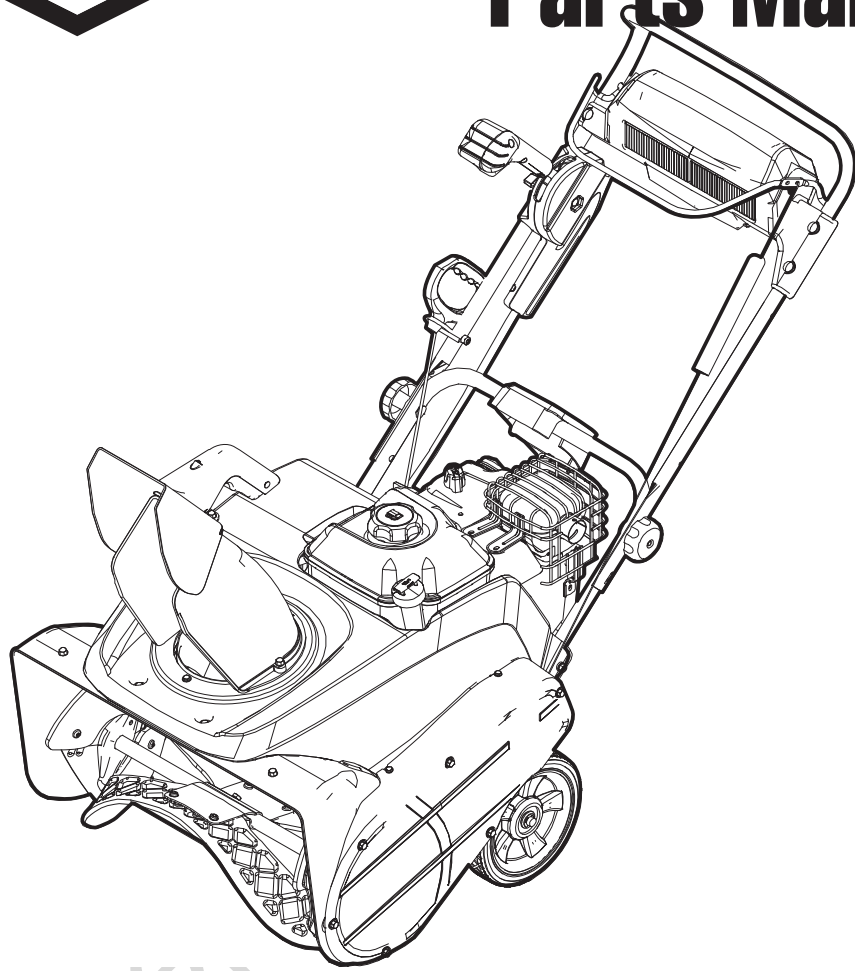




# Parts Manual



## 22" Single Stage Snowthrowers

### Models

| Mfg. No.   | Description   |
|------------|---|
| 1696161-00 | 822S, B&S 8TP 22" Single Stage Snowthrower (2012)             |
| 1696162-00 | 922S, B&S 9TP 22" Single Stage Snowthrower (2012)             |
| 1696252-00 | BSS822E, B&S 8TP 22" Single Stage Snowthrower (Export) (2012) |

Manual Part No. 1755464

Revision -

Rev. Date: 6/7/2012

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Reproduction

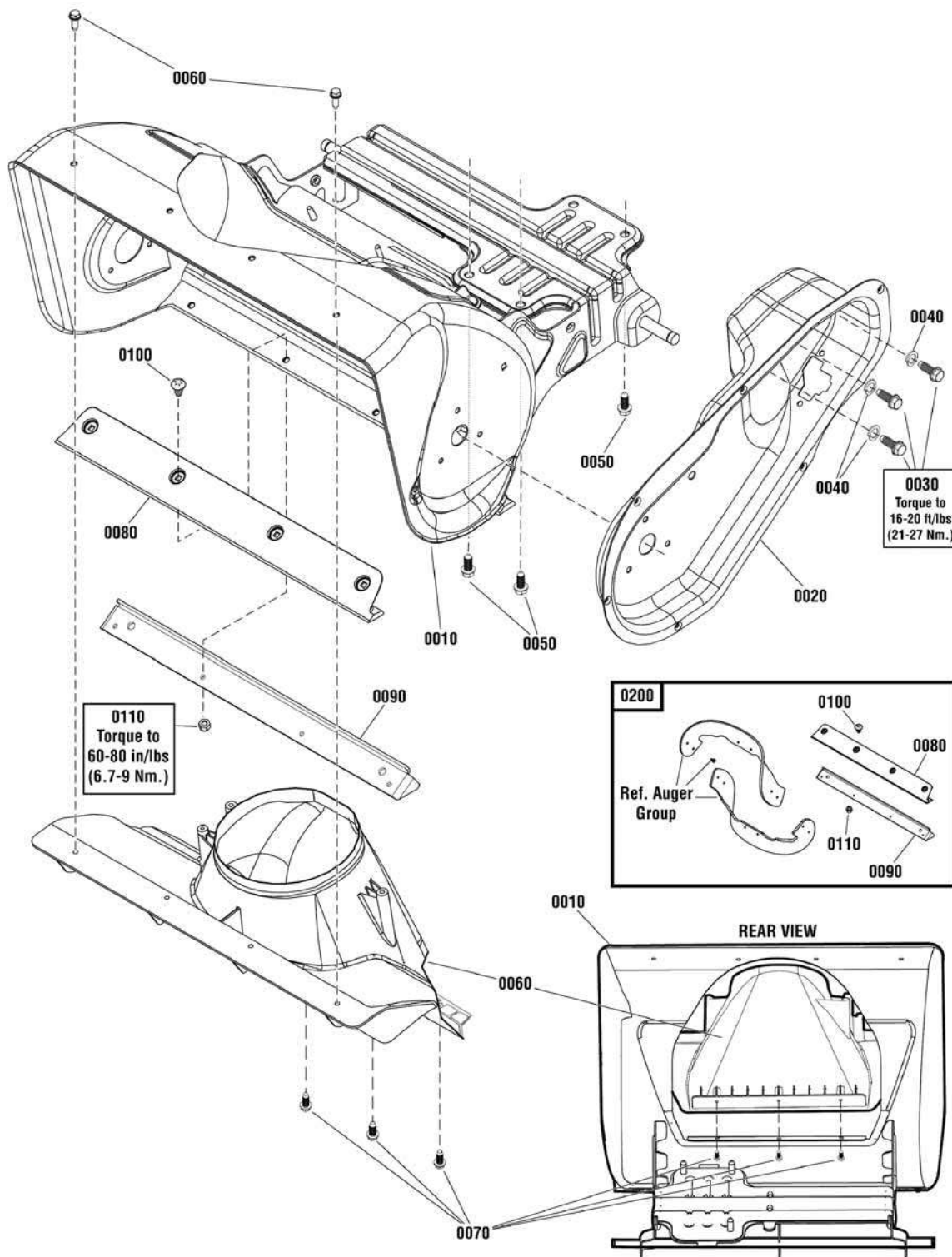
| <b>PRODUCT COMPONENTS</b>               | <b>PAGES</b>             |
|---|--------------------------|
| Frame Group .....                       | 4                        |
| Engine Group .....                      | 6                        |
| Auger Drive Group .....                 | 8                        |
| Handles & Controls Group - Remote ..... | 10                       |
| Wheel & Body Covering Group .....       | 12                       |
| Decals Group .....                      | 14                       |
| Chute Rotation Group - Remote .....     | 16                       |
| Auger Group .....                       | 18                       |
| Chute Group - Remote .....              | 20                       |
| Light Panel Group .....                 | 22                       |
| <b>Torque Specification Chart .....</b> | <b>Inside Back Cover</b> |

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# Frame Group

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.

2990433



The above parts group applies to the following Mfg. Nos.:

- 1696161-00 - 822S
- 1696162-00 - 922S
- 1696252-00 - BSS822E

## Frame Group

| REF NO | PART NO.    | QTY. | DESCRIPTION  |
|--------|-------------|------|--|
| 0010   | 1739225BSYP | 1    | FRAME ASSEMBLY   |
| 0020   | 1739100BSYP | 1    | HOUSING, Drive   |
| 0030   | 1752876YP   | 3    | CAPSCREW, Hex Head, 5/16-24 x 5/8  |
| 0040   | 1917356SM   | 3    | WASHER, Lock, 5/16   |
| 0050   | 75246GS     | 3    | SCREW, Hex Washer Head, Taptite, 3/8-16 x 1-1/4  |
| 0060   | 1739555YP   | 1    | CHIMNEY  |
| 0070   | 7091081SM   | 5    | SCREW, Hex Washer, Self Tapping, 1/4-15 x 3/4  |
| 0080   | -----       | 1    | SCRAPER BAR (Included with Ref. No. 0200)  |
| 0090   | 1752660AYP  | 1    | SUPPORT, Scraper Blade (Included with Ref. No. 0200)   |
| 0100   | 5025299X5YP | 4    | SCREW, Allen Head, 1/4-20 x 5/8 (Included with Ref. No. 0200)                                  |
| 0110   | 1752935YP   | 4    | NUT, Hex Lock, Nylon, 1/4-20 (Included with Ref. No. 0200)                                     |
| 0200   | 1687628YP   | 1    | KIT, Scaper Bar & Flight (Includes Ref. Nos. 0080, 0090, 0100, 0110, Auger Flights & Hardware) |

Not for  
Reproduction

## Footnotes

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

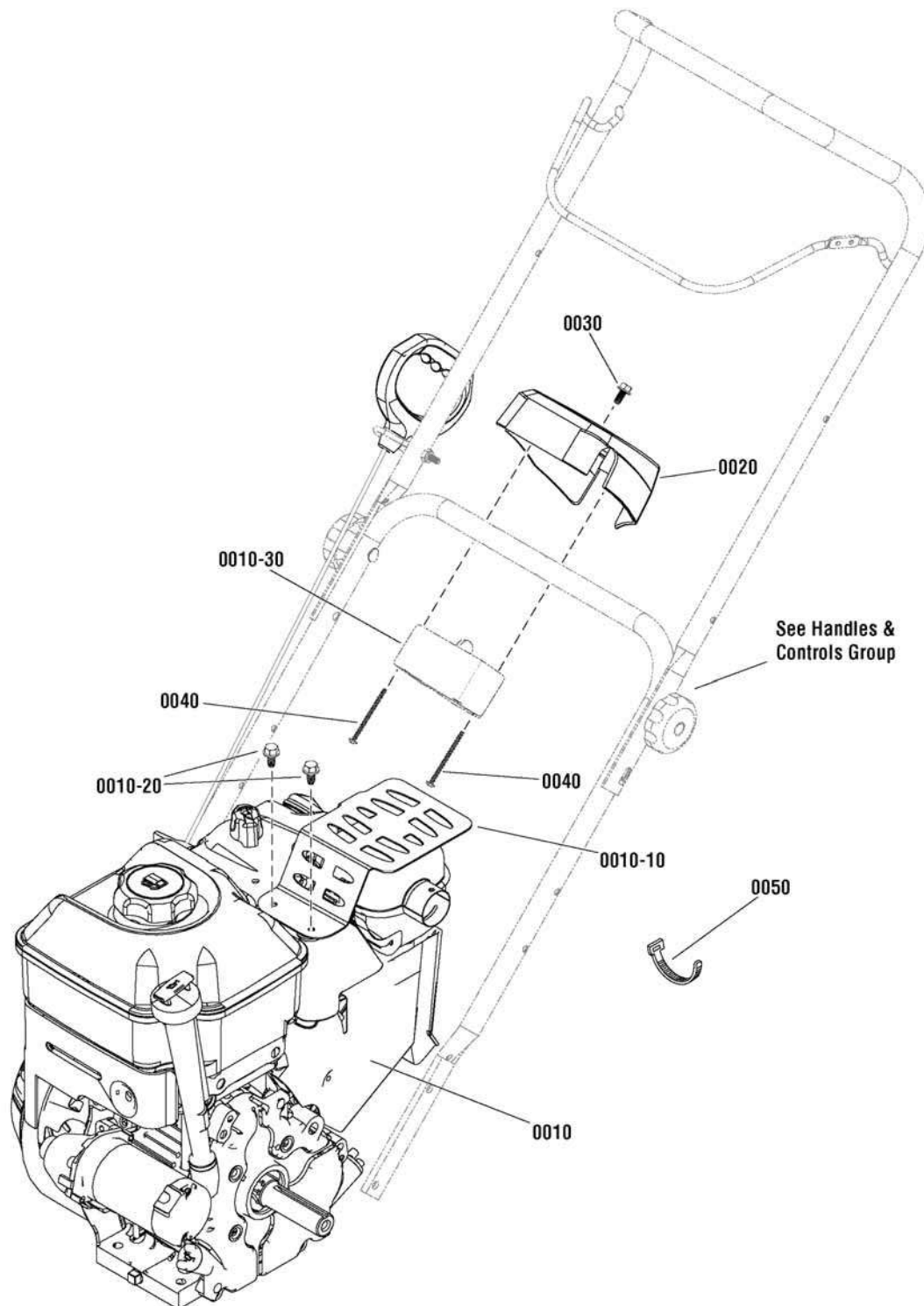
1696162-00 - 922S

1696252-00 - BSS822E

## Engine Group

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.

2989129



The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S  
1696162-00 - 922S  
1696252-00 - BSS822E

## Engine Group

| REF NO  | PART NO.       | QTY. | DESCRIPTION   |
|---------|----------------|------|---|
| 0010    | 12A105-0157-F8 | 1    | * ENGINE, 8TP Briggs & Stratton, North America (Engine Model: 12A105-0157-F8) |
| 0010    | 12A107-0156-F8 | 1    | * ENGINE, 8TP Briggs & Stratton, Export (Engine Model: 12A107-0156-F8)        |
| 0010    | 12D107-0162-F8 | 1    | * ENGINE, 9TP Briggs & Stratton, North America (Engine Model: 12D107-0162-F8) |
| 0010-10 | 797003         | 1    | GUARD, Muffler, Plate (North America)   |
| 0010-10 | 799028         | 1    | GUARD, Muffler, Wire (Export)   |
| 0010-20 | 699854         | 3    | SCREW, Muffler Guard, Hex Washer Head   |
| 0010-30 | -----          | 1    | ** STARTER, 110V (North America)  |
| 0010-30 | -----          | 1    | ** STARTER, 230V (Export)   |
| 0020    | 1750032YP      | 1    | HOUSING, Starter, 110V  |
| 0020    | 1750033YP      | 1    | HOUSING, Starter, 230V, Export (Used on 1695252-00 Only)                      |
| 0030    | 1750447YP      | 1    | SCREW, Hex Washer Head, Trilob, 1/4-20 x 1/2                                  |
| 0040    | 1750593YP      | 2    | SCREW, Pan Head Phillips, Plast., 8-16 x 2-1/8                                |
| 0040    | 1750592YP      | 2    | SCREW, Pan Head Phillips, Plast., 8-16 x 2-1/2 (Used on 1695252-00 Only)      |
| 0050    | 032618MA       | 4    | STAP, Tie   |

Not for  
Reproduction

### Footnotes

Note\* To verify your specific engine model, please reference the ID Tag located on your engine. See your local Briggs & Stratton distributor for parts and service.

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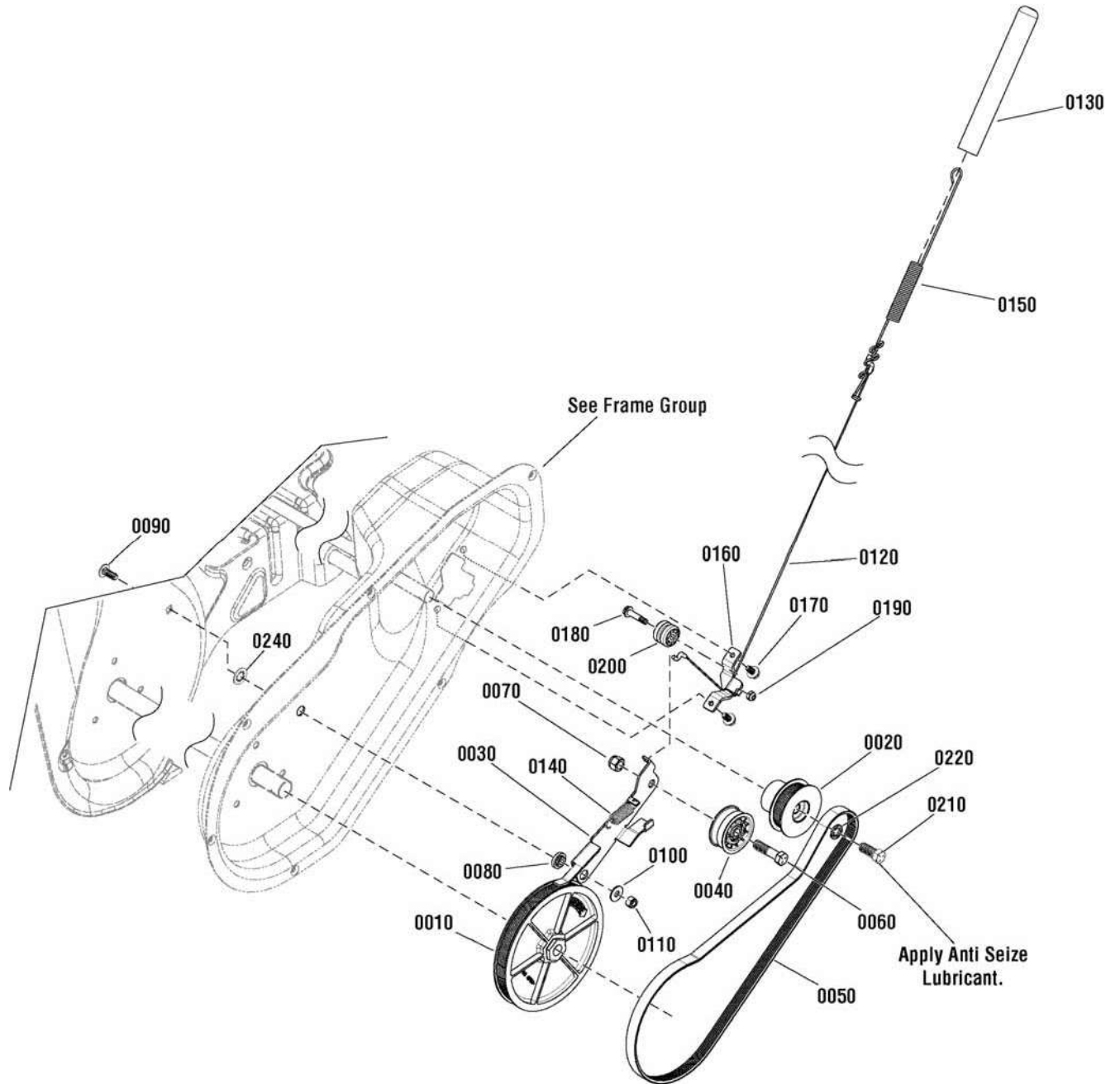
#### The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S  
1696162-00 - 922S  
1696252-00 - BSS822E

## Auger Drive Group

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.

2988894



The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S

1696162-00 - 922S

1696252-00 - BSS822E



## Auger Drive Group

| REF NO | PART NO.  | QTY. | DESCRIPTION                                  |
|--------|-----------|------|--|
| 0010   | 1739730YP | 1    | PULLEY, Driven                               |
| 0020   | 1739179YP | 1    | PULLEY, Driver                               |
| 0030   | 1739526YP | 1    | ARM, Idler, Drive                            |
| 0040   | 1502120MA | 1    | IDLER, Plastic Ball Bearing                  |
| 0050   | 1739338YP | 1    | BELT, Drive                                  |
| 0060   | 01X111MA  | 1    | CAPSCREW, Hex Head, 3/8-16 x 1-1/2           |
| 0070   | 7091299SM | 1    | NUT, Nylock, 3/8                             |
| 0080   | 1739709YP | 1    | SPACER, Idler Arm                            |
| 0090   | 1931318SM | 1    | BOLT, Carriage, Short Neck, 1/4-20 x 7/8 G5  |
| 0100   | 7091253YP | 1    | WASHER, Flat, .281 X 3/4 x 1/2               |
| 0110   | 7091603SM | 1    | NUT, Nylock, 1/4                             |
| 0120   | 1502113MA | 1    | CABLE, Handle                                |
| 0130   | 1739935YP | 1    | BOOT, Clutch Spring                          |
| 0140   | 1750226YP | 1    | SPRING, Idler                                |
| 0150   | 1750315YP | 1    | SPRING, Extension                            |
| 0160   | 1750329YP | 1    | BRACKET, Cable Guide                         |
| 0170   | 1750447YP | 2    | SCREW, Hex Washer Head, Trilob, 1/4-20 x 1/2 |
| 0180   | 1750594YP | 1    | CAPSCREW, Hex Shoulder, 1/4 x 3/4            |
| 0190   | 7090376YP | 1    | NUT, Locking, #10                            |
| 0200   | 579860MA  | 1    | SPOOL CABLE, Auger Control                   |
| 0210   | 001X20MA  | 1    | CAPSCREW, Hex Head, 3/8-24 x 1               |
| 0220   | 22237GS   | 1    | WASHER, Locking, 3/8                         |
| 0240   | 1960518SM | 1    | NUT, Push, 1/4                               |

Not for  
Reproduction

### Footnotes

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

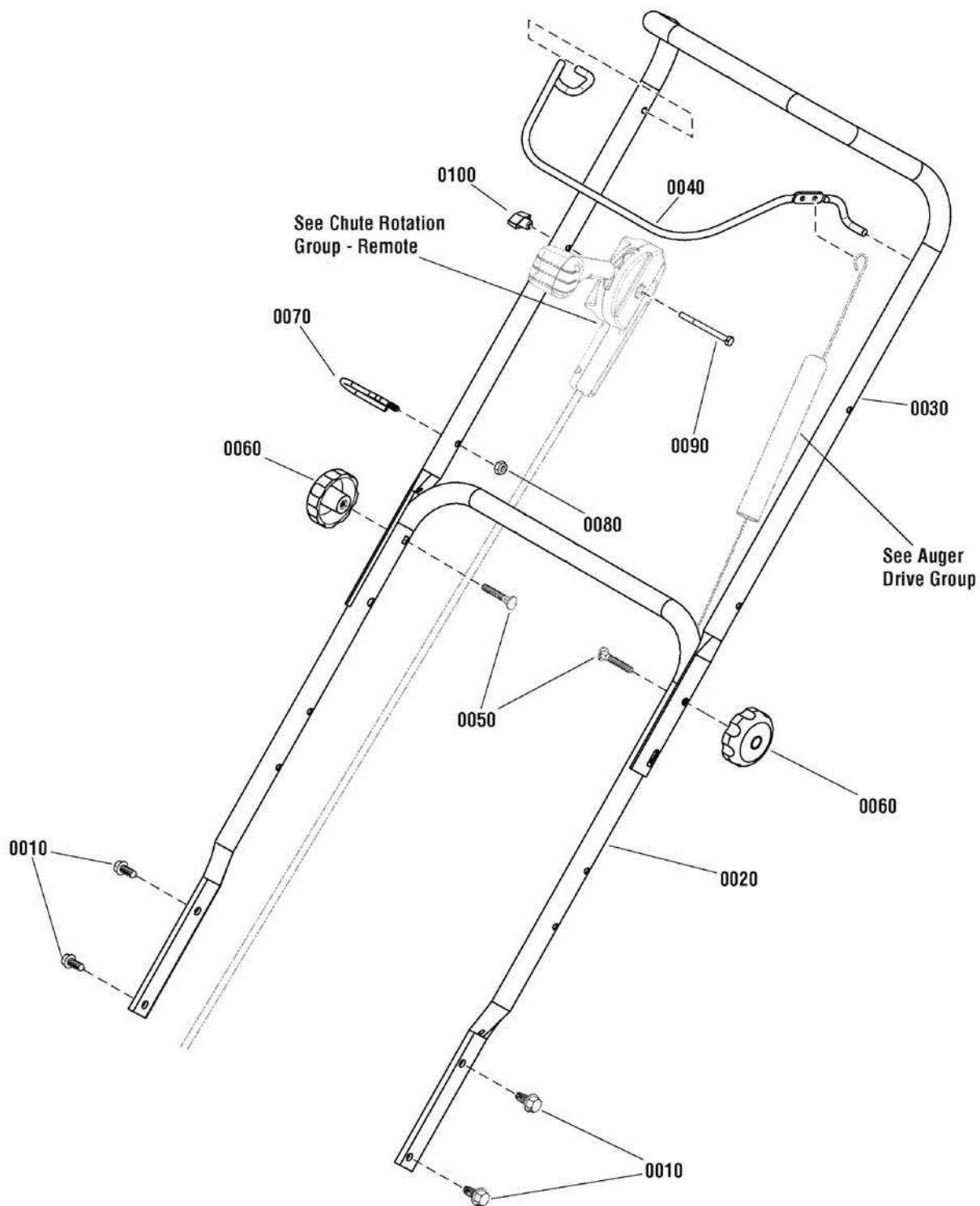
1696162-00 - 922S

1696252-00 - BSS822E

## Handles & Controls Group - Remote

2988896

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.



The above parts group applies to the following Mfg. Nos.:

- 1696161-00 - 822S
- 1696162-00 - 922S
- 1696252-00 - BSS822E

## **Handles & Controls Group - Remote**

| <b>REF NO</b> | <b>PART NO.</b> | <b>QTY.</b> | <b>DESCRIPTION</b>                             |
|---------------|-----------------|-------------|--|
| 0010          | 1930601SM       | 4           | SCREW, Hex Washer Head, Taptite, 5/16-18 x 5/8 |
| 0020          | 1739362AYP      | 1           | HANDLEBAR, Lower                               |
| 0030          | 1751172AYP      | 1           | HANDLEBAR, Upper                               |
| 0040          | 1739361BNYP     | 1           | BAIL, Engine Stop, Red                         |
| 0040          | 1739361AYP      | 1           | BAIL, Engine Stop, Black                       |
| 0050          | 7091189YP       | 2           | BOLT, Carriage, Curved Head, 5/16 x 2, G2      |
| 0060          | 7105085YP       | 2           | KNOB, Handle, 5/16-18                          |
| 0070          | 1739389YP       | 1           | GUIDE, Rope                                    |
| 0080          | 1920397SM       | 1           | NUT, Nylock, 1/4                               |
| 0090          | 7091317YP       | 1           | CAPSCREW, Hex Head, 1/4-20 x 3, G5             |
| 0100          | 194289GS        | 1           | KNOB, Handle                                   |

Not for  
Reproduction

### **Footnotes**

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

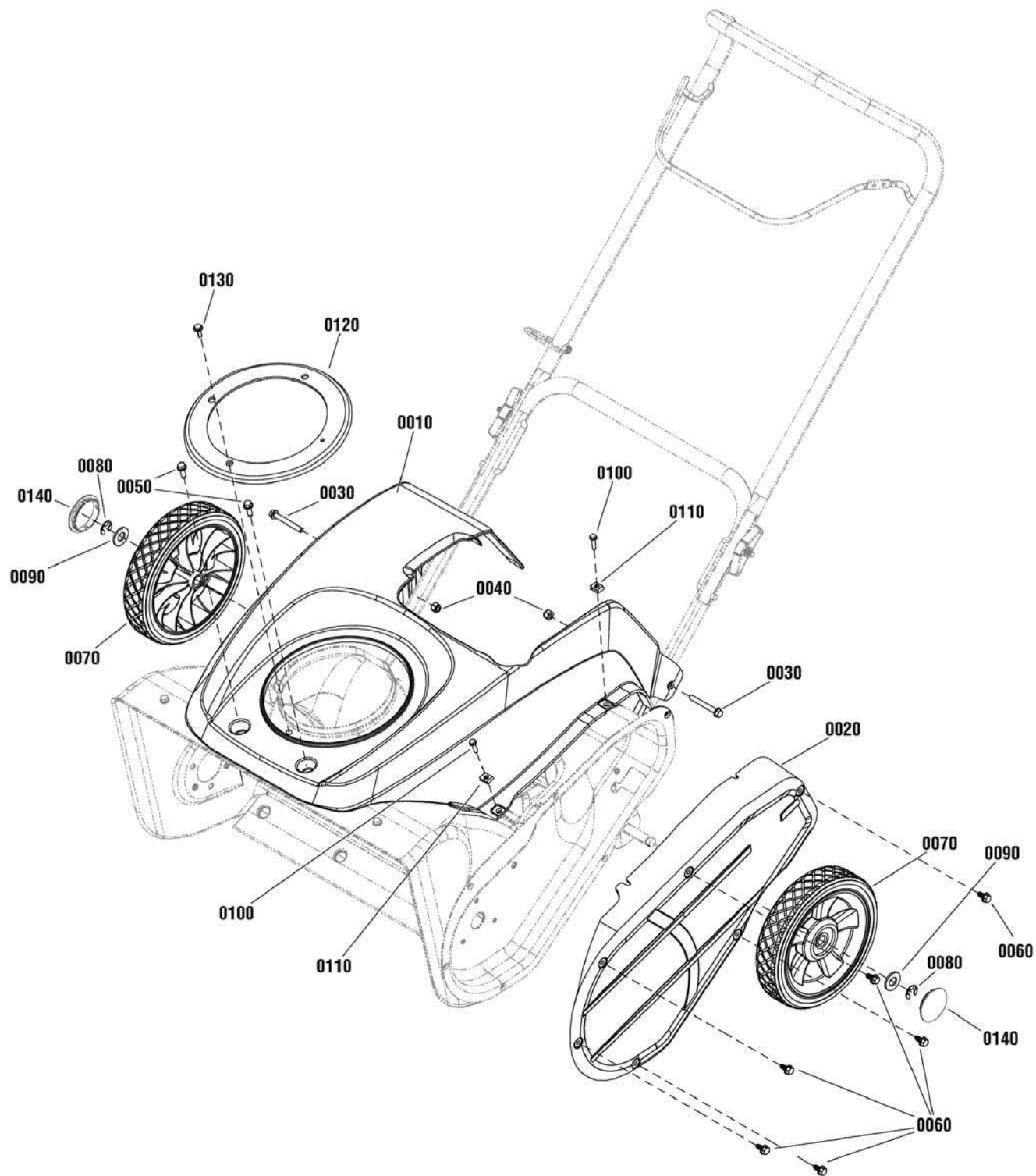
1696162-00 - 922S

1696252-00 - BSS822E

## Wheel & Body Covering Group

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.

2990434



The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S

1696162-00 - 922S

1696252-00 - BSS822E

## Wheel & Body Covering Group

| REF NO | PART NO.  | QTY. | DESCRIPTION                                  |
|--------|-----------|------|--|
| 0010   | 1754520YP | 1    | COVER, Top                                   |
| 0020   | 1739599YP | 1    | COVER, Drive Case                            |
| 0030   | 1750777YP | 2    | CAPSCREW, Hex Washer Head, 1/4 x 20 x 2      |
| 0040   | 7091603SM | 2    | NUT, Nylock, 1/4                             |
| 0050   | 7091081SM | 2    | SCREW, Hex Washer Head, 1/4-15 x 3/4         |
| 0060   | 1750447YP | 6    | SCREW, Hex Washer Head, Trilob, 1/4-20 x 1/2 |
| 0070   | 311237YP  | 2    | WHEEL, 2 x 8, Plastic, 1/2                   |
| 0080   | 192050GS  | 2    | E-RING, Axle, 1/2                            |
| 0090   | 7025074SM | 2    | WASHER, Flat, 17/32 x 5/8                    |
| 0100   | 1750638YP | 2    | CAPSCREW, Hex Washer Head, 10-24 x 3/4       |
| 0110   | 885118YP  | 2    | NUT, U-Style Speed, #10                      |
| 0120   | 1739752YP | 1    | COVER, Chute                                 |
| 0130   | 316042MA  | 1    | SCREW, Hex Washer Head, #10-HL x 5/8         |
| 0140   | 1751540YP | 2    | HUBCAP                                       |

Not for  
Reproduction

### Footnotes

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

1696162-00 - 922S

1696252-00 - BSS822E

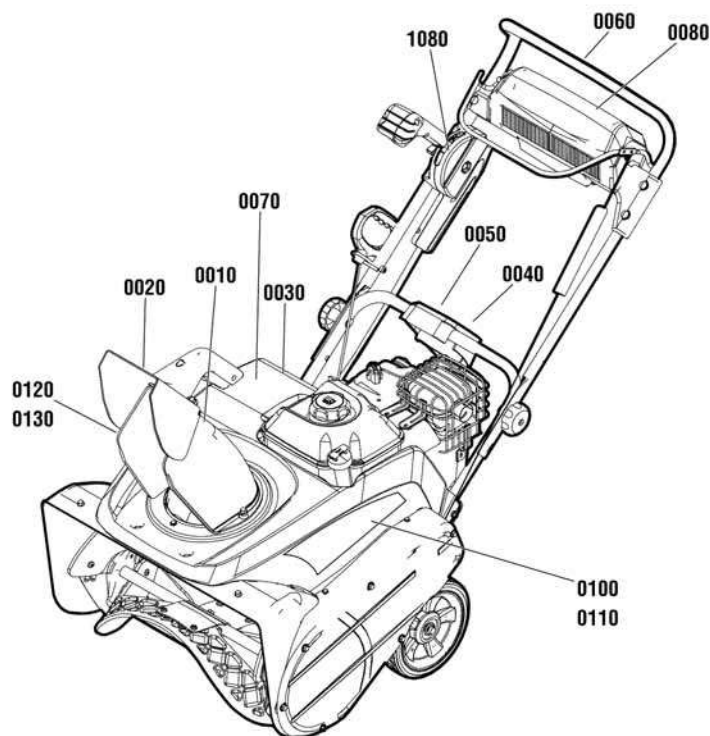
# Decals Group

NOTE: Unless noted otherwise, use the standard hardware torque specification chart.

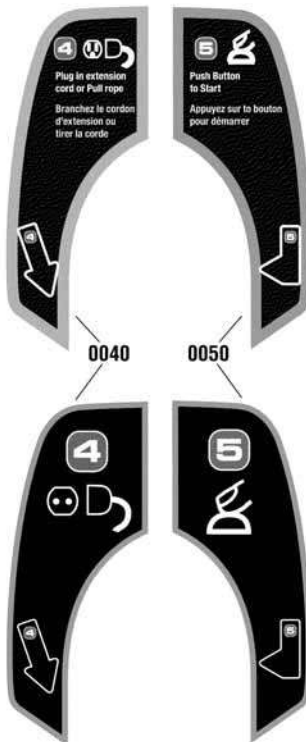
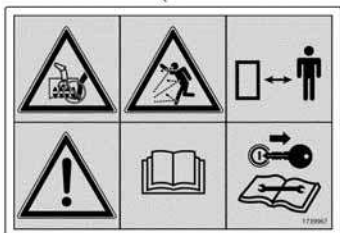
2990437



0020



0010



0040

0050



0030



0060

The above parts group applies to the following Mfg. Nos.:

- 1696161-00 - 822S
- 1696162-00 - 922S
- 1696252-00 - BSS822E



## Decals Group

| REF NO | PART NO.  | QTY. | DESCRIPTION                                 |
|--------|-----------|------|---|
| 0010   | 1739966YP | 1    | DECAL, Chute, FR/ENG                        |
| 0010   | 1739967YP | 1    | DECAL, Chute, No Text (Export Only)         |
| 0020   | 1737865YP | 1    | DECAL, Danger, Chute, FR/ENG                |
| 0020   | 1727207SM | 1    | DECAL, Danger, Chute, No Text (Export Only) |
| 0030   | 1739970YP | 1    | DECAL, Step 1-2-3                           |
| 0030   | 1739971YP | 1    | DECAL, Step 1-2-3, No Text (Export Only)    |
| 0040   | 1750734YP | 1    | DECAL, 4 Start, FR/ENG                      |
| 0040   | 1750735YP | 1    | DECAL, 4 Start, No Text (Export Only)       |
| 0050   | 1750736YP | 1    | DECAL, 5 Start, FR/ENG                      |
| 0050   | 1750737YP | 1    | DECAL, 5 Start, No Text (Export Only)       |
| 0060   | 1739977YP | 1    | DECAL, Bail Engagement                      |
| 0070   | 1754960YP | 1    | DECAL, Top Cover, 822S                      |
| 0070   | 1754513YP | 1    | DECAL, Top Cover, 922S                      |
| 0070   | 1754959YP | 1    | DECAL, Top Cover, 822E                      |
| 0080   | 1754514YP | 1    | DECAL, Light Bar                            |
| 0100   | 1752750YP | 1    | DECAL, Briggs & Stratton, LH                |
| 0110   | 1752751YP | 1    | DECAL, Briggs & Stratton, RH                |
| 0120   | 1750658YP | 1    | DECAL, Logo, Chute, RH                      |
| 0130   | 1750657YP | 1    | DECAL, Logo, Chute, LH                      |
| 1080   | 1739976YP | 1    | DECAL, Chute Rotation                       |

Not for  
Reproduction

## Footnotes

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

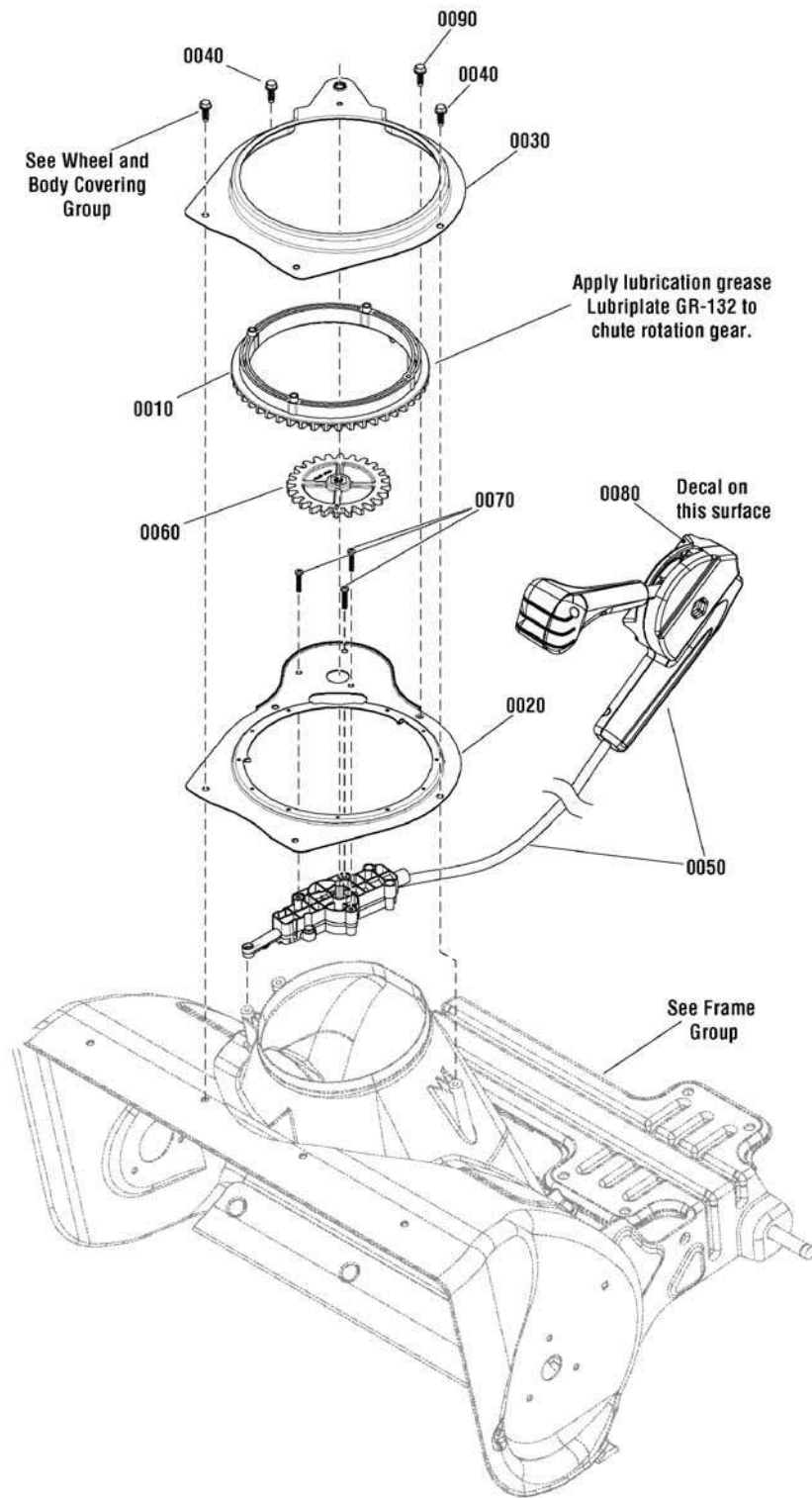
1696162-00 - 922S

1696252-00 - BSS822E

## Chute Rotation Group - Remote

2988904

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.



The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S

1696162-00 - 922S

1696252-00 - BSS822E



## **Chute Rotation Group - Remote**

| <b>REF NO</b> | <b>PART NO.</b> | <b>QTY.</b> | <b>DESCRIPTION</b>                           |
|---------------|-----------------|-------------|--|
| 0010          | 1739123YP       | 1           | GEAR, Chute Rotation                         |
| 0020          | 1739364YP       | 1           | PLATE, Chute Mounting                        |
| 0030          | 1739365YP       | 1           | RETAINER, Chute Gear                         |
| 0040          | 7091081SM       | 2           | SCREW, Hi-Low, 1/4-15 x 3/4                  |
| 0050          | 1739754YP       | 1           | CHUTE ROTATION ASSEMBLY, Remote              |
| 0060          | 1738955YP       | 1           | GEAR, Chute Rotation                         |
| 0070          | 7100225YP       | 4           | SCREW, Phillips Pan, Plastite, 8-16 x 1      |
| 0080          | 1739976YP       | 1           | DECAL, Chute Rotation                        |
| 0090          | 1750447YP       | 1           | SCREW, Hex Washer Head, Trilob, 1/4-20 x 1/2 |

Not for  
Reproduction

### **Footnotes**

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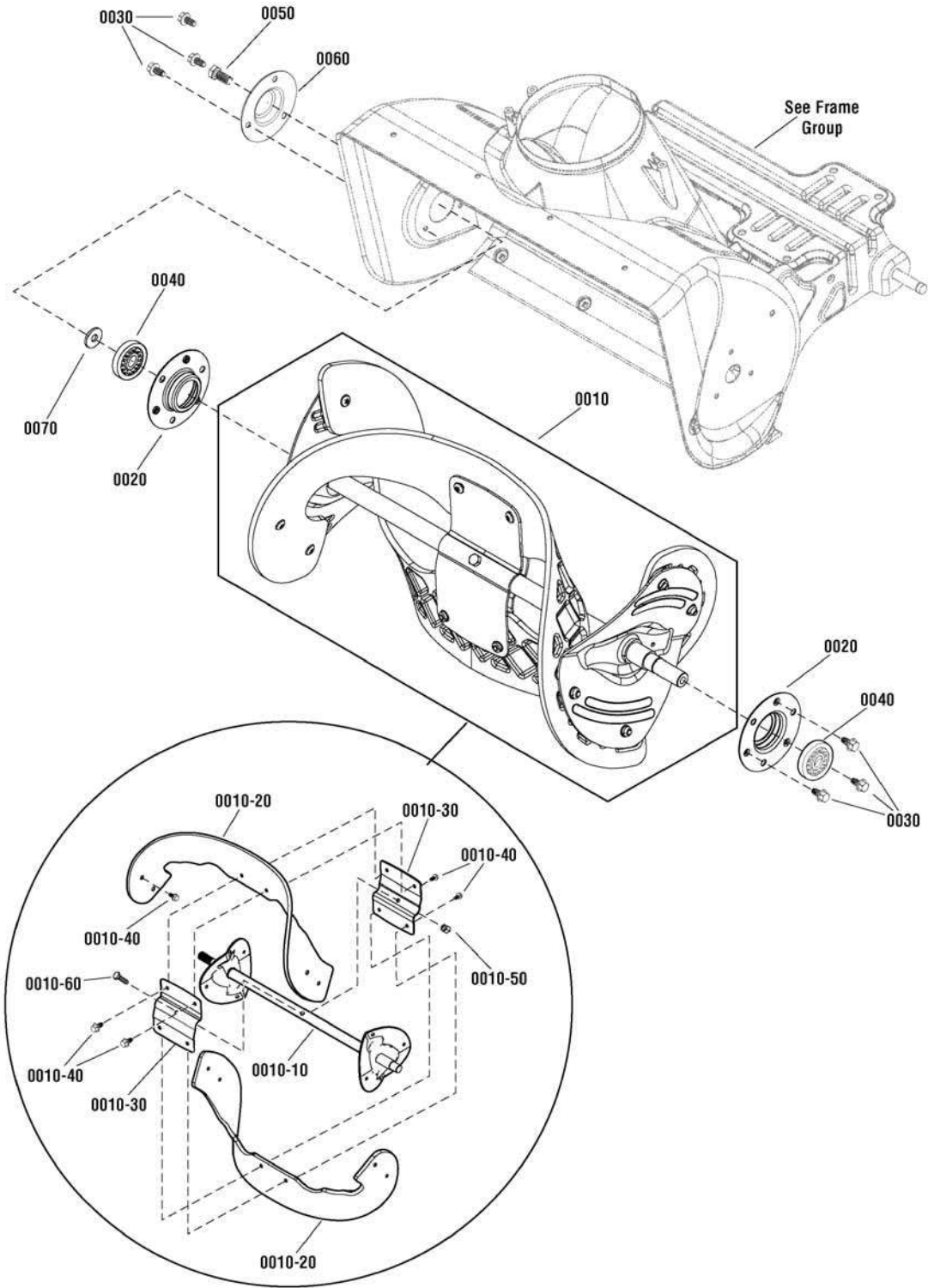
**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S  
1696162-00 - 922S  
1696252-00 - BSS822E

# Auger Group

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.

2988895



The above parts group applies to the following Mfg. Nos.:

- 1696161-00 - 822S
- 1696162-00 - 922S
- 1696252-00 - BSS822E

## Auger Group

| REF NO  | PART NO.   | QTY. | DESCRIPTION  |
|---------|------------|------|--|
| 0010    | 1739724AYP | 1    | AUGER ASSEMBLY, Complete (Incl. Ref. Nos. 0010-10, 0010-20, 0010-30, 0010-40, 0010-50 & 0010-60) |
| 0010-10 | -----      | 1    | * AUGER SHAFT ASSEMBLY   |
| 0010-20 | -----      | 2    | ** FLIGHT, Auger (Included with Ref. No. 0500)   |
| 0010-30 | -----      | 2    | * PLATE, Auger, Center   |
| 0010-40 | 7090999SM  | 12   | SCREW, Pan Head Torx 1/4 x 5/8 (Included with Ref. No. 0500)                                     |
| 0010-50 | 7091603SM  | 1    | NUT, Nylock, 1/4-20  |
| 0010-60 | 51374YP    | 1    | CAPSCREW, Hex Head, 1/4-20 x 1-1/2, G5   |
| 0020    | 1739228YP  | 2    | RETAINER, Bearing  |
| 0030    | 1750447YP  | 6    | SCREW, Hex Washer Head, Trilob, 1/4-20 x 1/2   |
| 0040    | 1705897SM  | 2    | BEARING, Ball, 11/16 x 1-9/16 x 15/32  |
| 0050    | 22142GS    | 1    | CAPSCREW, Hex Head, 5/16-18 x 3/4  |
| 0060    | 1739229AYP | 1    | CAP, Bearing   |
| 0070    | 7900022YP  | 1    | WASHER, Flat, 7/8 x 21/64  |
| 0500    | 1687489YP  | 1    | KIT, Auger Flight (Incl. Ref. Nos. 0010-20 & 0010-40)  |

Not for  
Reproduction

### Footnotes

\* Not a servicable part, order complete Auger Assembly.

\*\* Not a servicable part, order Auger Flight Kit.

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### The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S

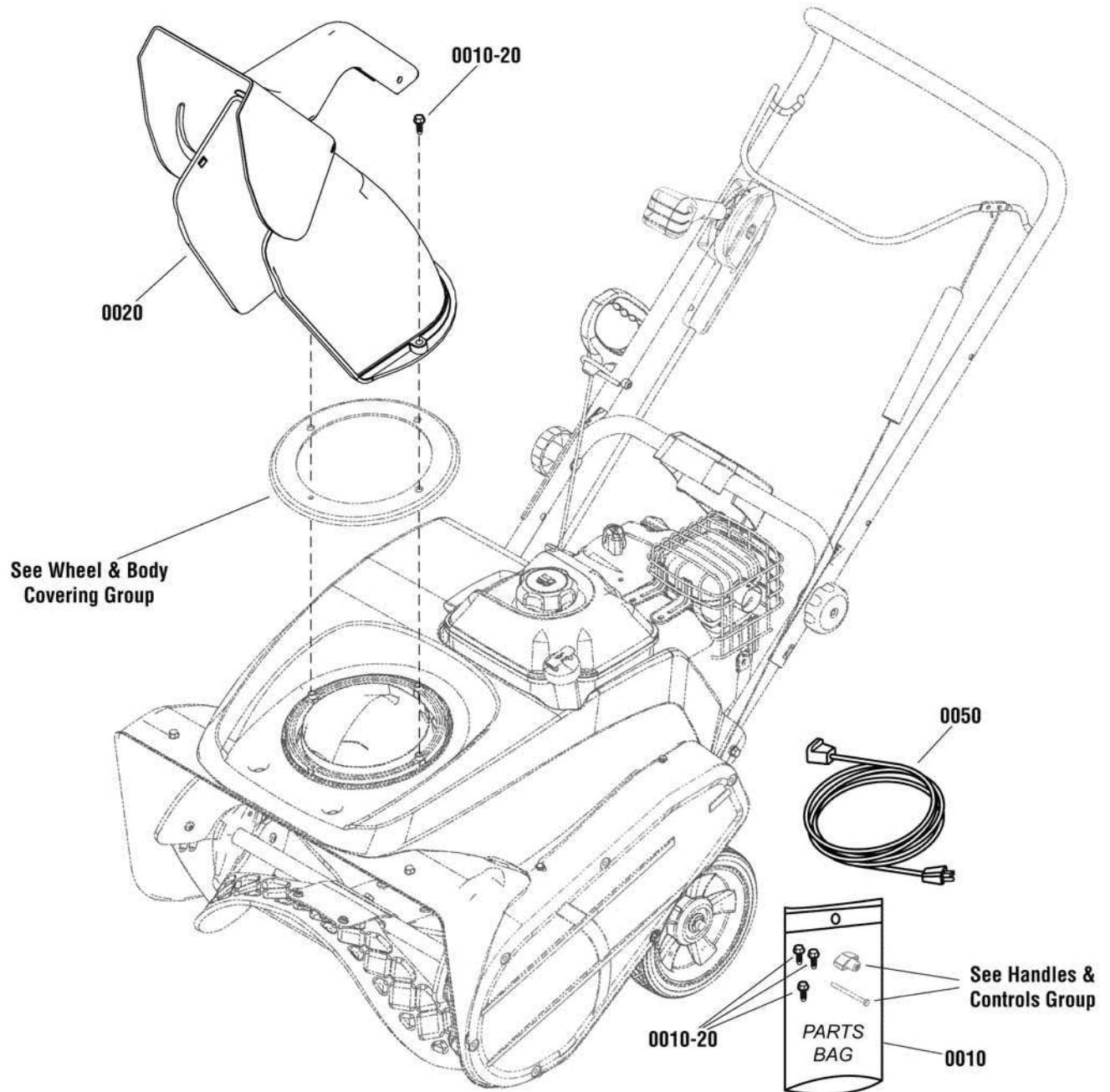
1696162-00 - 922S

1696252-00 - BSS822E

## Chute Group - Remote

2989492

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.



The above parts group applies to the following Mfg. Nos.:

1696161-00 - 822S  
1696162-00 - 922S  
1696252-00 - BSS822E

## **Chute Group - Remote**

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| <b>REF NO</b> | <b>PART NO.</b> | <b>QTY.</b> | <b>DESCRIPTION</b>                            |
|---------------|-----------------|-------------|---|
| 0010          | 1751006YP       | 1           | PARTS BAG                                     |
| 0010-20       | 1751399YP       | 3           | SCREW, Hex Washer Head, HI-LO, 1/4-15 x 1-1/4 |
| 0020          | 1739522YP       | 1           | CHUTE ASSEMBLY                                |
| 0050          | 6219MA          | 1           | CORD, Electric (North American models only)   |

Not for  
Reproduction

### **Footnotes**

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**The above parts group applies to the following Mfg. Nos.:**

1696161-00 - 822S

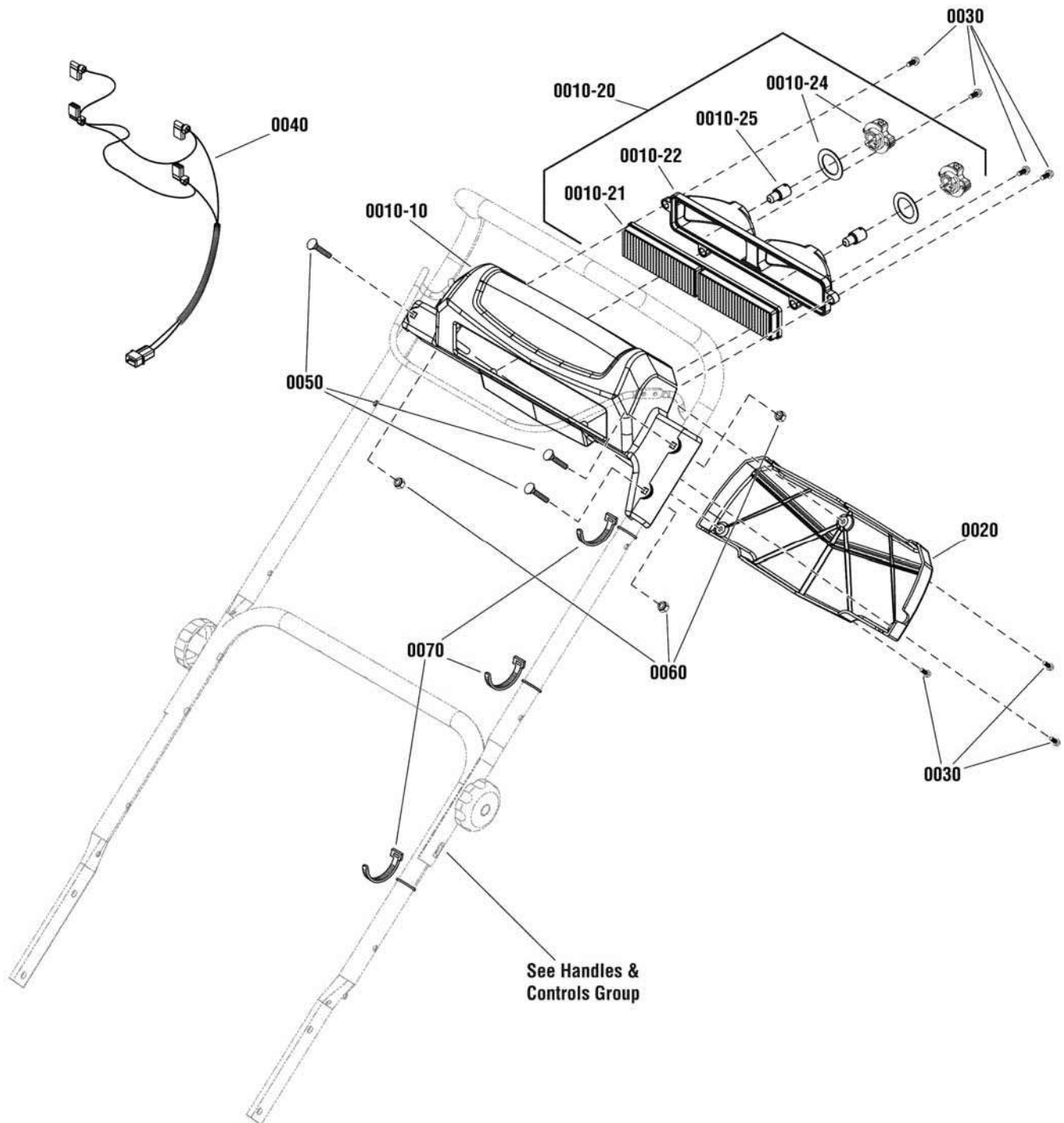
1696162-00 - 922S

1696252-00 - BSS822E

## Light Panel Group

NOTE: Unless noted otherwise,  
use the standard hardware torque  
specification chart.

2990439



The above parts group applies to the following Mfg. Nos.:

1696162-00 - 922S

1696252-00 - BSS822E

## Light Panel Group

| REF NO  | PART NO.  | QTY. | DESCRIPTION  |
|---------|-----------|------|--|
| 0010-10 | 1754563YP | 1    | PANEL  |
| 0010-20 | 1736176YP | 1    | HEADLIGHT ASSEMBLY (Includes Ref. Nos. 0011-10, 0011-20, 0011-30, 0011-40 & 0011-50) |
| 0010-21 | 1736177YP | 1    | LENS, Twin Light   |
| 0010-22 | 1736178YP | 1    | DEFLECTOR  |
| 0010-24 | 1736180YP | 2    | SOCKET & GASKET ASSEMBLY, Headlight  |
| 0010-25 | 1736181YP | 2    | BULB, HEADLIGHT 12V 15W (1156)   |
| 0020    | 1750875YP | 1    | COVER, Light Panel   |
| 0030    | 7091105YP | 7    | SCREW, Hex Washer Head, #10-16 x 1/2   |
| 0040    | 1738286YP | 1    | WIRING HARNESS, Headlight  |
| 0050    | 80003564  | 3    | BOLT, 1/4-20 X 1-1/2, G5   |
| 0060    | 80002730  | 3    | NUT, Nylock, 1/4-20  |
| 0070    | 7024649   | 4    | WIRE TIE, 11   |

Not for  
Reproduction

### Footnotes

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**The above parts group applies to the following Mfg. Nos.:**

1696162-00 - 922S

1696252-00 - BSS822E

Not for  
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Reproduction

Not for  
Reproduction

# Hardware Identification & Torque Specifications

| Torque Specification Chart                             |           |      |           |      |            |      |            |      |
|--|-----------|------|-----------|------|------------|------|------------|------|
| FOR STANDARD METRIC MACHINE HARDWARE (Tolerance ± 20%) |           |      |           |      |            |      |            |      |
| Property Class   | 5.6       |      | 8.8       |      | 10.9       |      | 12.9       |      |
|  | Class 5.6 |      | Class 8.8 |      | Class 10.9 |      | Class 12.9 |      |
| Size Of Hardware                                       | in/lbs    |      | in/lbs    |      | in/lbs     |      | in/lbs     |      |
|  | ft/lbs    | Nm.  | ft/lbs    | Nm.  | ft/lbs     | Nm.  | ft/lbs     | Nm.  |
| M3   | 5.88      | .56  | 13.44     | 1.28 | 19.2       | 1.80 | 22.92      | 2.15 |
| M4   | 13.44     | 1.28 | 30.72     | 2.90 | 43.44      | 4.10 | 52.56      | 4.95 |
| M5   | 26.4      | 2.50 | 60.96     | 5.75 | 5.97       | 8.10 | 7.15       | 9.7  |
| M6   | 44.64     | 4.3  | 7.3       | 9.9  | 10.3       | 14   | 12.1       | 16.5 |
| M7   | 5.2       | 7.1  | 12.1      | 16.5 | 16.9       | 23   | 19.9       | 27   |
| M8   | 7.7       | 10.5 | 17.7      | 24   | 25         | 34   | 29         | 40   |
| M10  | 15        | 21   | 35        | 48   | 50         | 67   | 59         | 81   |
| M12  | 26        | 36   | 61        | 83   | 86.2       | 117  | 103        | 140  |
| M14  | 42        | 58   | 101       | 132  | 136        | 185  | 162        | 220  |
| M16  | 64        | 88   | 147       | 200  | 210        | 285  | 250        | 340  |
| M18  | 89        | 121  | 202       | 275  | 287        | 390  | 346        | 470  |
| M20  | 126       | 171  | 290       | 390  | 405        | 550  | 486        | 660  |
| M22  | 169       | 230  | 390       | 530  | 559        | 745  | 656        | 890  |
| M24  | 217       | 295  | 497       | 375  | 708        | 960  | 840        | 1140 |
| M27  | 320       | 435  | 733       | 995  | 1032       | 1400 | 1239       | 1680 |
| M30  | 435       | 590  | 995       | 1350 | 1401       | 1900 | 1681       | 2280 |
| M33  | 590       | 800  | 1349      | 1830 | 1902       | 2580 | 2278       | 3090 |
| M36  | 759       | 1030 | 1740      | 2360 | 2441       | 3310 | 2935       | 3980 |
| M39  | 988       | 1340 | 2249      | 3050 | 3163       | 4290 | 3798       | 5150 |

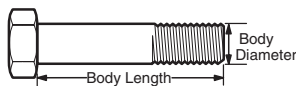
The guides and ruler furnished below are designed to help you select the appropriate hardware.



**Nut, M8**

Thread Diameter (mm)  
Inside Diameter (in)  
Threads per inch

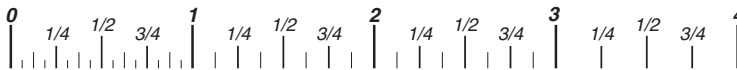
**Nut, 1/2-16**



**Screw, M8- 1.25 x 25**

Thread Diameter (mm)  
Body Diameter  
Distance between threads (mm)  
Threads per inch  
Body Length (mm)  
Body Length (in)

**Screw, 1/2- 16 x 2**



## Standard Hardware Sizing

When a washer or nut is identified as **1/2"** (M8), this is the *Nominal size*, meaning the *inside diameter* is 1/2 inch (8mm metric thread diameter); if a second number is present it represents the *threads per inch* (distance between threads).

When bolt or capscrew is identified as **1/2 - 16 x 2"** (M8 - 1.25 x 50), this means the *Nominal size*, or body diameter is 1/2 inch (8mm metric thread diameter), the second number, 16, represents the *threads per inch*, (*1.25 thread diameter*). The final number is the body length of the bolt or screw, 2 inches (50mm).

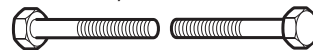
| Torque Specification Chart                      |             |       |             |       |             |         |
|---|-------------|-------|-------------|-------|-------------|---------|
| FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%) |             |       |             |       |             |         |
| Hardware Grade                                  | No Marks    |       | SAE Grade 5 |       | SAE Grade 8 |         |
|   | SAE Grade 2 |       | SAE Grade 5 |       | SAE Grade 8 |         |
| Size Of Hardware                                | in/lbs      |       | in/lbs      |       | in/lbs      |         |
|   | ft/lbs      | Nm.   | ft/lbs      | Nm.   | ft/lbs      | Nm.     |
| 8-32  | 19          | 2.1   | 30          | 3.4   | 41          | 4.6     |
| 8-36  | 20          | 2.3   | 31          | 3.5   | 43          | 4.9     |
| 10-24   | 27          | 3.1   | 43          | 4.9   | 60          | 6.8     |
| 10-32   | 31          | 3.5   | 49          | 5.5   | 68          | 7.7     |
| 1/4-20  | 66          | 7.6   | 8           | 10.9  | 12          | 16.3    |
| 1/4-28  | 76          | 8.6   | 10          | 13.6  | 14          | 19.0    |
| 5/16-18   | 11          | 15.0  | 17          | 23.1  | 25          | 34.0    |
| 5/16-24   | 12          | 16.3  | 19          | 25.8  | 29          | 34.0    |
| 3/8-16  | 20          | 27.2  | 30          | 40.8  | 45          | 61.2    |
| 3/8-24  | 23          | 31.3  | 35          | 47.6  | 50          | 68.0    |
| 7/16-14   | 30          | 40.8  | 50          | 68.0  | 70          | 95.2    |
| 7/16-20   | 35          | 47.6  | 55          | 74.8  | 80          | 108.8   |
| 1/2-13  | 50          | 68.0  | 75          | 102.0 | 110         | 149.6   |
| 1/2-20  | 55          | 74.8  | 90          | 122.4 | 120         | 163.2   |
| 9/16-12   | 65          | 88.4  | 110         | 149.6 | 150         | 204.0   |
| 9/16-18   | 75          | 102.0 | 120         | 163.2 | 170         | 231.2   |
| 5/8-11  | 90          | 122.4 | 150         | 204.0 | 220         | 299.2   |
| 5/8-18  | 100         | 136   | 180         | 244.8 | 240         | 326.4   |
| 3/4-10  | 160         | 217.6 | 260         | 353.6 | 386         | 525.0   |
| 3/4-16  | 180         | 244.8 | 300         | 408.0 | 420         | 571.2   |
| 7/8-9   | 140         | 190.4 | 400         | 544.0 | 600         | 816.0   |
| 7/8-14  | 155         | 210.8 | 440         | 598.4 | 660         | 897.6   |
| 1-8   | 220         | 299.2 | 580         | 788.8 | 900         | 1,244.0 |
| 1-12  | 240         | 326.4 | 640         | 870.4 | 1,000       | 1,360.0 |

## NOTES

- These torque values are to be used for all hardware excluding: locknuts, self-tapping screws, thread forming screws, sheet metal screws and socket head setscrews.
- Recommended seating torque values for locknuts:
  - for prevailing torque locknuts - use 65% of grade 5 torques.
  - for flange whizlock nuts and screws - use 135% of grade 5 torques.
- Unless otherwise noted on assembly drawings, all torque values must meet this specification.

## Common Hardware Types

Hex Head Capscrew



Washer



Lockwasher

Carriage Bolt



Hex Nut

## Wrench & Fastener Size Guide

|                                  |                                  |                                  |  |                                 |
|----------------------------------|----------------------------------|----------------------------------|--|---------------------------------|
| 1/4" Bolt or Nut<br>Wrench—7/16" | 5/16" Bolt or Nut<br>Wrench—1/2" | 3/8" Bolt or Nut<br>Wrench—9/16" | 7/16" Bolt or Nut<br>Wrench (Bolt)—5/8"<br>Wrench (Nut)—11/16" | 1/2" Bolt or Nut<br>Wrench—3/4" |
| M6 Bolt or Nut<br>Wrench—10mm    | M8 Bolt or Nut<br>Wrench—13mm    | M10 Bolt or Nut<br>Wrench—17mm   | M12 Bolt or Nut<br>Wrench—19mm                                 | M14 Bolt or Nut<br>Wrench—22mm  |



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