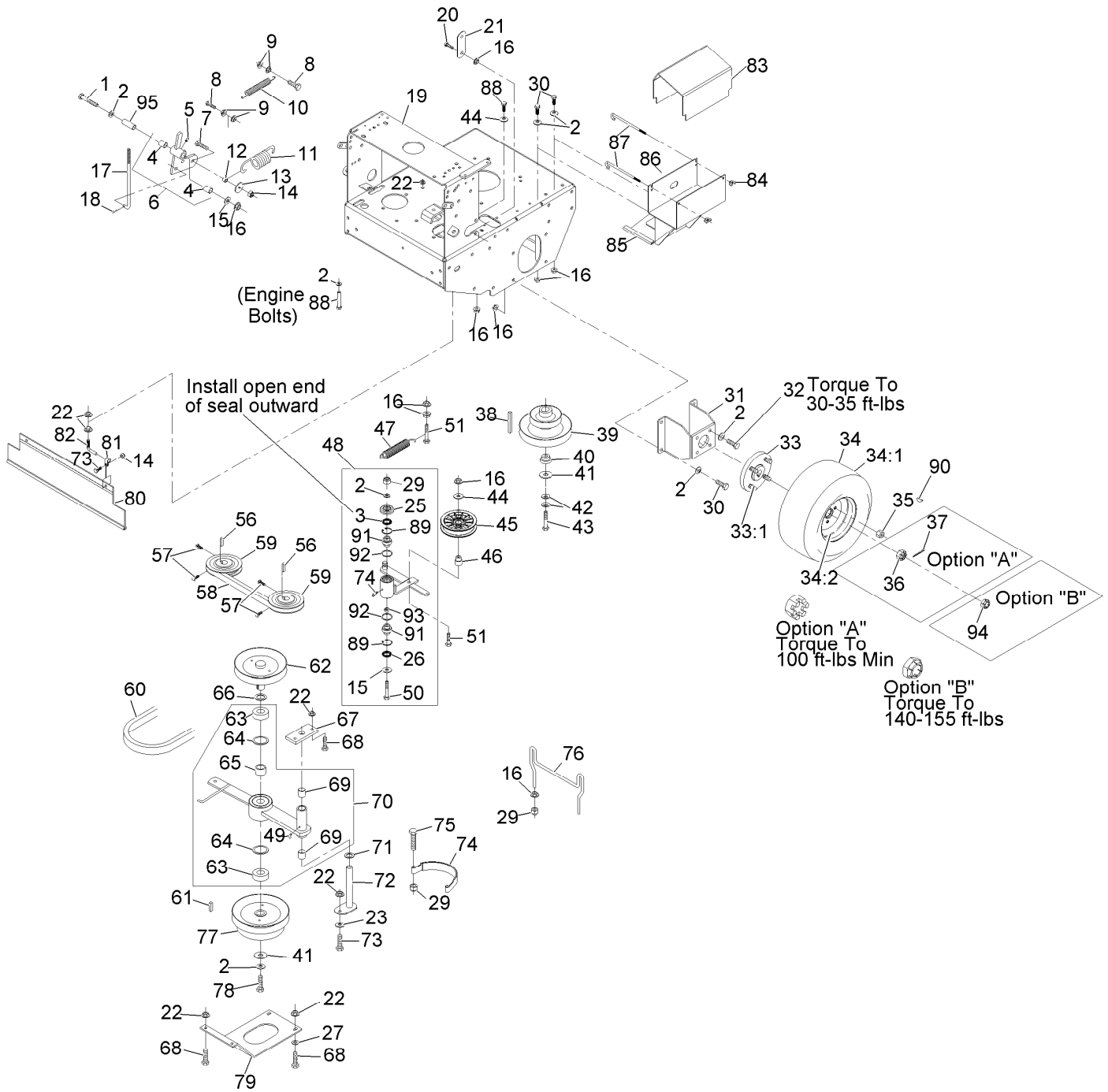
## Mower Deck Assembly (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                                | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                                                      |
|-------------|--------------------|-------------|---------------------------------------------------|-------------|--------------------|-------------|-------------------------------------------------------------------------|
| 1           | 116-2712           | 1           | Shield, Belt (1-413303-01)<br>W/Decals            | 46          | 322-2              | 6           | Screw-HH 5/16-18 X 5/8                                                  |
| 2           | 1-323385           | 5           | Knob-3 Prong                                      | 47          | 1-414385           | 1           | Wld, Deck (116-2458-01)<br>W/Decals, Discharge Baffle<br>& Support Rods |
| 3           | 1-323417           | 5           | Washer-Belt Shield                                | 48          | 116-2073-01        | 1           | Baffle, Discharge                                                       |
| 4           | 1-414311           | 1           | Wld, Support (1-412317-01)<br>W/Bushings & Decals | 49          | 1-613204           | 2           | Balljoint                                                               |
| 5           | 1-413425           | 2           | Spacer                                            | 50          | 323-13             | 2           | Screw-HH 3/8-16 X 2 3/4                                                 |
| 6           | 1-513336           | 2           | Bushing-Deck                                      | 51          | 98-5961            | 1           | Screw-HH 3/8-16 X 4 Gr8                                                 |
| 7           | 1-411532           | 2           | Kit, Support Link W/Pin                           | 52          | 1-603299           | 6           | Roller-Scalp, Anti                                                      |
| 8           | 1-323539           | 2           | Spacer-Blade Drive                                | 53          | 99-2842            | 6           | Spacer                                                                  |
| 9           | 1-413525           | 2           | Link, Rear Deck Support                           | 54          | 1-513809           | 2           | Bearing                                                                 |
| 10          | 323-7              | 26          | Screw-HH 3/8-16 X 1 1/4                           | 55          | 1-603050           | 2           | Spacer                                                                  |
| 11          | 3220-3             | 2           | Nut-Jam 3/8-24                                    | 56          | 323-9              | 2           | Screw-HH 3/8-16 X 1 3/4                                                 |
| 12          | 32120-33           | 2           | Ring-Retaining                                    | 57          | 1-414521           | 2           | Link, Assembly                                                          |
| 13          | 1-806009           | 4           | Hairpin-Cotter #206                               | 58          | 103-2971-01        | 2           | Shield, Belt                                                            |
| 14          | 302-52             | 2           | Zerk-1/8-27 Str                                   | 59          | 103-0322           | 1           | Asm, Deck Complete                                                      |
| 15          | 323-6              | 2           | Screw-HH 3/8-16 X 1                               | 60          | 302-61             | 2           | Zerk-45° 1/4-28                                                         |
| 16          | 3253-5             | 2           | Washer-Lock 3/8 Heavy                             | 61          | 3217-46            | 3           | Nut-Hex 3/4-16 Heavy                                                    |
| 17          | 1-373034           | 2           | Washer                                            | 62          | 103-2802           | 3           | Washer-Spring Disc 3/4                                                  |
| 18          | 1-303514           | 4           | Bearing-Flanged                                   | 63          | 1-413424           | 3           | Sheave W/ Hub ■                                                         |
| 19          | 3217-9             | 2           | Nut-Hex 1/2-13                                    | 64          | 103-1330           | 3           | Guard-Bearing Top ■                                                     |
| 20          | 3253-7             | 2           | Washer-Lock 1/2                                   | 65          | 103-8280           | 3           | Kit, Cutter Housing                                                     |
| 21          | 1-522143-01        | 2           | Wld, Caster                                       | 66          | 103-9081           | 3           | Asm, Cutter Housing<br>Complete                                         |
| 22          | 325-20             | 2           | Screw-HH 1/2-13 X 6                               | 67          | 103-2171           | 2           | Kit, Tire & Wheel Asm W/<br>Spacer                                      |
| 23          | 3290-357           | 18          | Nut-Whizlock 3/8-16                               | 68          | 103-2535           | 3           | Spacer-Guard Bottom                                                     |
| 24          | 98-5975            | 17          | Washer-Spring Disc 3/8                            | 69          | 103-9071           | 3           | Kit, Spindle ■                                                          |
| 25          | 109-9220           | 3           | Screw-Sems 1/2-20 X 2.19                          | 70          | 1-807268           | 3           | Key-Machine 1/4 X 3/16 X 1                                              |
| 26          | 103-3037           | 3           | Bushing,Splined                                   | 71          | 3256-3             | 8           | Washer-5/16 Std                                                         |
| 27          | 109-5151           | 1           | Deflector, Discharge                              | 72          | 103-6402           | 3           | Blade-Notched                                                           |
| 28          | 1-413308           | 1           | Belt, Deck Drive                                  | 72          | 103-6392           | 3           | Blade, Mulch 18.0 (.94 Hole)                                            |
| 29          | 103-3330           | 1           | Spring-Extension                                  | 72          | 103-6387           | 3           | Blade, Low Lift 18.0 (.94<br>Hole)                                      |
| 30          | 3296-39            | 19          | Nut-Nyloc 3/8-16                                  | 72          | 103-6382           | 3           | Blade, Solid 18.0 (.94 Hole)                                            |
| 31          | 103-3506           | 1           | Seal-Single Lip                                   | 72          | 103-6397           | 3           | Blade, Extreme 18.0 (.94<br>Hole)                                       |
| 32          | 32120-10           | 2           | Ring-Retaining                                    | 73          | 1-513547           | 2           | Spacer                                                                  |
| 33          | 302-40             | 1           | Zerk-90° 1/4-28                                   | 74          | 1-513810           | 4           | Bushing-Flanged                                                         |
| 34          | 3234-11            | 1           | Screw-HH Flg 3/8-16 X 1                           | 75          | 106-7159           | 2           | O-Ring                                                                  |
| 35          | 3256-24            | 3           | Washer-3/8 Sae                                    | 76          | 103-5677           | 1           | Spacer                                                                  |
| 36          | 1-413099           | 1           | Pulley-Idler                                      | 77          | 103-3505           | 1           | Seal-Double Lip                                                         |
| 37          | 103-8585           | 1           | Kit, Idler Arm (103-7356-03)<br>W/Brgs ●          | 78          | 103-2916           | 1           | Guard-Top                                                               |
| 38          | 103-3504           | 2           | Bearing-Spherical                                 | 79          | 109-0977           | 1           | Pulley,Idler 5"                                                         |
| 39          | 1-613098           | 1           | Pulley-Idler                                      | 80          | 116-0962           | 1           | Spring, Torsion                                                         |
| 40          | 1-413113           | 2           | Bushing-Idler                                     | 81          | 109-6658           | 4           | Nut-Nyloc 3/8-16 Flg                                                    |
| 41          | 3296-29            | 8           | Nut-Nyloc 5/16-18                                 | 82          | 103-4051           | 1           | Kit,Anti-Scalp Roller                                                   |
| 42          | 32128-20           | 6           | Nut-Whizlock 5/16-18                              |             |                    |             |                                                                         |
| 43          | 109-8854           | 1           | Pin-Chute                                         |             |                    |             |                                                                         |
| 44          | 1-603001           | 2           | Rod, Deck Support                                 |             |                    |             |                                                                         |
| 45          | 1-806332           | 2           | Rollpin 1/4 X 1 1/2                               |             |                    |             |                                                                         |

● Assembly also includes Washer and Screw

■ Apply Mobil HTS grease (P/N 103-5217 1.5 oz packet) (or a food-grade anti-seize). See operator s manual for locations.

# Engine Deck Assembly



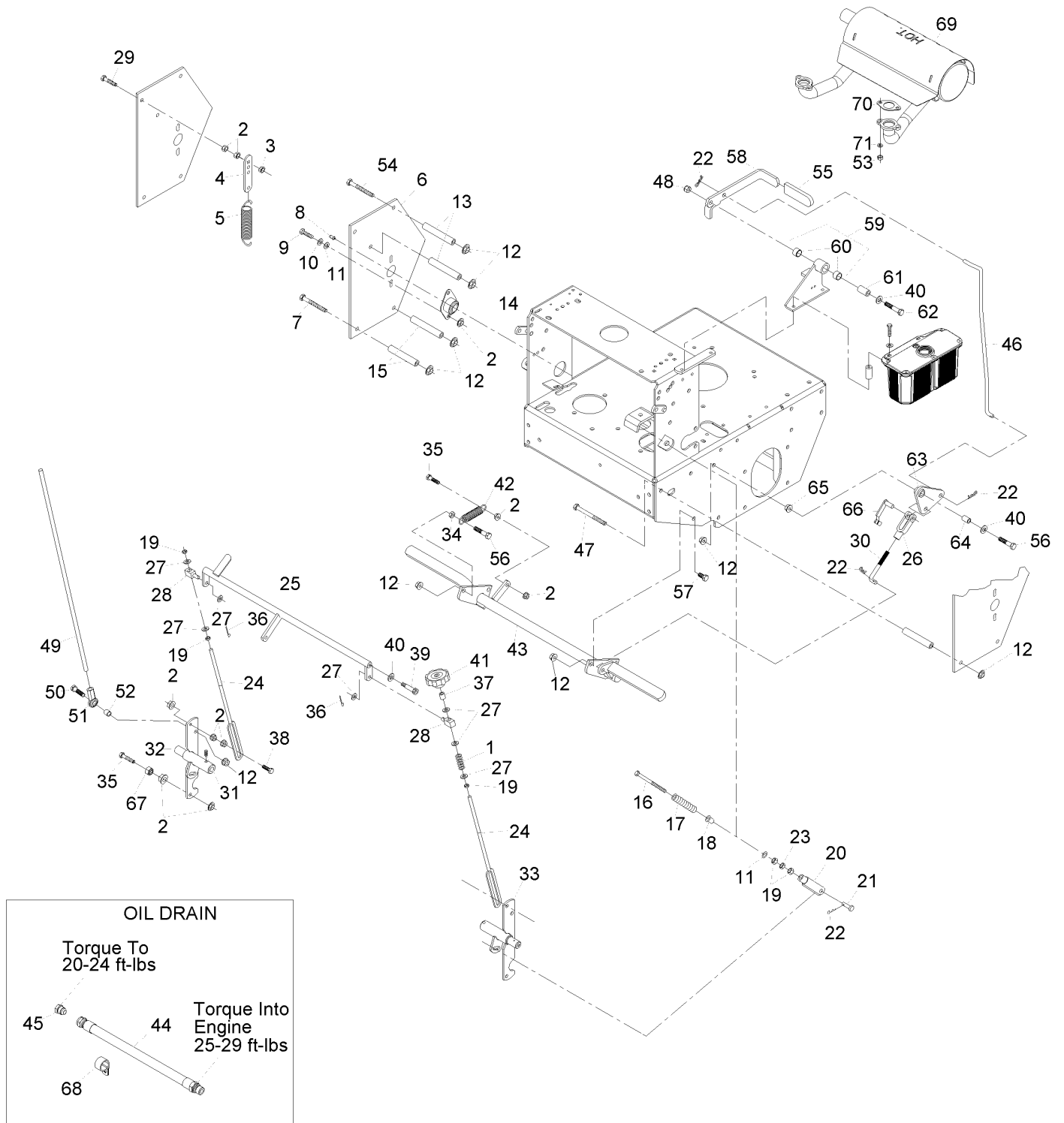
## Engine Deck Assembly (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                  | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                       |
|-------------|--------------------|-------------|-------------------------------------|-------------|--------------------|-------------|------------------------------------------|
| 1           | 323-11             | 1           | Screw-HH 3/8-16 X 2 1/4             | 45          | 109-4077           | 1           | Pulley, Idler                            |
| 2           | 98-5975            | 26          | Washer-Spring Disc 3/8              | 46          | 1-603496           | 1           | Bushing-Idler                            |
| 3           | 103-3506           | 1           | Seal-Single Lip                     | 47          | 103-8599           | 1           | Spring, Extension                        |
| 4           | 1-513034           | 2           | Sleeve-Bearing                      | 48          | 109-1296           | 1           | Kit, Idler Arm (109-1208-03) W/Brgs      |
| 5           | 302-19             | 1           | Zerk-1/4-28 Str                     | 49          | 1481               | 2           | Zerk-45° 1/4-28                          |
| 6           | 1-414143           | 1           | Asm, Bellcrank (1-412285-03) W/Brgs | 50          | 98-5961            | 1           | Screw-HH 3/8-16 X 4 Gr8                  |
| 7           | 322-6              | 1           | Screw-HH 5/16-18 X 1 1/4            | 51          | 323-9              | 2           | Screw-HH 3/8-16 X 1 3/4                  |
| 8           | 321-6              | 2           | Screw-HH 1/4-20 X 1                 | 56          | 1-807272           | 2           | Key-5Mm X 5Mm X 25Mm                     |
| 9           | 32128-33           | 4           | Nut-Whizlock 1/4-20                 | 57          | 1-803050           | 4           | Setscrew-5/16-18 X 3/4 ■                 |
| 10          | 1-523498           | 1           | Spring, Motion Control              | 58          | 109-1057           | 1           | Belt, Pump Drive                         |
| 11          | 103-7398           | 1           | Spring, Belt Tension                | 59          | 1-413010           | 2           | Sheave ASM ●                             |
| 12          | 1-543007           | 1           | Spacer                              | 60          | 103-6317           | 1           | Belt, Blade Clutch                       |
| 13          | 1-213069           | 1           | Washer                              | 61          | 1-807259           | 1           | Key-Machine 1/4 X 1/4 X 1                |
| 14          | 3296-29            | 3           | Nut-Nyloc 5/16-18                   | 62          | 103-6308           | 1           | Sheave W/Shaft ●                         |
| 15          | 3256-4             | 2           | Washer-3/8 Std                      | 63          | 1-413111           | 2           | Bearing, Clutch ●                        |
| 16          | 3290-357           | 17          | Nut-Whizlock 3/8-16                 | 64          | 32120-8            | 2           | Ring-Retaining                           |
| 17          | 1-413282           | 1           | Linkage                             | 65          | 1-413012           | 1           | Spacer, Bearing                          |
| 18          | 1-806003           | 1           | Hairpin-Cotter                      | 66          | 1-523157           | 1           | Washer                                   |
| 19          | 109-1297           | 1           | Asm, Deck (116-1682-01) W/Decals    | 67          | 1-413049-01        | 1           | Plate, Clutch Pivot                      |
| 20          | 323-4              | 2           | Screw-HH 3/8-16 X 3/4               | 68          | 322-5              | 6           | Screw-HH 5/16-18 X 1                     |
| 21          | 1-633068           | 1           | Arm-Lift, Deck                      | 69          | 1-413207           | 2           | Pivot, Bearing                           |
| 22          | 32128-20           | 11          | Nut-Whizlock 5/16-18                | 70          | 1-414418           | 1           | Asm, Clutch Arm (1-412417-03) W/Bearings |
| 23          | 1-303334           | 1           | Washer-Spring Disc 5/16             | 71          | 1-413235           | 1           | Washer, Spacer                           |
| 25          | 103-2916           | 1           | Guard-Top                           | 72          | 1-412138-03        | 1           | Wld, Pivot Pin                           |
| 26          | 103-3505           | 1           | Seal-Double Lip                     | 73          | 322-3              | 3           | Screw-HH 5/16-18 X 3/4                   |
| 27          | 3256-3             | 2           | Washer-5/16 Std                     | 74          | 1-413062           | 1           | Band, Brake                              |
| 29          | 3296-39            | 5           | Nut-Nyloc 3/8-16                    | 75          | 323-8              | 2           | Screw-HH 3/8-16 X 1 1/2                  |
| 30          | 323-6              | 10          | Screw-HH 3/8-16 X 1                 | 76          | 103-6310           | 1           | Wld, Belt Guide                          |
| 31          | 1-412082-01        | 2           | Mount, Wheel Motor (48& 52)         | 77          | 1-412031           | 1           | Sheave W/Drum ●                          |
| 32          | 323-6              | 8           | Screw-HH 3/8-16 X 1                 | 78          | 1-800521           | 1           | Screw-HH 3/8-24 X 1 ■                    |
| 33          | 1-602997           | 2           | Hub ASM W/Studs                     | 79          | 1-413009-01        | 1           | Plate, Guard                             |
| 33:1        | 1-633926           | 8           | Stud-Wheel                          | 80          | 103-2056           | 1           | Shield-Drag                              |
| 34          | 1-613263           | 2           | Wheel And Tire ASM                  | 81          | 1-413510           | 2           | Clip-Loom                                |
| 34:1        | 1-613264           | 2           | Tire-Turfmaster                     | 82          | 1-413511           | 2           | Hanger, Drag Shield                      |
| 34:2        | 1-603715           | 2           | Wheel-Rim                           | 83          | 1-543891           | 1           | Battery, Cover                           |
| 35          | 242-50             | 8           | Nut-Lug 1/2-20                      | 84          | 1-543792           | 2           | Wingnut-Nyloc 1/4-20                     |
| 36          | 32136-5            | 2           | Nut-Slotted 3/4-16                  | 85          | 1-413541           | 1           | Trim-Lok, 1/8 X 5                        |
| 37          | 1-806800           | 2           | Pin-Cotter 9/64 X 1 1/2             | 86          | 103-1098           | 1           | Stand W/ Trim-Lok                        |
| 38          | 1-807264           | 1           | Key-Machine 1/4 X 1/4 X 2 5/8       | 87          | 1-543882           | 2           | Bolt, Hold Down                          |
| 39          | 103-6309           | 1           | Asm, Drive Sheave ●                 | 88          | 323-7              | 5           | Screw-HH 3/8-16 X 1 1/4                  |
| 40          | 1-603609           | 1           | Bushing                             | 89          | 32120-10           | 2           | Ring-Retaining                           |
| 41          | 1-373034           | 2           | Washer                              | 90          | 1-807019           | 2           | Key-Woodruff 1 X 1/4                     |
| 42          | 1-603610           | 2           | Washer-Spring Disc 7/16             | 91          | 103-3504           | 2           | Bearing-Spherical                        |
| 43          | 3212-10            | 1           | Screw-HH 7/16-20 X 2 1/2 ■          | 92          | 106-7159           | 2           | O-Ring                                   |
| 44          | 3256-24            | 2           | Washer-3/8 Sae                      | 93          | 103-5677           | 1           | Spacer                                   |
|             |                    |             |                                     | 94          | 116-2839           | 2           | Nut-Lock 3/4-16                          |
|             |                    |             |                                     | 95          | 1-603044           | 1           | Bushing                                  |

● Apply anti-seize compound in bore.

■ Use Pro-Lock, Nut Type (P/N 1-840022, .5ml tube) on threads.

# Engine Deck Assembly (cont.)

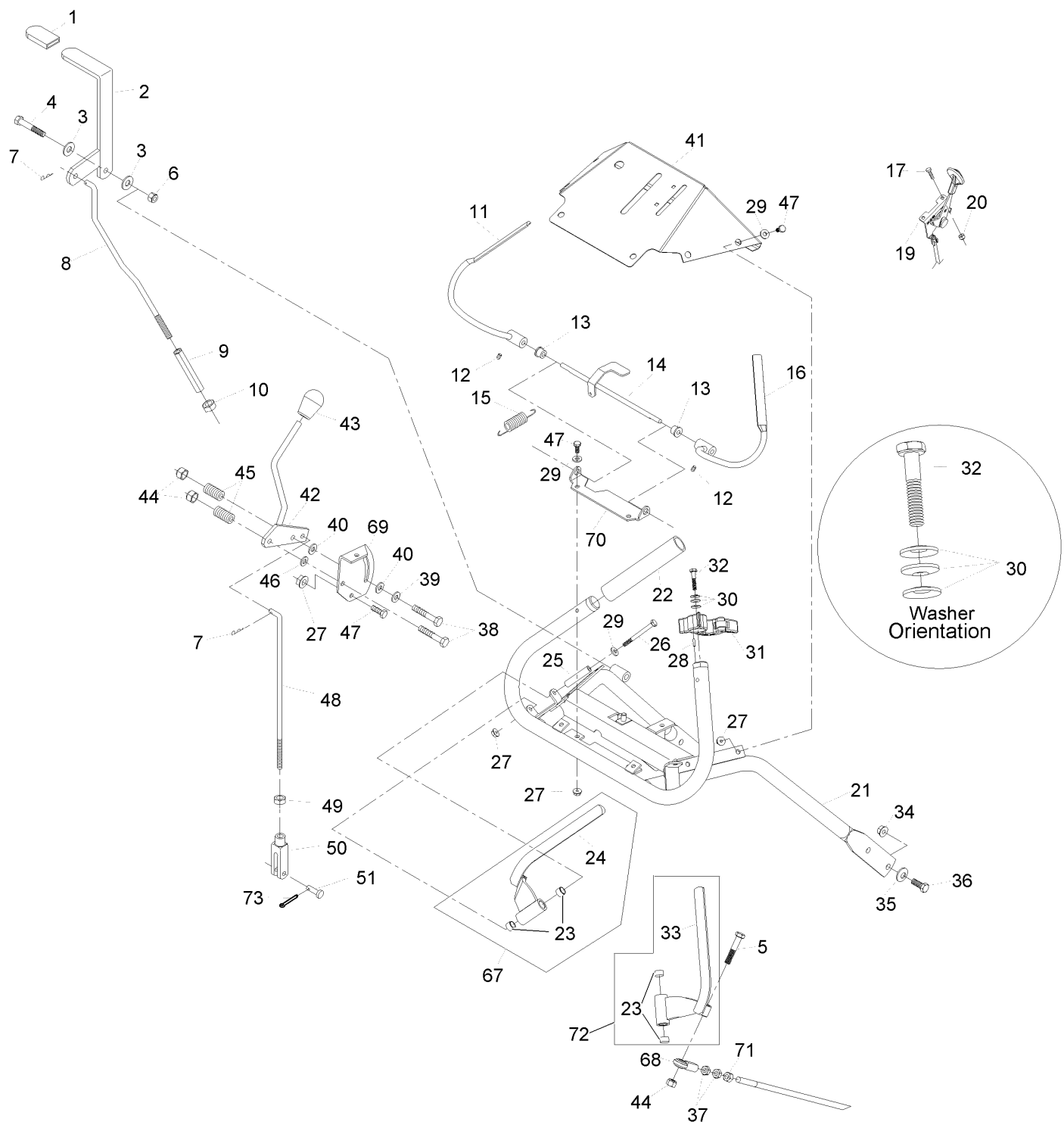


## Engine Deck Assembly (cont.) (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>              | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                        |
|-------------|--------------------|-------------|---------------------------------|-------------|--------------------|-------------|-------------------------------------------|
| 1           | 1-323245           | 1           | Spring-Compression              | 38          | 1-403180           | 2           | Screw-HH 5/16-18 X 1 1/4 Sp               |
| 2           | 32128-20           | 20          | Nut-Whizlock 5/16-18            | 39          | 1-809056           | 2           | Screw-Sh 5/16-18 X 1 3/8 ●                |
| 3           | 3296-29            | 2           | Nut-Nyloc 5/16-18               | 40          | 3256-24            | 4           | Washer-3/8 Sae                            |
| 4           | 1-613089           | 2           | Tab-Spring, Extension           | 41          | 103-3060           | 1           | Knob-Tracking                             |
| 5           | 1-603693           | 2           | Spring                          | 42          | 1-323161           | 1           | Spring                                    |
| 6           | 110-4897-01        | 2           | Shield-Control                  | 43          | 103-2004-03        | 1           | Wld-Brake                                 |
| 7           | 323-16             | 6           | Screw-HH 3/8-16 X 4             | 44          | 109-0877           | 1           | Asm, Oil Drain Hose W/Plug                |
| 8           | 302-19             | 2           | Zerk-1/4-28 Str                 | 45          | 109-1012           | 1           | Plug                                      |
| 9           | 322-3              | 4           | Screw-HH 5/16-18 X 3/4          | 46          | 1-413492           | 1           | Linkage, Upper Brake                      |
| 10          | 1-805005           | 4           | Washer-Lock 5/16 Heavy          | 47          | 323-16             | 1           | Screw-HH 3/8-16 X 4                       |
| 11          | 3256-2             | 6           | Washer-1/4 Std                  | 48          | 3296-39            | 1           | Nut-Nyloc 3/8-16                          |
| 12          | 3290-357           | 15          | Nut-Whizlock 3/8-16             | 49          | 103-1148           | 2           | Rod, Drive Lever                          |
| 13          | 1-323195-01        | 4           | Spacer-Shield                   | 50          | 323-8              | 2           | Screw-HH 3/8-16 X 1 1/2                   |
| 14          | 1-633102           | 2           | Bearing-Flanged                 | 51          | 103-1167           | 2           | Joint-Ball End, LH                        |
| 15          | 1-323197-01        | 4           | Spacer-Shield                   | 52          | 103-1166           | 2           | Spacer-Tube, Pump Link                    |
| 16          | 1-603737           | 2           | Bolt-Neutral Return             | 53          | 114-3549           | 4           | Nut-M8                                    |
| 17          | 103-0265           | 2           | Spring, Neutral Return          | 54          | 323-23             | 1           | Screw-HH 3/8-16 X 4-1/2                   |
| 18          | 1-603735           | 2           | Bushing-Flanged                 | 55          | 1-303020           | 1           | Grip-Lever                                |
| 19          | 3219-2             | 7           | Nut-Hex 5/16-24                 | 56          | 323-9              | 2           | Screw-HH 3/8-16 X 1 3/4                   |
| 20          | 1-303105           | 2           | Yoke-Adjustable                 | 57          | 323-4              | 3           | Screw-HH 3/8-16 X 3/4                     |
| 21          | 1-808280           | 2           | Pin-Clevis 5/16 X 1 49/64       | 58          | 103-3495           | 1           | Lever, Brake (1-412501-03) W/Decal & Grip |
| 22          | 1-806003           | 5           | Hairpin-Cotter                  | 59          | 1-414504           | 1           | Bracket ASM                               |
| 23          | 3220-2             | 2           | Nut-Jam 5/16-24                 | 60          | 1-413347           | 2           | Sleeve-Bushing                            |
| 24          | 1-413350           | 2           | Link-Control, Speed             | 61          | 1-413344           | 1           | Bushing-Pivot                             |
| 25          | 1-412203-01        | 1           | Crank-Control, Speed            | 62          | 323-10             | 1           | Screw-HH 3/8-16 X 2                       |
| 26          | 1-633131           | 1           | Yoke-Linkage, Brake             | 63          | 1-414508           | 1           | Bellcrank ASM                             |
| 27          | 3256-23            | 7           | Washer-5/16 Sae                 | 64          | 1-303548           | 1           | Bushing-Plastic                           |
| 28          | 1-603676           | 2           | Swivel-Adjustable, Short        | 65          | 32128-21           | 1           | Nut-3/8-16 Flanged Side Lock              |
| 29          | 1-800016           | 2           | Bolt-HH 5/16-18 X 1 1/4 Tap     | 66          | 103-2399           | 1           | Pin-Clevis Spring 3/8                     |
| 30          | 1-413489           | 1           | Linkage-Lower                   | 67          | 3218-2             | 2           | Nut-Jam 5/16-18                           |
| 31          | 1-803022           | 2           | Setscrew-5/16-18 X 5/8 ●        | 68          | 1-643312           | 1           | Clip-Loom                                 |
| 32          | 103-1190-01        | 1           | Shaft-Control, LH               | 69          | 116-4397           | 1           | Muffler                                   |
| 33          | 103-4796-01        | 1           | Shaft-Control, RH               | 70          | 1-653313           | 2           | Gasket-Exhaust                            |
| 34          | 3218-3             | 1           | Nut-Jam 3/8-16                  | 71          | 114-3550           | 4           | Washer-Lock, Spring                       |
| 35          | 116-3515           | 3           | Screw,HH Special 5/16-18 X 1.25 |             |                    |             |                                           |
| 36          | 3272-5             | 2           | Pin-Cotter 3/32 X 1/2           |             |                    |             |                                           |
| 37          | 1-603903           | 1           | Spacer                          |             |                    |             |                                           |

● Use Pro-Lock, Nut Type (P/N 1-840022, .5ml tube) on threads.

# ECS Upper Handles and Controls Assembly

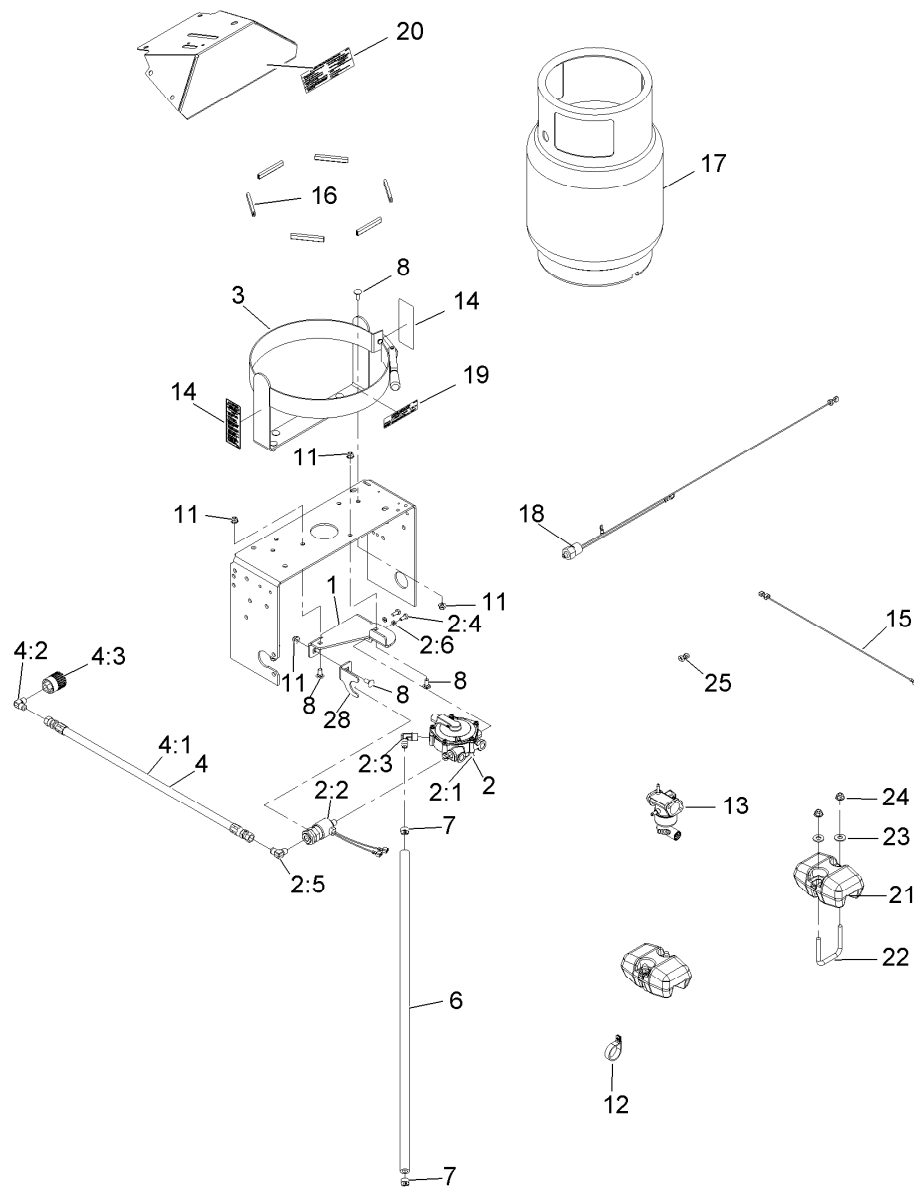


## ECS Upper Handles and Controls Assembly (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>              | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>                  |
|-------------|--------------------|-------------|---------------------------------|-------------|--------------------|-------------|-------------------------------------|
| 1           | 1-303020           | 1           | Grip-Lever                      | 31          | 103-1372           | 1           | Thumb Latch Asm LH(Not Shown)       |
| 2           | 1-414234           | 1           | Asm, Lever (1-412295-03) W/Grip | 32          | 103-0235           | 2           | Screw-HH 1/4-20 X 1 1/8 W/Nylon ●   |
| 3           | 3256-4             | 2           | Washer-3/8 Std                  | 33          | 116-4082           | 1           | Lever, Drive RH                     |
| 4           | 323-11             | 1           | Screw-HH 3/8-16 X 2 1/4         | 34          | 3290-357           | 4           | Nut-Whizlock 3/8-16                 |
| 5           | 322-9              | 2           | Screw-HH 5/16-18 X 1 3/4        | 35          | 98-5975            | 4           | Washer-Spring Disc 3/8              |
| 6           | 3296-39            | 1           | Nut-Nyloc 3/8-16                | 36          | 323-6              | 4           | Screw-HH 3/8-16 X 1                 |
| 7           | 1-806003           | 2           | Hairpin-Cotter                  | 37          | 3220-3             | 4           | Nut-Jam 3/8-24                      |
| 8           | 103-1149           | 1           | Link, Blade Engagement          | 38          | 322-10             | 2           | Screw-HH 5/16-18 X 2                |
| 9           | 1-413279           | 1           | Turnbuckle                      | 39          | 1-603716           | 1           | Washer-Friction Disc                |
| 10          | 3217-7             | 1           | Nut-Hex 3/8-16                  | 40          | 1-323244           | 2           | Washer-Friction                     |
| 11          | 116-4079           | 1           | Wld, Lever, Opc (LH) ■          | 41          | 109-4650           | 1           | Asm, Console (109-4649-03)W/ Decals |
| 12          | 1-803322           | 2           | Setscrew-5/16-24 X 5/16 ●       | 42          | 116-4083           | 1           | Wld, Speed Shift                    |
| 13          | 1-303365           | 2           | Bushing-Nylon                   | 43          | 103-0423           | 1           | Knob-Nyloc 3/8-16                   |
| 14          | 103-0769-03        | 1           | Wld, Opc Axle Lever             | 44          | 3296-29            | 4           | Nut-Nyloc 5/16-18                   |
| 15          | 1-303363           | 1           | Spring-Extension                | 45          | 1-323245           | 2           | Spring-Compression                  |
| 16          | 116-4080           | 1           | Wld, Opc Lever (RH) ■           | 46          | 3256-23            | 1           | Washer-5/16 Sae                     |
| 17          | 1-807513           | 2           | Bolt-Carriage #10-24 X 1/2      | 47          | 321-3              | 8           | Screw-HH 1/4-20 X 5/8               |
| 19          | 116-2426           | 1           | Cable, Throttle                 | 48          | 1-413225           | 1           | Rod, Speed Control                  |
| 20          | 3296-2             | 3           | Nut-Nyloc #10-24                | 49          | 3220-2             | 1           | Nut-Jam 5/16-24                     |
| 21          | 103-0770-03        | 1           | Wld, Handle                     | 50          | 1-303105           | 1           | Yoke-Adjustable                     |
| 22          | 103-0815           | 2           | Grip-Bar, Handle                | 51          | 1-808280           | 1           | Pin-Clevis 5/16 X 1 49/64           |
| 23          | 1-413152           | 4           | Bushing-Sleeve                  | 67          | 103-2513           | 1           | Asm, Drive Lever RH                 |
| 24          | 116-4081           | 1           | Lever, Drive LH                 | 68          | 103-2463           | 2           | Balljoint                           |
| 25          | 103-0027           | 2           | Bushing-Lever, Drive            | 69          | 103-0503           | 1           | Bracket, Shifter Slide              |
| 26          | 321-14             | 2           | Screw-HH 1/4-20 X 2 3/4         | 70          | 103-0489-03        | 1           | Bracket, Opc Axle                   |
| 27          | 32128-33           | 10          | Nut-Whizlock 1/4-20             | 71          | 3219-3             | 2           | Nut-Hex 3/8-24                      |
| 28          | 103-0464           | 2           | Pin-Spring 1/8 X 1/2            | 72          | 103-2514           | 1           | Asm, Drive Lever LH                 |
| 29          | 3256-22            | 10          | Washer-1/4 Sae                  | 73          | 3272-5             | 1           | Pin-Cotter 3/32 X 1/2               |
| 30          | 1-303435           | 6           | Washer-Spring Disc 1/4          |             |                    |             |                                     |
| 31          | 103-1371           | 1           | Thumb Latch Asm RH(Shown)       |             |                    |             |                                     |

● Use Pro-Lock, Nut Type (P/N 1-840022, .5ml tube) on threads.

■ Use Pro-Lock retaining type, Part no. 1-840023 (.5cc tube) on inside of bore of OPC hub.



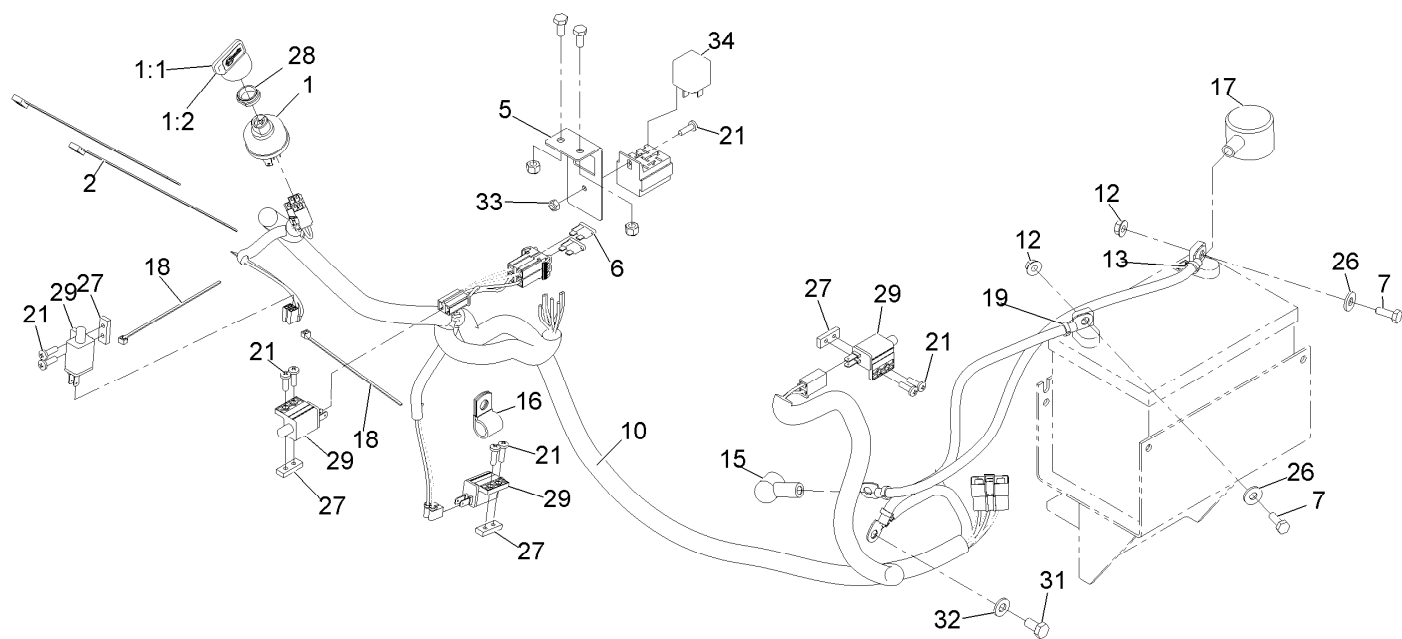
## Fuel Assembly

| Ref. | Part Number | Qty. | Description                        |
|------|-------------|------|------------------------------------|
| 1    | 116-3749-03 | 1    | Bracket, Tank Locator              |
| 2    |             | 1    | Asm, Reg And Shutoff ■             |
| 2:1  | 116-2567    | 1    | Regulator-LP, T60                  |
| 2:2  | 116-1288    | 1    | Asm, Lpg Fuel Shutoff W/ Terminals |
| 2:3  | 116-1127    | 1    | Elbow-90°                          |
| 2:4  | 321-3       | 2    | Screw-HH 1/4-20 X 5/8              |
| 2:5  | 116-1116    | 1    | Elbow-90°                          |
| 2:6  | 1-805004    | 2    | Washer-Lock 1/4 Heavy              |
| 3    | 116-1099    | 1    | Bracket, Lpg Tank Vertical         |
| 4    |             | 1    | Asm, Lpg Fuel Hose ■               |
| 4:1  | 116-1087    | 1    | Hose, Lpg                          |
| 4:2  | 116-1116    | 1    | Elbow-90°                          |
| 4:3  | 116-1073    | 1    | Connector, Lpg Tank                |
| 6    | 116-4115    | 1    | Hose, Lpg 3/8 X 33In               |
| 7    | 97-1271     | 2    | Clamp-Hose                         |
| 8    | 3230-1      | 7    | Bolt-Carriage 5/16-18 X 3/4        |
| 11   | 104-8300    | 7    | Nut-Nyloc 5/16-18 Flg              |

| Ref. | Part Number | Qty. | Description                    |
|------|-------------|------|--------------------------------|
| 12   | 103-0113    | 1    | Clip-Loom                      |
| 13   | 116-3540    | 1    | Carburetor, Lpg                |
| 14   | 109-9875    | 2    | Decal-Lpg Warning              |
| 15   | 116-1291    | 1    | Asm, Wire 20                   |
| 16   | 105-7699    | 6    | Strip-Seal                     |
| 17   | 109-9675    | 1    | Tank, Lpg 20 Lb Vertical       |
| 18   | 116-2842    | 1    | Oil Pressure Switch ASM        |
| 19   | 109-9870    | 1    | Decal-Lpg Tank Spec            |
| 20   | 109-9906    | 1    | Decal,Tank Replacement         |
| 21   | 103-2455-01 | 2    | Weight, Caster Support         |
| 22   | 103-2469    | 2    | U-Bolt                         |
| 23   | 3256-4      | 4    | Washer-3/8 Std                 |
| 24   | 104-8301    | 4    | Nut-Nyloc 3/8-16 Flg           |
| 25   | 32170-061   | 1    | Recept, Fem, .250, Insul.      |
| 26   | 116-1457    | 1    | Washer, Rubber Lpg Connector ● |
| 27   | 116-1456    | 1    | O-Ring, Lpg Connector ●        |
| 28   | 116-3750-03 | 1    | Solenoid-Support               |

● Not illustrated

■ Not serviced separately



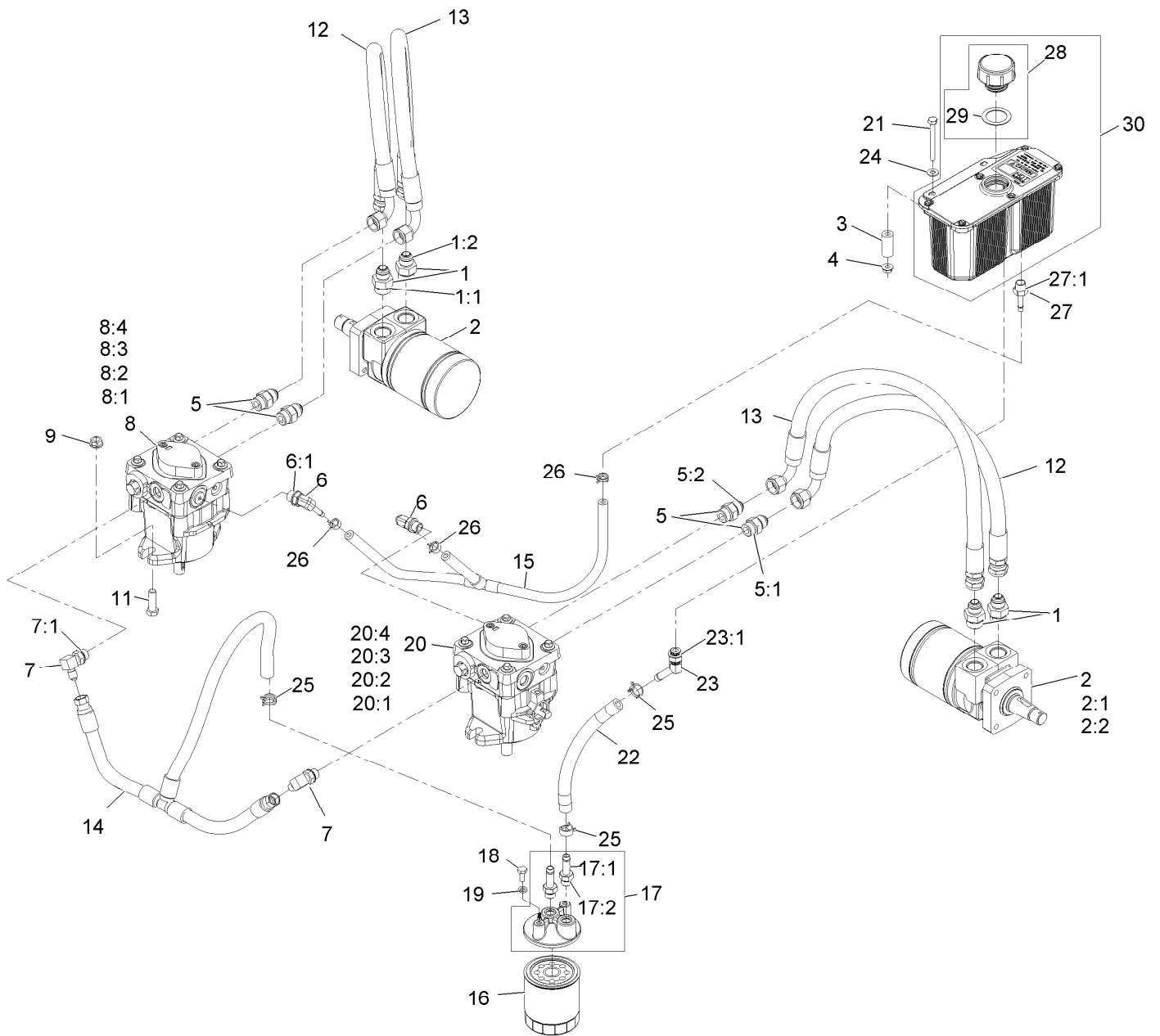
## Electrical Assembly

| Ref. | Part Number | Qty. | Description               |
|------|-------------|------|---------------------------|
| 1    | 103-0206    | 1    | Switch-Ignition W/Keys    |
| 1:1  | 1-603511    | 1    | Key-Ignition              |
| 1:2  | 103-2106    | 1    | Key-Exmark Logo           |
| 2    | 1-303335    | 2    | Tie-Cable 7 15/16 (Large) |
| 5    | 116-2738-01 | 1    | Bracket, Fuse             |
| 6    | 1-816001    | 2    | Fuse-Blade Type, 20 Amp   |
| 7    | 321-4       | 5    | Screw-HH 1/4-20 X 3/4     |
| 10   | 116-2560    | 1    | Harness, Wiring ●         |
| 12   | 32128-33    | 2    | Nut-Whizlock 1/4-20       |
| 13   | 109-7628    | 1    | Cable, Battery +          |
| 15   | 1-543393    | 1    | Insulator-Solenoid        |
| 16   | 1-603727    | 1    | Clip-Loom                 |

| Ref. | Part Number | Qty. | Description             |
|------|-------------|------|-------------------------|
| 17   | 109-2407    | 1    | Insulator-Battery       |
| 18   | 1-303287    | 2    | Tie-Cable 5 1/2 (Small) |
| 19   | 1-413540    | 1    | Cable-Battery, Negative |
| 21   | 3290-500    | 9    | Screw-PPH #10-24 X 5/8  |
| 26   | 3256-2      | 2    | Washer-1/4 Std          |
| 27   | 1-633181    | 4    | Plate-Tapped            |
| 28   | 103-0498    | 1    | Nut-Ignition            |
| 29   | 1-513051    | 4    | Switch-N.O.             |
| 31   | 33114-016   | 1    | Screw-HH M8-1.25 X 16Mm |
| 32   | 33094-00    | 1    | Washer                  |
| 33   | 3296-2      | 1    | Nut-Nyloc #10-24        |
| 34   | 1-643275    | 1    | Relay-12Vdc 40 Amp      |

● Use dielectric grease on all wiring harness connectors.

# Hydraulic Assembly

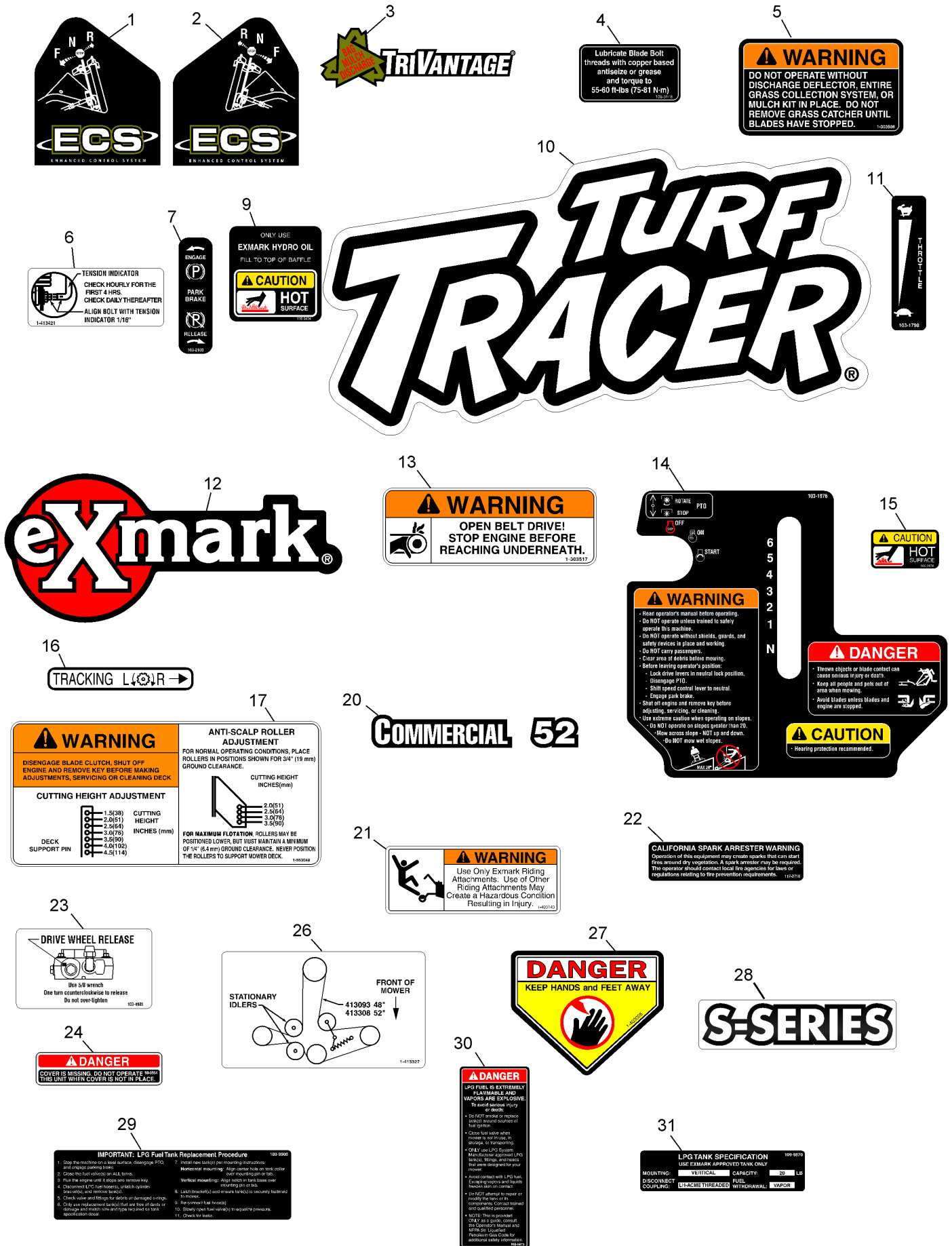


## Hydraulic Assembly (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>      | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>            |
|-------------|--------------------|-------------|-------------------------|-------------|--------------------|-------------|-------------------------------|
| 1           | 1-603991           | 4           | Adapter-Straight        | 16          | 109-4180           | 1           | Filter,25 Micron              |
| 1:1         | 1-603919           | 1           | O-Ring-Sae #10          |             |                    |             | Bi-Directional                |
| 1:2         | 1-603992           | 1           | O-Ring-37 Flare #8      | 16          | 1-523541           | 1           | Element, Oil Filter(Winter) ● |
| 2           | 1-603718           | 2           | Motor-Wheel, HYD        | 17          | 103-2889           | 1           | Filter Head ASM               |
| 2:1         | 1-000138           | 1           | Bearing And Seal Kit    | 17:1        | 103-1912           | 2           | Adapter-Straight              |
| 2:2         | 1-000119           | 1           | Seal Kit                | 17:2        | 1-603921           | 1           | O-Ring-Sae #6                 |
| 3           | 103-2191           | 2           | Spacer                  | 18          | 321-3              | 2           | Screw-HH 1/4-20 X 5/8         |
| 4           | 32128-33           | 2           | Nut-Whizlock 1/4-20     | 19          | 1-805004           | 2           | Washer-Lock 1/4 Heavy         |
| 5           | 1-603990           | 4           | Adapter-Straight        | 20          | 116-0943           | 1           | Pump-HYD, RH                  |
| 5:1         | 1-603920           | 1           | O-Ring-Sae #8           | 20:1        | 103-2664           | 1           | Input Shaft Kit               |
| 5:2         | 1-603992           | 1           | O-Ring-37 Flare #8      | 20:2        | 94-6922            | 1           | Bearing-Thrust                |
| 6           | 103-1799           | 2           | Elbow-90 DEG            | 20:3        | 103-2666           | 1           | Cylinder Block Kit            |
| 6:1         | 1-603921           | 1           | O-Ring-Sae #6           | 20:4        | 105-6184           | 1           | Seal Overhaul Kit             |
| 7           | 103-1802           | 2           | Fitting-HYD, 90 DEG     | 21          | 321-15             | 2           | Screw-HH                      |
| 7:1         | 1-603921           | 1           | O-Ring-Sae #6           | 22          | 103-2959           | 1           | Hose-Charge                   |
| 8           | 116-0942           | 1           | Pump-HYD, LH            | 23          | 103-1807           | 1           | Fitting-Barbed, 45 DEG        |
| 8:1         | 103-2664           | 1           | Input Shaft Kit         | 23:1        | 1-603921           | 1           | O-Ring-Sae #6                 |
| 8:2         | 94-6922            | 1           | Bearing-Thrust          | 24          | 3256-22            | 2           | Washer-1/4 Sae                |
| 8:3         | 103-2666           | 1           | Cylinder Block Kit      | 25          | 103-1988           | 3           | Clamp-Hose 11/16              |
| 8:4         | 105-6184           | 1           | Seal Overhaul Kit       | 26          | 103-1716           | 3           | Clamp-Hose 17/32              |
| 9           | 32128-43           | 4           | Nut-Whizlock 3/8-16     | 27          | 103-1801           | 1           | Adapter-Straight              |
| 11          | 323-7              | 4           | Screw-HH 3/8-16 X 1 1/4 | 27:1        | 1-603921           | 1           | O-Ring-Sae #6                 |
| 12          | 1-613034           | 2           | Hose-Pressure, High     | 28          | 103-7615           | 1           | Asm, Cap W/Gasket             |
| 13          | 1-323241           | 2           | Hose-Pressure, High     | 29          | 103-1949           | 1           | Gasket-Cap                    |
| 14          | 116-2123           | 1           | Charge Hose ASM         | 30          | 103-1947           | 1           | HYD Reservoir ASM             |
| 15          | 116-0918           | 1           | Case Drain Hose ASM     |             |                    |             |                               |

● Use only for operation below 32°F (0°C).

# Decals



## Decals (continued)

| <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>        | <i>Ref.</i> | <i>Part Number</i> | <i>Qty.</i> | <i>Description</i>         |
|-------------|--------------------|-------------|---------------------------|-------------|--------------------|-------------|----------------------------|
| 1           | 103-2242           | 1           | Decal, LH Ecs Instruction | 16          | 1-413214           | 1           | Decal, Tracking            |
| 2           | 103-2243           | 1           | Decal, RH Ecs Instruction | 17          | 1-553049           | 1           | Decal-Anti Scalp           |
| 3           | 1-303520           | 1           | Decal, Trivantage         | 20          | 1-403132           | 1           | Decal, Commercial 52       |
| 4           | 109-3148           | 1           | Decal,Bolt Torque         | 21          | 1-403143           | 1           | Decal, Sulky Warning       |
| 5           | 1-303508           | 1           | Decal-Warning, Discharge  | 22          | 117-2718           | 1           | Decal-Arrester, Spark      |
| 6           | 1-413421           | 1           | Decal, Indicator          | 23          | 103-4935           | 1           | Decal, Drive Wheel Release |
| 7           | 103-2103           | 1           | Decal-Brake, Park         | 24          | 98-5954            | 3           | Decal-Cover, Missing       |
| 9           | 116-0404           | 1           | Decal, Hydraulic Tank     | 26          | 1-413327           | 1           | Decal, Belt Routing        |
| 10          | 103-3013           | 1           | Decal-Turf Tracer         | 27          | 1-403005           | 2           | Decal-Danger               |
| 11          | 103-1798           | 1           | Decal, Throttle           | 28          | 116-3884           | 2           | Decal-S-Series             |
| 12          | 103-2882           | 1           | Decal,Exmark Logo         | 29          | 109-9906           | 1           | Decal,Tank Replacement     |
| 13          | 1-303517           | 1           | Decal,Belt Drive          | 30          | 109-9875           | 1           | Decal-Lpg Warning          |
| 14          | 103-1976           | 1           | Decal, Ecs Console        | 31          | 109-9870           | 1           | Decal-Lpg Tank Spec        |
| 15          | 103-2076           | 2           | Decal-Caution             | 99          | 103-2461           | 1           | Decal Kit ●                |

● Not illustrated

**Notes:**

**Notes:**

**Notes:**

## MAXIMIZE THE PERFORMANCE OF YOUR EXMARK.

### 4-CYCLE PREMIUM ENGINE OIL

Part No. 116-3373

Both SAE 30 and SAE 10W-30 in one bottle.

Contains increased levels of zinc and phosphorus for better lubricity.

No Viscosity Index Improvers that tend to shear down in high heat.

Synthetic formulation.

Gas & Diesel compatible.

Anti-corrosion additives.

API 'SL' and JASO rated with wet clutch compatibility for other machines.

### PREMIUM HYDRO OIL

Part No. 109-9828

Commercial quality for tough, high-heat conditions.

Designed specifically for zero-turn mower hydraulic systems.

Superior shear resistance under heavy loads.



Available from your local Exmark dealer. Find your closest dealer at [exmark.com](http://exmark.com)

## SEE EXMARK'S COMPLETE LINE OF ACCESSORIES AND OPTIONS

### MID-MOUNT RIDING ACCESSORIES AND OPTIONS

|                                    |                                    |
|------------------------------------|------------------------------------|
| CUSTOM RIDE SEAT SUSPENSION SYSTEM | OPERATOR CONTROLLED DISCHARGE      |
| FULL SUSPENSION SEAT               | ROLL OVER PROTECTION SYSTEM (ROPS) |
| DECK LIFT ASSIST KIT               | SUN SHADE                          |
| HITCH KIT                          | TRASH CONTAINER                    |
| LIGHT KIT                          | TURF STRIPER                       |
| 12V POWER PORT                     | ULTRA VAC COLLECTION SYSTEM        |
| MICRO-MULCH SYSTEM                 | ULTRA VAC QUICK DISPOSAL SYSTEM    |

### OUT-FRONT RIDING ACCESSORIES AND OPTIONS

|                                    |                                 |
|------------------------------------|---------------------------------|
| CUSTOM RIDE SEAT SUSPENSION SYSTEM | SNOW BLADE                      |
| DUAL-TAIL WHEEL                    | SNOWBLOWER                      |
| FLOOR PAN EXTENDER                 | SUN SHADE                       |
| HITCH KIT                          | TRASH CONTAINER                 |
| LIGHT KIT                          | ULTRA VAC COLLECTION SYSTEM     |
| MICRO-MULCH SYSTEM                 | ULTRA VAC QUICK DISPOSAL SYSTEM |
| ROLL OVER PROTECTION SYSTEM (ROPS) | WEATHER CAB                     |

### WALK-BEHIND ACCESSORIES AND OPTIONS

|                    |              |
|--------------------|--------------|
| GRASS CATCHER      | TURF STRIPER |
| MICRO-MULCH SYSTEM | STANDON      |

Place Model No. and Serial No.  
Label Here (Included in the Literature  
Pack) or Fill in Below

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

Date Purchased \_\_\_\_\_

Engine Model No. and Spec. No. \_\_\_\_\_

Engine Serial No. (E/No) \_\_\_\_\_

© 2010 Exmark Mfg. Co., Inc.  
Industrial Park Box 808  
Beatrice, NE 68310  
All Rights Reserved

Part No. 4500-817 Rev. A  
(402) 223-6300  
Fax (402) 223-5489  
Printed in the USA.

