



# Parts Manual

Mfg. No: 1690491  
7117H, 17HP Hydro w/Ag Tires and 48"  
Rotary Mower

|                                             |  |
|---------------------------------------------|--|
| 1690502 - 48" Rotary Mower.....             |  |
| 1690480 - 7117H, 17HP Hydro w/Ag Tires..... |  |

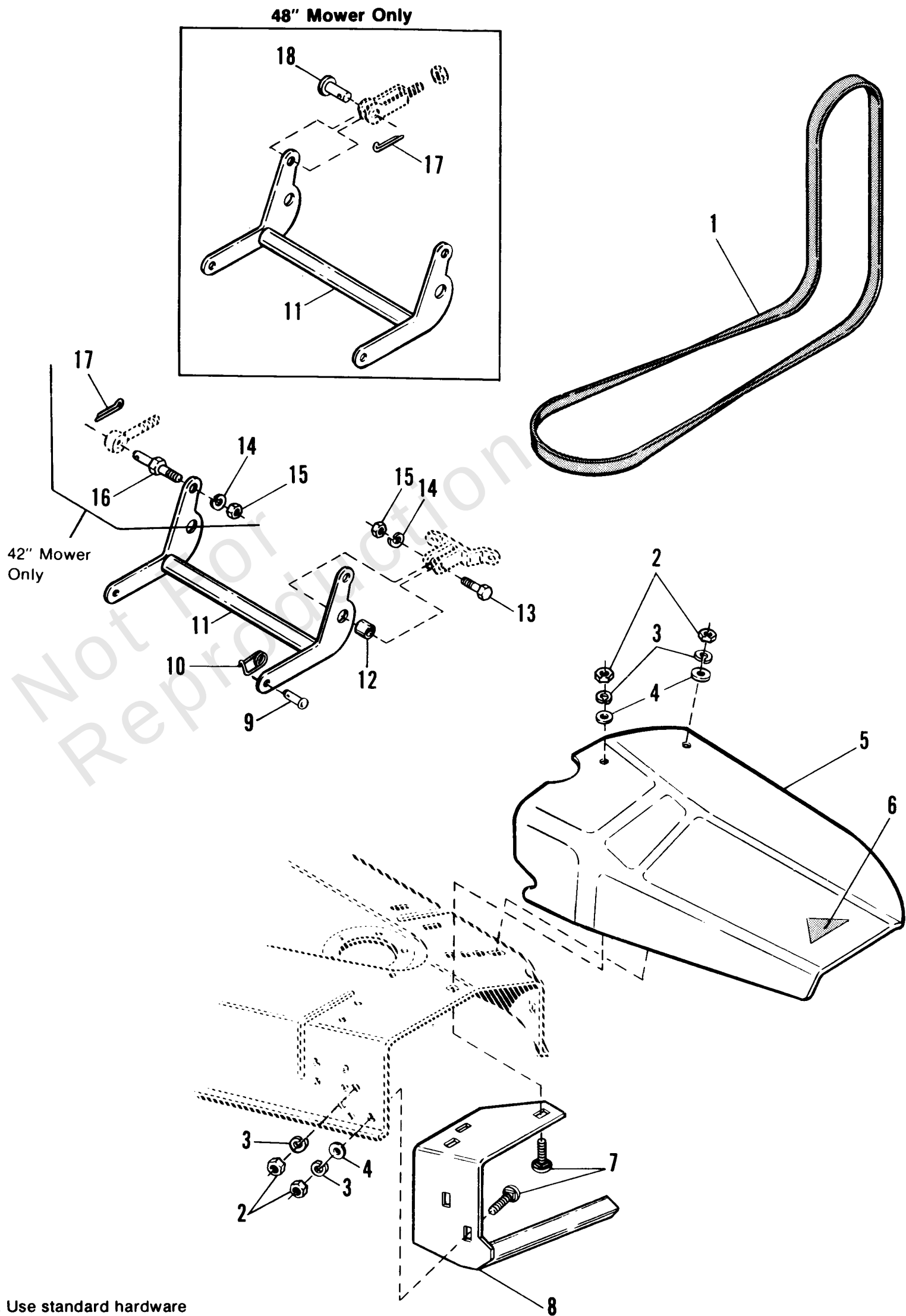
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42" & 48" Rotary Mower - Deflector, Stone Guard & Rocker Arm Group

Note: Unless noted otherwise, use the standard torque specifications

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## 42" & 48" Rotary Mower - Deflector, Stone Guard & Rocker Arm Group

| REF NO | PART NO   | QTY | DESCRIPTION                       |
|--------|-----------|-----|-----------------------------------|
| 1      | 1666801SM | 1   | V-BELT, HA, 80.10                 |
| 1      | 2108508   | 1   | V-BELT, PTO to Mower-48" Mower    |
| 2      | 1916950SM | 4   | NUT, Hex, 38-16                   |
| 3      | 1916965SM | 4   | LOCKWASHER, 3/8                   |
| 4      | 1924356SM | 3   | WASHER, Special                   |
| 5      | 1651177SM | 1   | DEFLECTOR-42" Mower (Orange)      |
| 5      | 1729542SM | 1   | DEFLECTOR-42" Mower (Black)       |
| 5      | 1651184SM | 1   | DEFLECTOR-48" Mower (Orange)      |
| 5      | 1729543SM | 1   | DEFLECTOR-48" Mower (Black)       |
| 6      | -----     | 1   | DECAL, OPEI                       |
| 7      | 1960268SM | 4   | CARRIAGE BOLT, 3/8-16 x 1-1/4     |
| 8      | 2174167SM | 1   | GUARD ASSY., Stone-42" Mower      |
| 8      | 2174127SM | 1   | GUARD ASSY., Stone-48" Mower      |
| 9      | 2156306SM | 2   | PIN-RND HD DRILLED .3             |
| 10     | 2176012SM | 2   | PIN, Clip                         |
| 11     | 2172468A  | 1   | ROCKER ARM ASSY.                  |
| 12     | 1725601SM | 2   | SPACER                            |
| 13     | 1921176SM | 2   | CAPSCREW, Hex Hd., 1/2-13 x 1-1/4 |
| 14     | 1916966SM | 4   | LOCKWASHER, Spring, 1/2           |
| 15     | 1913744SM | 4   | NUT, Hex Jam, 1/2-13              |
| 16     | 1651516SM | 2   | PIN, Pivot (42" Mower only)       |
| 17     | 1918452SM | 2   | COTTER PIN, 1/8 x 1               |
| 18     | 1960116SM | 2   | PIN, Yoke, (48" Mower only)       |

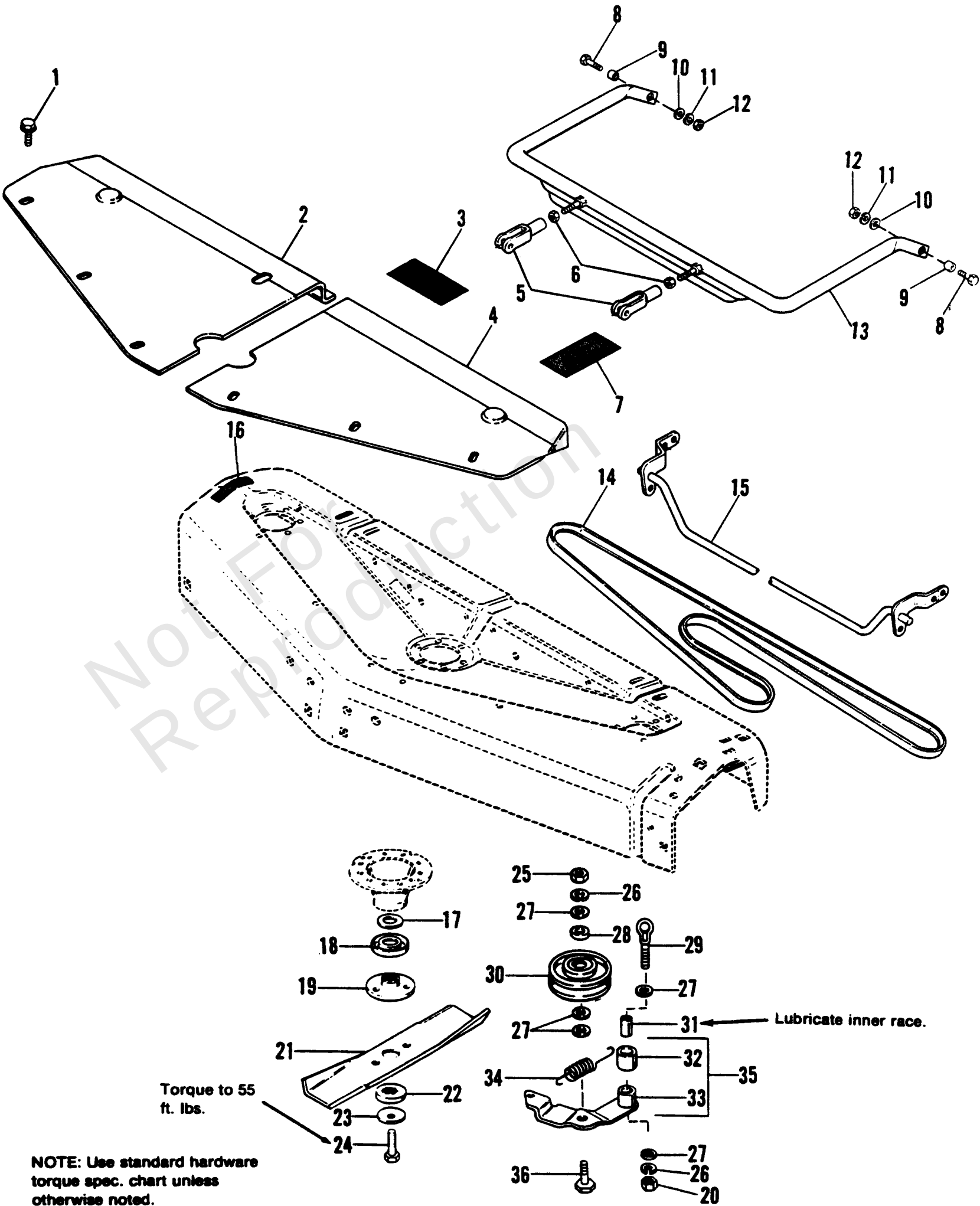
### Footnotes:

Note:\* Not a servicable part.

48" Rotary Mower - Cover, Drive & Bail Group

Note: Unless noted otherwise, use the standard torque specifications

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## 48" Rotary Mower - Cover, Drive & Bail Group

| REF NO | PART NO    | QTY | DESCRIPTION                                        |
|--------|------------|-----|----------------------------------------------------|
| 1      | 1929000SM  | 14  | SCREW. Hex, Taptite, 1/4-20 x 3/8                  |
| 2      | 1679957ASM | 1   | COVER. R.H.                                        |
| 3      | 1709067SM  | 1   | DECAL, Belt Installation                           |
| 4      | 1676067ASM | 1   | COVER. L.H.                                        |
| 5      | 2154304SM  | 2   | YOKE                                               |
| 6      | 1919262SM  | 2   | NUT, Hex, Jam, 1/2-20                              |
| 7      | 1704277SM  | 2   | DECAL, Danger                                      |
| 8      | 1921176SM  | 2   | CAPSCREW, Hex Hd., 1/2-13 x 1-1/4                  |
| 9      | 1725601SM  | 2   | SPACER                                             |
| 10     | 1918430    | 2   | WASHER. Plain, 7/16                                |
| 11     | 1916966SM  | 2   | LOCKWASHER, Spring, 1/2                            |
| 12     | 1916951SM  | 2   | NUT, Hex, Full, 1/2-13                             |
| 13     | 2172473ASM | 1   | BAIL ASSY.                                         |
| 14     | 1657044SM  | 1   | BELT, "V", Arbor Drive                             |
| 15     | 2172015ASM | 1   | ROCKER ARM ASSY.                                   |
| 16     | 1704276SM  | 1   | DECAL-DANGER DO NOT P                              |
| 17     | 1700230SM  | 3   | WASHER, Shim                                       |
| 18     | 1700229SM  | 3   | SHIELD. Grass                                      |
| 19     | 1655777SM  | 3   | ADAPTOR, Blade                                     |
| 20     | 1916950SM  | 2   | NUT, Hex, 3/8-16                                   |
| 21     | 1656143ASM | 3   | BLADE. 48" Mower                                   |
| 22     | 1656927SM  | 3   | WASHER, Spline                                     |
| 23     | 1656916SM  | 3   | WASHER, SPRING 0.475I                              |
| 24     | 2823471SM  | 3   | CAPSCREW, Hex Hd., 7/16-14 x 1                     |
| 25     | 1917421SM  | 2   | NUT, Hex, Jam, 3/8-16                              |
| 26     | 1916965SM  | 2   | LOCKWASHER, 3/8                                    |
| 27     | 1919326SM  | 5   | WASHER, 5/16                                       |
| 28     | 1666294SM  | 2   | SPACER                                             |
| 29     | 2171815SM  | 1   | EYE BOLT                                           |
| 30     | 1685144SM  | 1   | PULLEY ASSY.<br>-Ref. No. 30 Includes Ref. No. 28. |
| 31     | 1729274SM  | 1   | RACE, Inner                                        |
| 32     | 1657682SM  | 1   | BUSHING                                            |
| 33     | -----      | 1   | LEVER ASSY., Idler (See Ref. No. 35)               |
| 34     | 1656936SM  | 1   | SPRING                                             |
| 35     | 1685415SM  | 1   | LEVER ASSY., Idler (w/Bushing)                     |
| 36     | 1960032SM  | 1   | SCREW, Hex Head, 3/8-16 x 1 1/4                    |

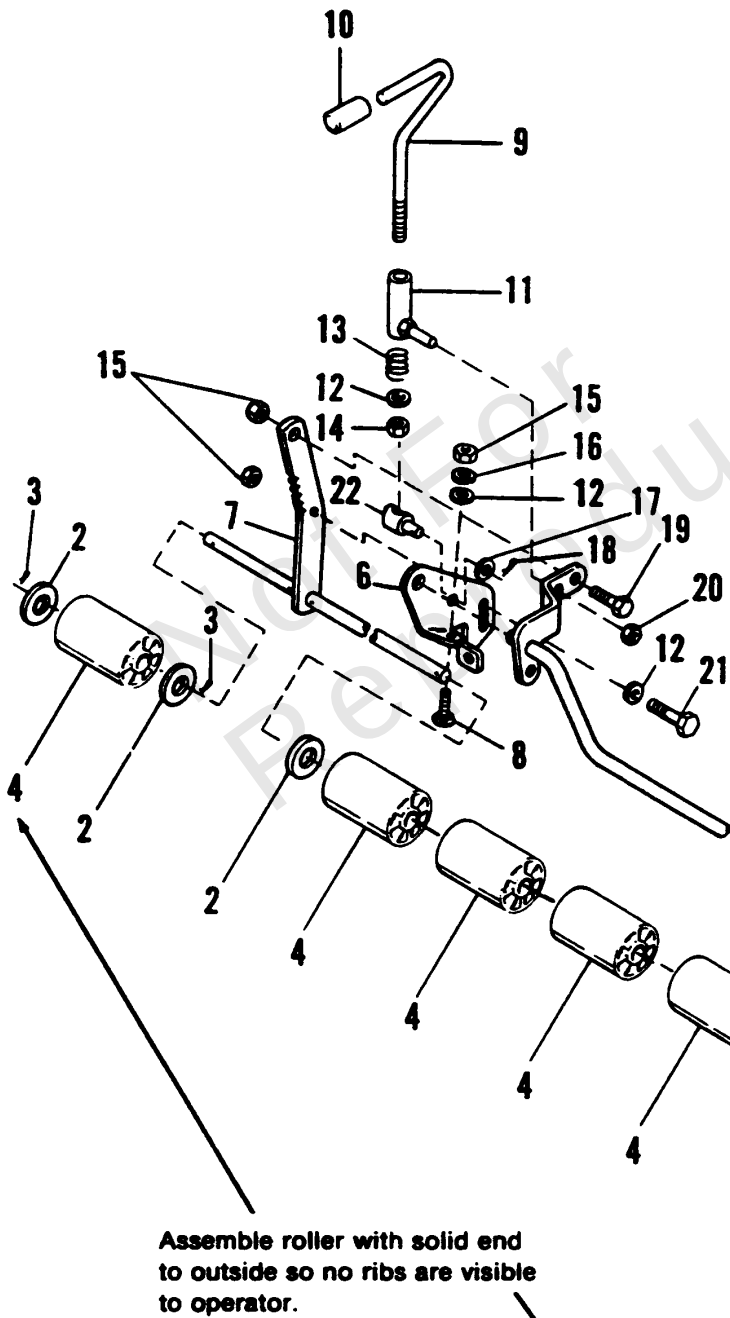
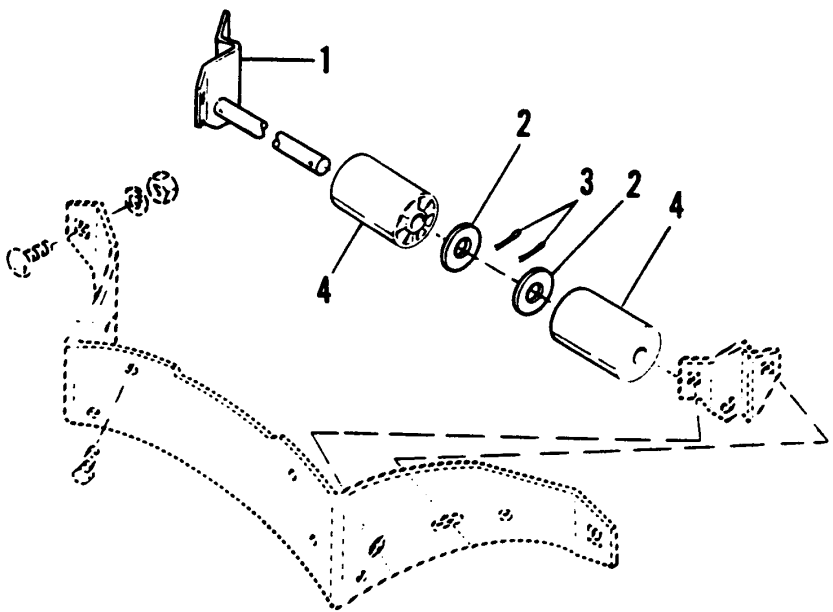
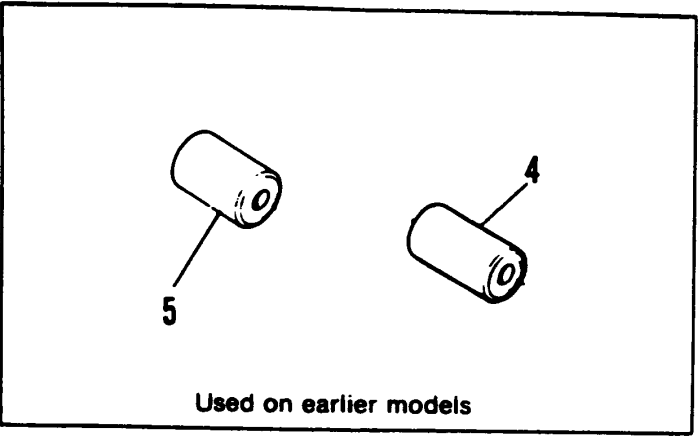
### Footnotes:

Note:\* Not serviced separately, order complete Lever Assembly.

# 48" Rotary Mower - Height Adjuster & Rollers Group

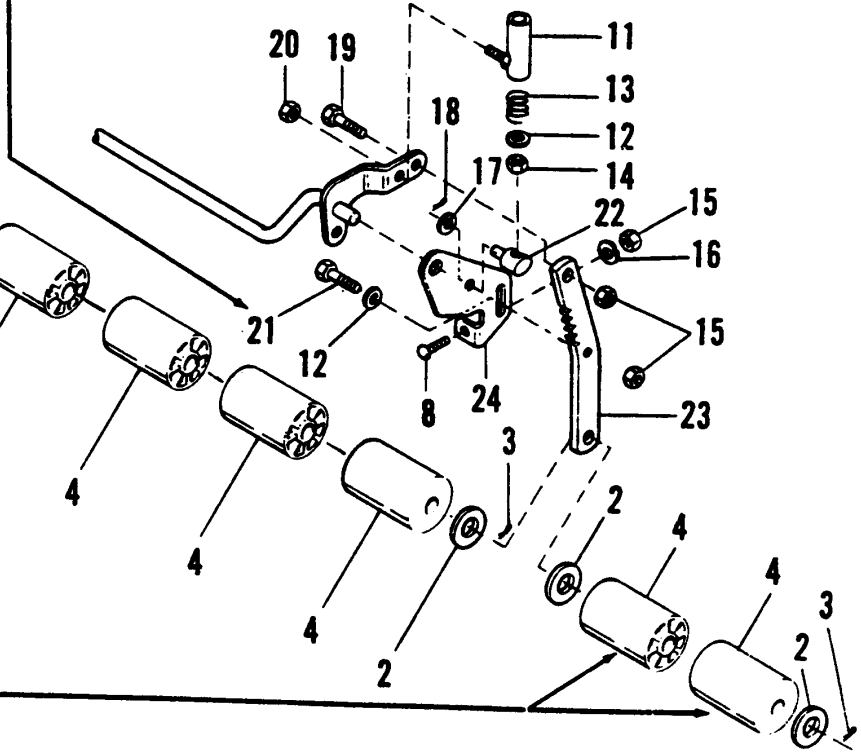
Note: Unless noted otherwise, use the standard torque specifications

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NOTE: Thread capscrew (Ref. No. 21) into roller bar and lock in place with nut (Ref. No. 15) must have sliding clearance between roller bar and roller bracket after assembled.

NOTE: Use standard hardware torque spec. chart unless otherwise noted.





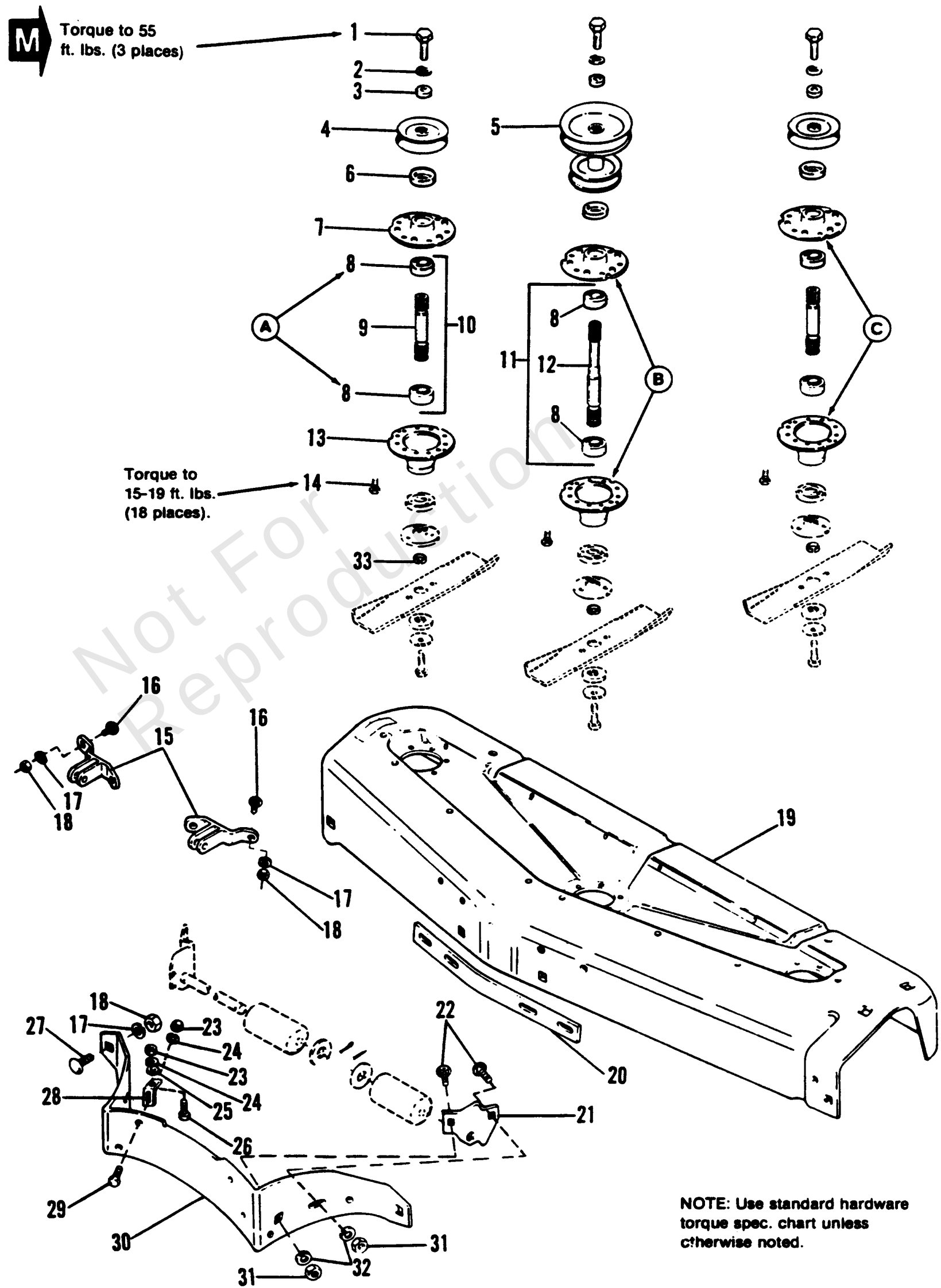
## 48" Rotary Mower - Height Adjuster & Rollers Group

| REF NO | PART NO    | QTY | DESCRIPTION                                           |
|--------|------------|-----|-------------------------------------------------------|
| 1      | 2108454ASM | 1   | BRACKET & SHAFT ASSY.                                 |
| 2      | 1960020SM  | 8   | WASHER, Plain, 21/32                                  |
| 3      | 1918458SM  | 6   | PIN, Cotter. 3/16 x 1                                 |
| 4      | 1668513SM  | 11  | ROLLER, .652 ID, 2.50 OD, 4.10 LG                     |
| 5      | 2108432SM  | 5   | ROLLER, 2-1/2 x 6-3/4<br>-Used before Serial no. 9509 |
| 6      | 2172047SM  | 1   | BRACKET, Roller, R.H.                                 |
| 7      | 1668541ASM | 1   | SHAFT ASSY., Roller                                   |
| 8      | 1931348SM  | 4   | BOLT, Carriage 3/8-16 x 3/4                           |
| 9      | 1650394SM  | 2   | HANDLE, Adjusting                                     |
| 10     | 1651820SM  | 2   | GRIP                                                  |
| 11     | 2108241SM  | 2   | SOCKET ASSY.                                          |
| 12     | 1924940SM  | 6   | WASHER, Plain, 3/8                                    |
| 13     | 2108360SM  | 2   | SPRING                                                |
| 14     | 1917421SM  | 2   | NUT, Hex, Jam, 3/8-16                                 |
| 15     | 1916950SM  | 8   | NUT, Hex, Full, 3/8-16                                |
| 16     | 1916965SM  | 4   | LOCKWASHER, 3/8                                       |
| 17     | 1924940SM  | 2   | WASHER, 3/8                                           |
| 18     | 1918447SM  | 2   | PIN, Cotter, 3/32 x 3/4                               |
| 19     | 1921210SM  | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1                         |
| 20     | 1930645SM  | 2   | LOCKNUT, Hex, Full, 3/8-16                            |
| 21     | 1923490SM  | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1                         |
| 22     | 2108512SM  | 2   | PIVOT                                                 |
| 23     | 1657891ASM | 1   | BAR, Roller                                           |
| 24     | 2172046ASM | 1   | BRACKET, Roller, L.H.                                 |

48" Rotary Mower - Housing & Arbor Group

Note: Unless noted otherwise, use the standard torque specifications

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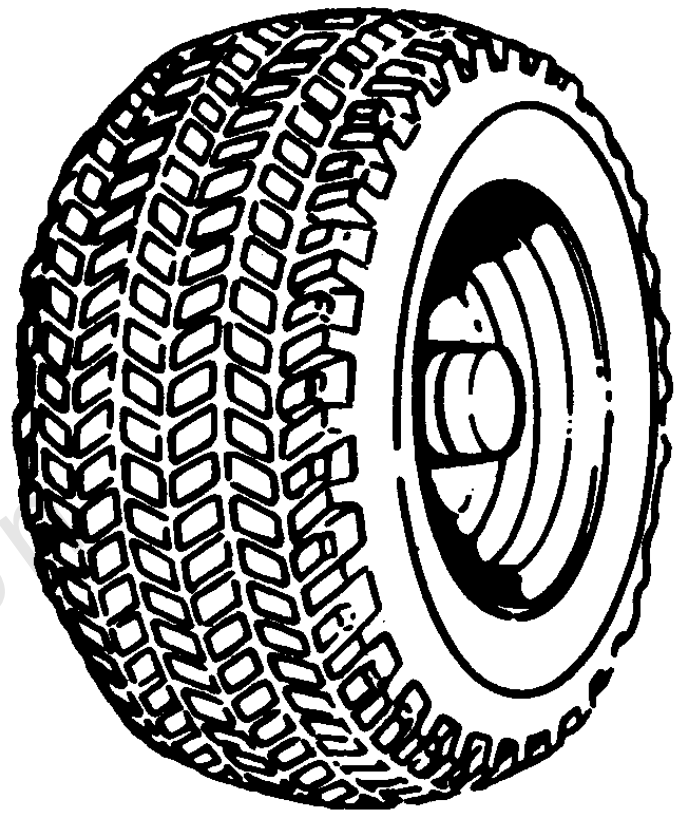
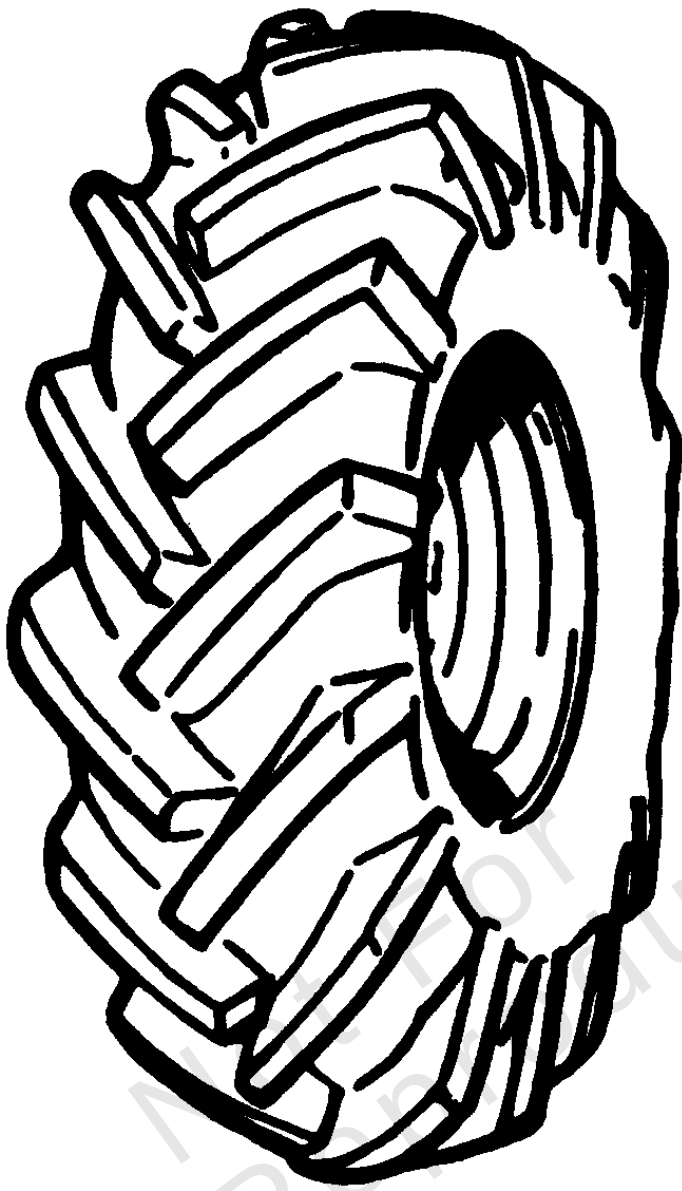
## 48" Rotary Mower - Housing & Arbor Group

| REF NO | PART NO    | QTY | DESCRIPTION                                                   |
|--------|------------|-----|---------------------------------------------------------------|
| 1      | 2823471SM  | 3   | CAPSCREW, Hex Hd., 7/16-14 x 1-1/4                            |
| 2      | 1918199SM  | 3   | LOCKWASHER, 7/16                                              |
| 3      | 1933263SM  | 3   | WASHER, Plain, 29/64                                          |
| 4      | 1655867ASM | 2   | PULLEY ASSY., Deck Drive                                      |
| 5      | 1656928SM  | 1   | PULLEY ASSY.                                                  |
| 6      | 1657969SM  | 3   | SHIELD, Bearing Upper, Arbor                                  |
| 7      | 1655729ASM | 3   | HOUSING-ARBOR TOP - B                                         |
| 8      | 2108202SM  | 6   | BEARING, BALL                                                 |
| 9      | 1685245SM  | 2   | SHAFT, Arbor (Includes Ref. No. 33)                           |
| 10     | 1685251SM  | 2   | SHAFT & BEARING ASSY., Side (Includes Ref. No. 8, 9 & 33)     |
| 11     | 1685252SM  | 1   | SHAFT & BEARING ASSY., Center (Includes Ref. Nos. 8, 12 & 33) |
| 12     | 1685246SM  | 1   | SHAFT, Arbor, Center (Includes Ref. No. 33)                   |
| 13     | 1703273ASM | 3   | HOUSING, Bottom                                               |
| 14     | 1664847SM  | 18  | SCREW, Hex Wash. Hd., Taptite, 5/16-18 x 3/4                  |
| 15     | 2108219SM  | 2   | BRACKET ASSY., Front                                          |
| 16     | 1960268SM  | 4   | CARRIAGE BOLT, 3/8-16 x 1-1/4                                 |
| 17     | 1916965SM  | 6   | LOCKWASHER, 3/8                                               |
| 18     | 1916950SM  | 6   | NUT, Hex, Full, 3/8-16                                        |
| 19     | 1685282SM  | 1   | HOUSING KIT-48" 8000                                          |
| 20     | 2108366SM  | 1   | BAR, Reinforcement                                            |
| 21     | 2108224ASM | 1   | BRACKET, Roller, L.H.                                         |
| 22     | 1931333SM  | 2   | CARRIAGE BOLT, 5/16-18 x 3/4                                  |
| 23     | 1916622SM  | 4   | NUT, Hex, Full, 1/4-20                                        |
| 24     | 1916964SM  | 4   | LOCKWASHER, 1/4                                               |
| 25     | 1921319SM  | 2   | WASHER, Plain, 1/4                                            |
| 26     | 1925592SM  | 2   | SCREW, Thd. Forming, 1/4-20 x 3/4                             |
| 27     | 1931348SM  | 2   | BOLT, Carriage 3/8-16 x 3/4                                   |
| 28     | 2108186SM  | 2   | CLIP, Baffle                                                  |
| 29     | 1921959SM  | 2   | CAPSCREW, Hex Hd., 1/4-20 x 5/8                               |
| 30     | 1674774ASM | 1   | BAFFLE                                                        |
| 31     | 1917372SM  | 2   | NUT, Hex, Full, 5/16-18                                       |
| 32     | 1917356SM  | 2   | LOCKWASHER, 5/16                                              |
| 33     | 1672132SM  | 3   | COLLAR, Mower Arbor                                           |

## Ag. Tire & Wheel Group - 7116, & 7117

Note: Unless noted otherwise, use the standard torque specifications

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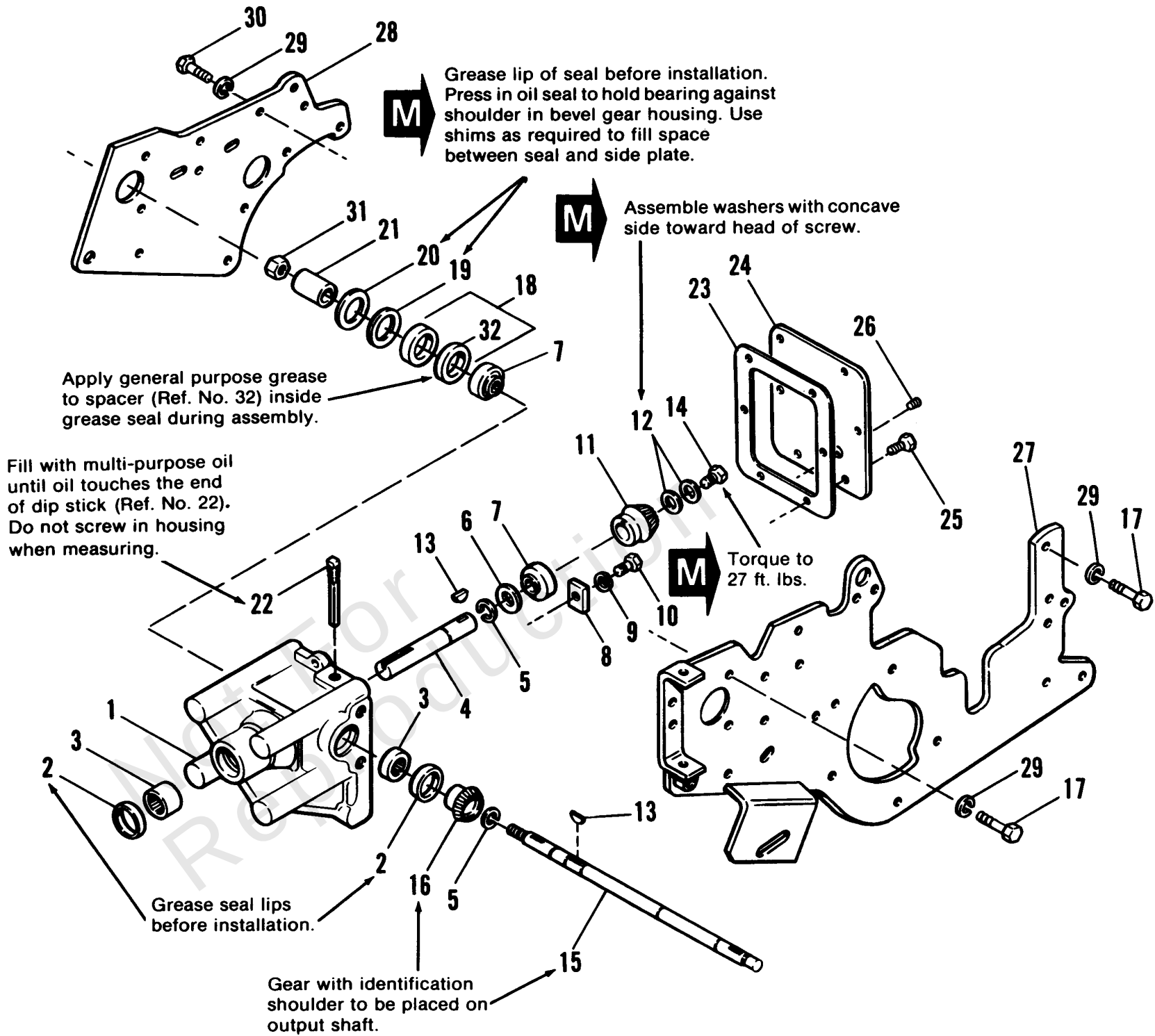
### ***Ag. Tire & Wheel Group - 7116, & 7117***

| REF NO | PART NO   | QTY | DESCRIPTION                                         |
|--------|-----------|-----|-----------------------------------------------------|
|        | 1657752   | 1   | WHEEL & TIRE ASSY., Rear, R.H., 23 x 10-1/2-12, Ag. |
|        | 1657753   | 1   | WHEEL & TIRE ASSY., Rear, L.H., 23 x 10-1/2-12, Ag. |
|        | 1657694SM | 2   | TIRE, 23 x 10-1/2-12, Goodyear                      |
|        | 2157638SM | 2   | TUBE                                                |
|        | 2172353SM | 2   | VALVE STEM & CAP                                    |
|        | 2173430   | 2   | WHEEL                                               |
|        | 1729280SM | 10  | BOLT, Hub                                           |
|        | 171376    | 2   | WHEEL & TIRE ASSY., Front, 16 x 6-1/2-8, Turf       |
|        | 2156305   | 2   | VALVE STEM & CAP                                    |
|        | 2157490   | 2   | TIRE, Front, Goodyear                               |
|        | 2164247SM | 2   | TUBE                                                |
|        | 2171377   | 2   | WHEEL SUBASSY. (Includes Bearing)                   |
|        | 2154393SM | 2   | CUP, Bearing                                        |

Bevel Gear & Side Plate Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.

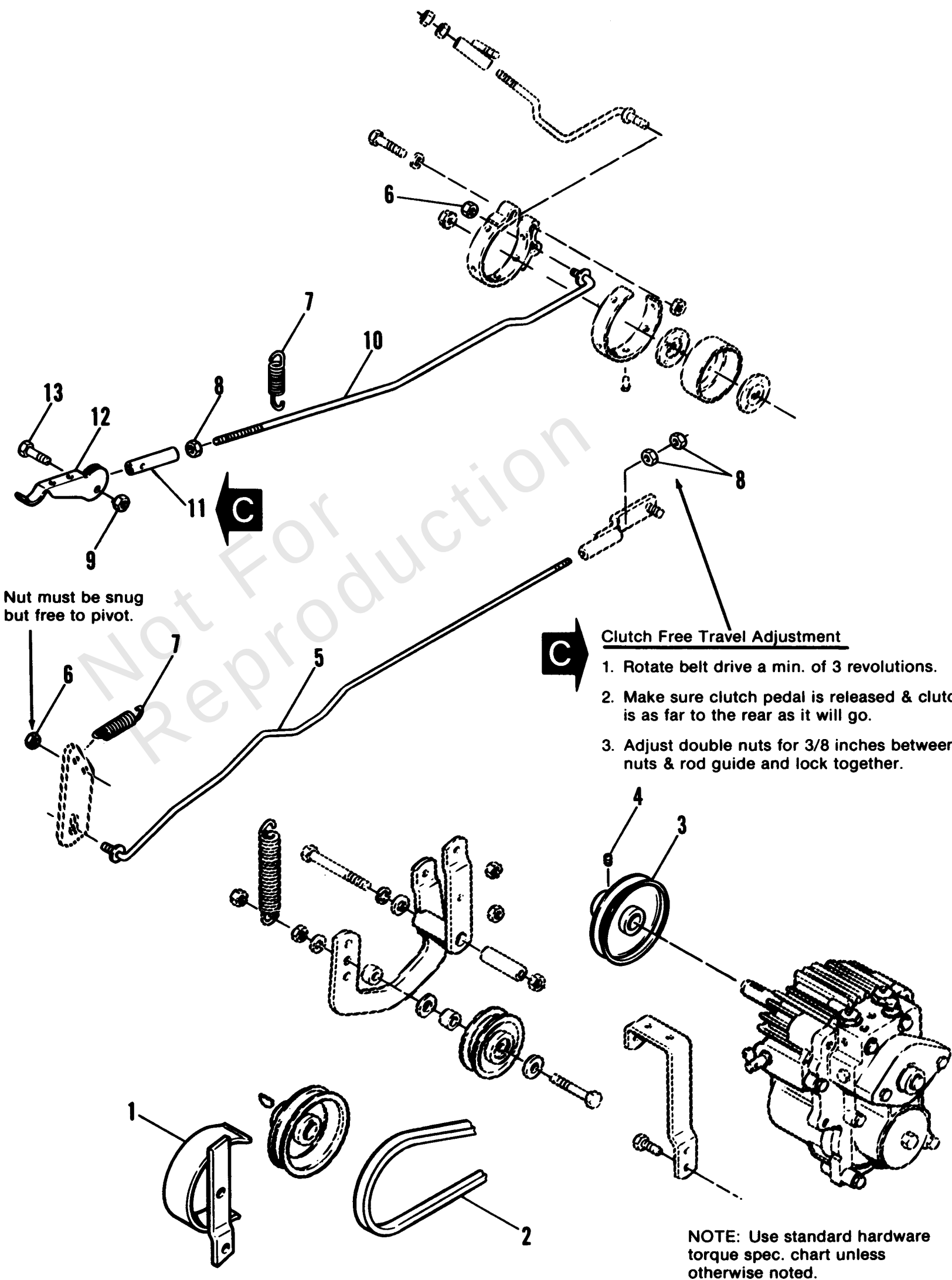
### ***Bevel Gear & Side Plate Group***

| REF NO | PART NO   | QTY | DESCRIPTION                        |
|--------|-----------|-----|------------------------------------|
| 1      | 1656877SM | 1   | HOUSING, Bevel Gear                |
| 2      | 2118117SM | 2   | SEAL, Oil                          |
| 3      | 2154279SM | 2   | BEARING, Needle                    |
| 4      | 2172750SM | 1   | SHAFT, Driver                      |
| 5      | 2172206SM | 2   | RING, Retaining                    |
| 6      | 2172753SM | 1   | WASHER                             |
| 7      | 2172256SM | 2   | BEARING, Ball                      |
| 8      | 2154040SM | 1   | PLATE, Bearing Clamp               |
| 9      | 1917356SM | 1   | LOCKWASHER, 5/16                   |
| 10     | 2825205   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 5/8   |
| 11     | 2172752SM | 1   | GEAR, Bevel Driver                 |
| 12     | 2177649SM | 2   | WASHER                             |
| 13     | 2805123SM | 2   | KEY, Woodruff #9                   |
| 14     | 2154281   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 3/4   |
| 15     | 1685054SM | 1   | SHAFT, Driven                      |
| 16     | 2171796SM | 1   | GEAR, Bevel Driven                 |
| 17     | 2820677   | 6   | CAPSCREW, Hex Hd., 7/16-14 x 1-1/4 |
| 18     | 1685088SM | 1   | SEAL, Oil Kit                      |
| 19     | 2171791SM | 1   | SHIM                               |
| 20     | 2171790SM | 5   | SHIM                               |
| 21     | 2171792SM | 1   | SPACER                             |
| 22     | 2178105SM | 1   | PLUG ASSY.                         |
| 23     | 2154282SM | 1   | GASKET                             |
| 24     | 2178104   | 1   | COVER                              |
| 25     | 2830526   | 6   | CAPSCREW, Hex, 1/4-20 x 5/8        |
| 26     | 2801652SM | 1   | PLUG, Pipe                         |
| 27     | 1671667SM | 1   | PLATE ASSY., Side, L.H.            |
| 28     | 1650414SM | 1   | PLATE ASSY., Side, R.H.            |
| 29     | 2818199   | 12  | LOCKWASHER, 7/16                   |
| 30     | 2820676SM | 6   | CAPSCREW-HEX HD 7/16-              |
| 31     | 2822133   | 1   | LOCKNUT, Hex, Jam, 3/4-16          |
| 32     | 1663111SM | 1   | SPACER, Oil Seal                   |

# Clutch & Brake Control Group

Note: Unless noted otherwise, use the standard torque specifications

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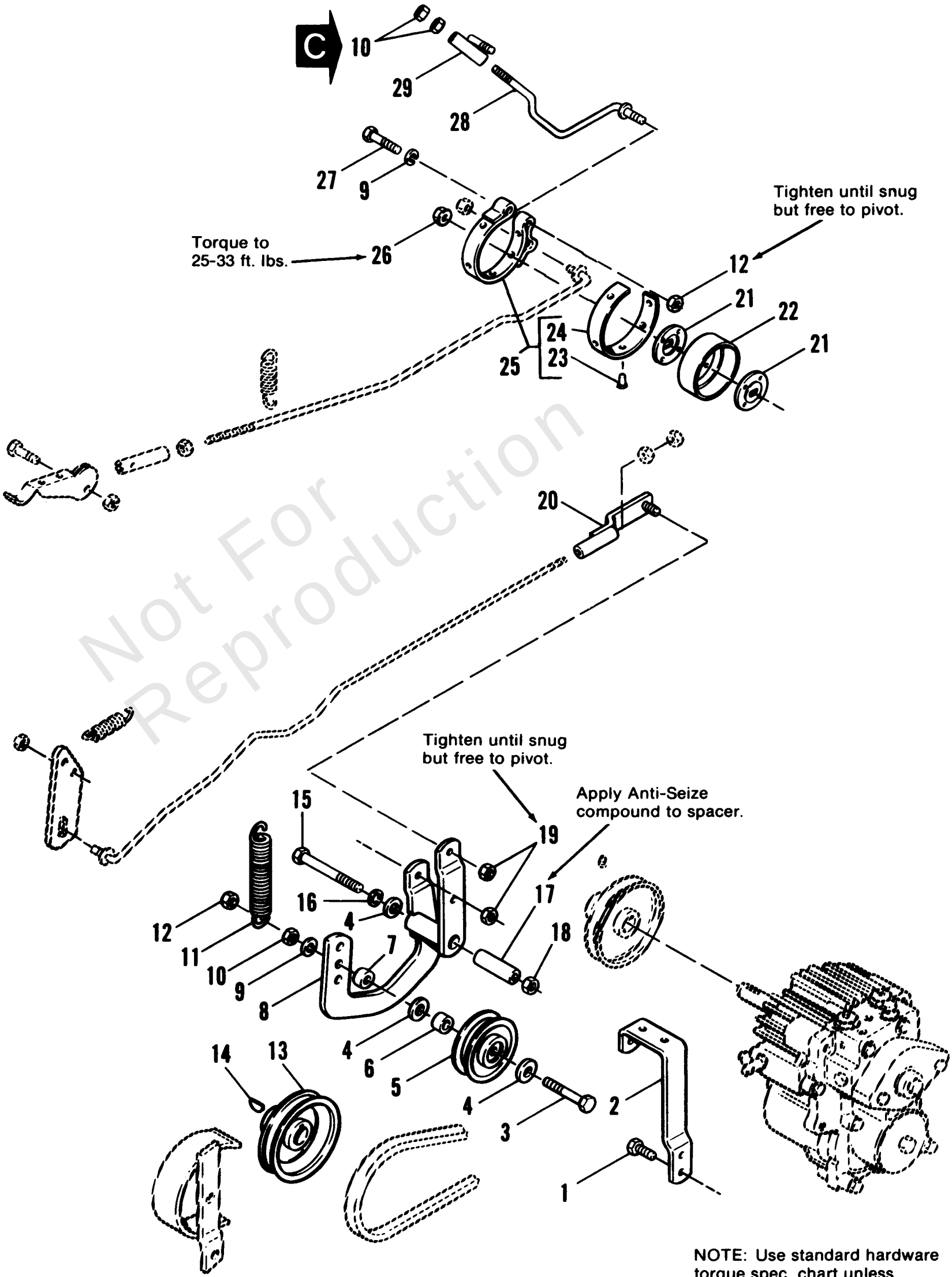
### ***Clutch & Brake Control Group***

| REF NO | PART NO   | QTY | DESCRIPTION                       |
|--------|-----------|-----|-----------------------------------|
| 1      | 2166122SM | 1   | GUARD ASSY.                       |
| 2      | 1650502SM | 1   | "V" BELT, Hydro Pump              |
| 3      | 2166173SM | 1   | PULLEY                            |
| 4      | 2828709   | 1   | SETSCREW, Sq. Hd., 5/16-18 x 3/8  |
| 5      | 1650531SM | 1   | ROD, Clutch                       |
| 6      | 2823362   | 2   | LOCKNUT, Hex, 5/16-18             |
| 7      | 2121037SM | 2   | SPRING                            |
| 8      | 1917372SM | 3   | NUT, Hex, Full, 5/16-18           |
| 9      | 2823329   | 1   | LOCKNUT, Hex, 1/4-20              |
| 10     | 2172461   | 1   | ROD ASSY.                         |
| 11     | 2171994SM | 1   | ROD, End                          |
| 12     | 2172108SM | 1   | LEVER, Parking Brake              |
| 13     | 2826771   | 1   | CAPSCREW, Hex Hd., 1/4-20 x 1-1/4 |

# Clutch & Brake Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



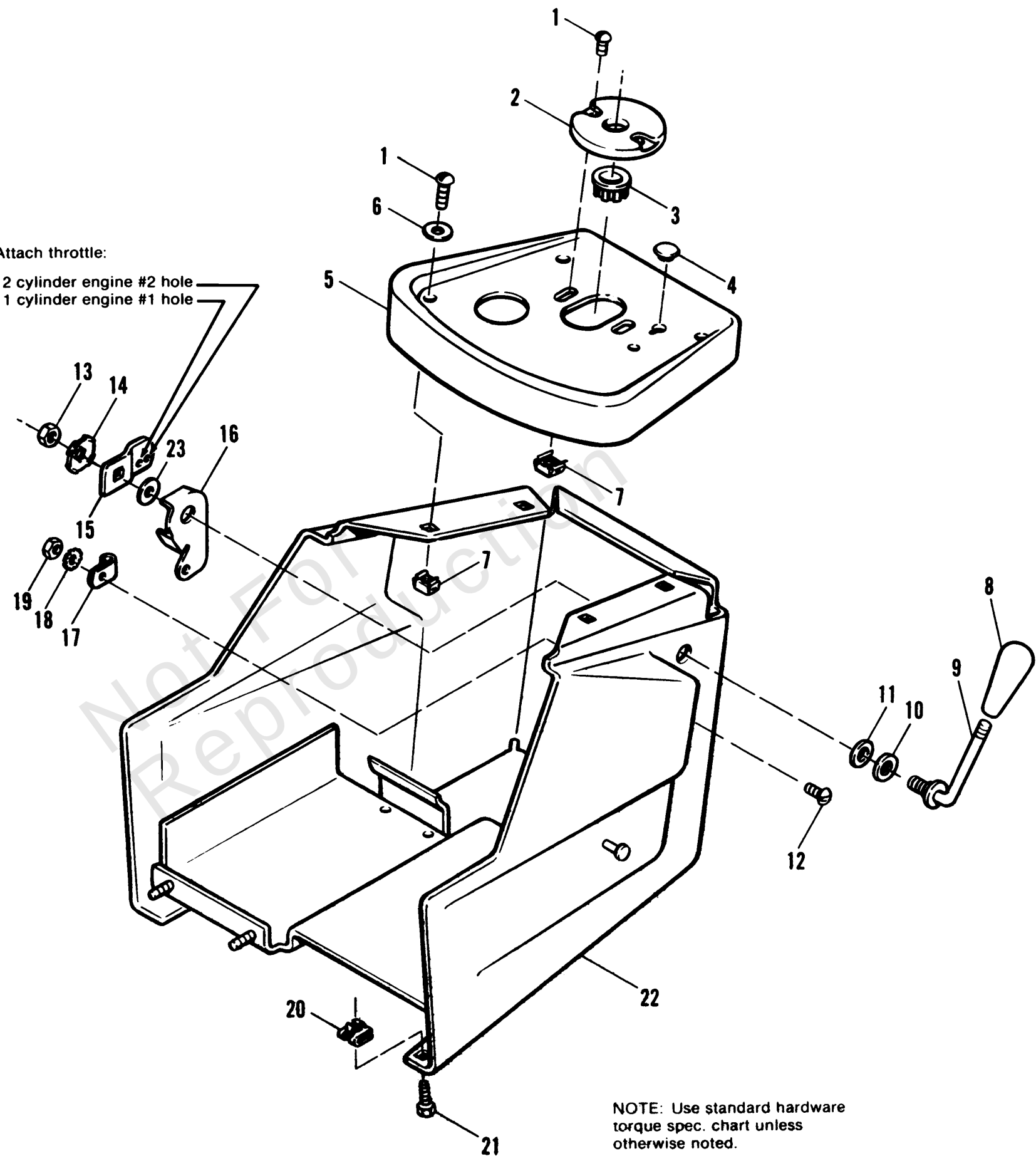
NOTE: Use standard hardware torque spec. chart unless otherwise noted.

## Clutch & Brake Group

| REF NO | PART NO   | QTY | DESCRIPTION                        |
|--------|-----------|-----|------------------------------------|
| 1      | 2826035   | 2   | SCREW, Thd. Form, 3/8 x 3/4        |
| 2      | 2166156   | 1   | BRACKET                            |
| 3      | 2821972   | 1   | CAPSCREW, Hex Hd., 3/8-16 x 2-1/2  |
| 4      | 1924940SM | 3   | WASHER, 3/8                        |
| 5      | 1685144SM | 1   | PULLEY ASSY.                       |
| 6      | 1666294SM | 1   | SPACER                             |
| 7      | 2157081SM | 1   | SPACER                             |
| 8      | 2166126SM | 1   | LEVER ASSY., Idler                 |
| 9      | 1916965SM | 2   | LOCKWASHER, 3/8                    |
| 10     | 2816950SM | 3   | NUT, Hex, Full, 3/8-16             |
| 11     | 2154369SM | 1   | SPRING                             |
| 12     | 1930645SM | 2   | LOCKNUT, Hex, 3/8-16               |
| 13     | 1657323SM | 1   | PULLEY                             |
| 14     | 2805123SM | 1   | KEY                                |
| 15     | 2828295   | 1   | CAPSCREW, Hex Hd., 7/16-14 x 3-3/4 |
| 16     | 2818199   | 1   | LOCKWASHER, 7/16                   |
| 17     | 2166130SM | 1   | SPACER                             |
| 18     | 2818213   | 1   | NUT, Hex, Full, 7/16-14            |
| 19     | 2823362   | 2   | LOCKNUT, Hex, 5/16-18              |
| 20     | 2166157SM | 1   | GUIDE ASSY.                        |
| 21     | 2158196SM | 2   | WASHER, Special                    |
| 22     | 2166176SM | 1   | DRUM, Brake                        |
| 23     | 2826021SM | 5   | RIVET                              |
| 24     | 2172237   | 1   | LINING, Brake                      |
| 25     | 2172234   | 1   | BAND ASSY., Brake                  |
| 26     | 2830650   | 1   | LOCKNUT, Flange, Whiz, 7/16-14     |
| 27     | 2821971   | 1   | CAPSCREW, Hex Hd., 3/8-16 x 1-3/4  |
| 28     | 1650651SM | 1   | ROD, Brake                         |
| 29     | 2166119SM | 1   | GUIDE ASSY., Rod                   |

Attach throttle:

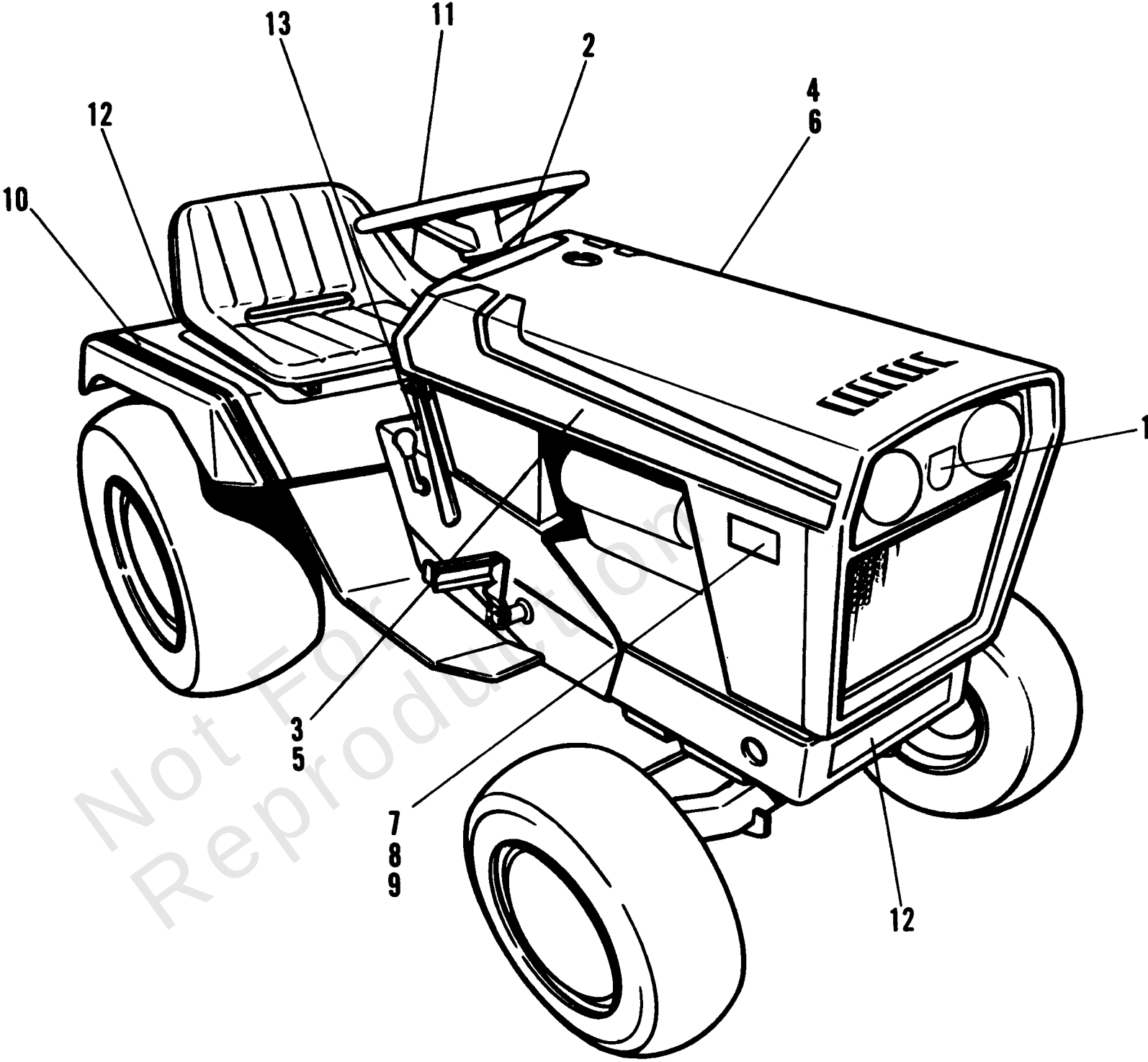
2 cylinder engine #2 hole  
1 cylinder engine #1 hole



NOTE: Use standard hardware torque spec. chart unless otherwise noted.

## ***Dash Group***

| REF NO | PART NO   | QTY | DESCRIPTION                             |
|--------|-----------|-----|-----------------------------------------|
| 1      | 2826025   | 6   | SCREW, Rd. Hd., 1/4-20 x 1/2            |
| 2      | 2172008SM | 1   | PLATE, Steering                         |
| 3      | 2157077SM | 1   | BUSHING                                 |
| 4      | 2177447   | 2   | BUTTON, Plug                            |
| 5      | 1651000SM | 1   | PANEL, Instrument                       |
| 6      | 2816955   | 4   | WASHER, Plain, 3/16                     |
| 7      | 2817867   | 6   | NUT, Tinnerman                          |
| 8      | 2172038SM | 1   | KNOB, Tapered                           |
| 9      | 1686629SM | 1   | HANDLE, Clutch Control                  |
| 10     | 2101025SM | 1   | WASHER                                  |
| 11     | 2156116   | 1   | WASHER                                  |
| 12     | 2830531   | 1   | SCREW, Rd. Hd., #10-32 x 1/2            |
| 13     | 1930645SM | 1   | LOCKNUT, Hex, 3/8-16                    |
| 14     | 2830665   | 1   | LOCKWASHER, Dished Type Shakeproof, 3/8 |
| 15     | 1666703SM | 1   | ARM, Throttle                           |
| 16     | 2103280SM | 1   | STOP, Throttle                          |
| 17     | 2158475SM | 1   | CLIP, Bowden Wire                       |
| 18     | 2822711   | 1   | Lockwasher, External, #10               |
| 19     | 2817415   | 1   | NUT, Hex, #10-32                        |
| 20     | 9287-03   | 6   | NUT, Speed, Tinnerman                   |
| 21     | 2830561   | 6   | SCREW, Hex Hd., #14 x 3/4               |
| 22     | 1685408SM | 1   | DASH ASSY.                              |
| 23     | 2159107SM | 1   | WASHER, Nylon                           |



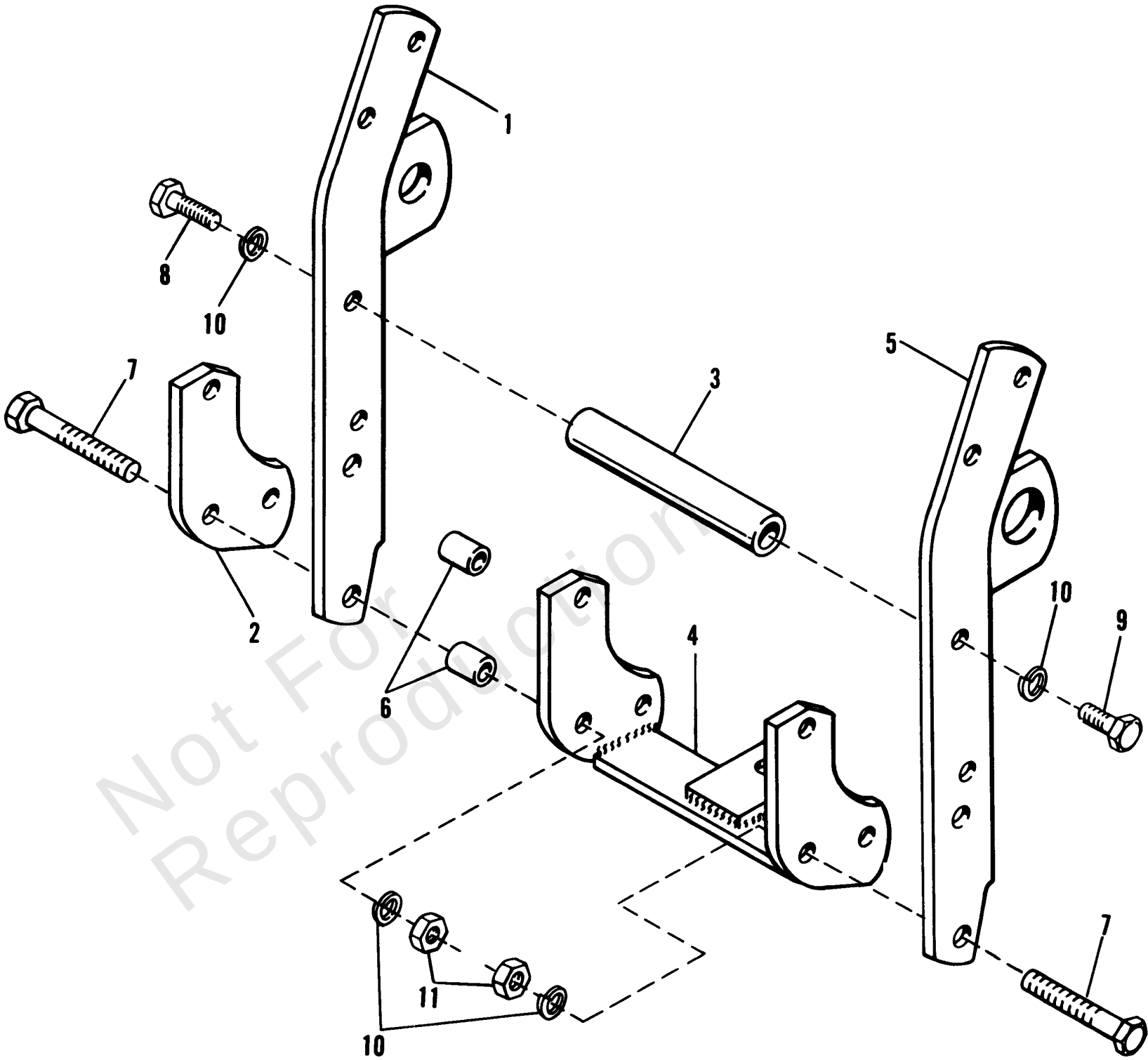
## Decal Group

| REF NO | PART NO   | QTY | DESCRIPTION                                                       |
|--------|-----------|-----|-------------------------------------------------------------------|
| 1      | 1666854   | 1   | DECAL, Simplicity Grille                                          |
| 2      | 1666873SM | 1   | DECAL, Dash, Hydro                                                |
| 3      | 1669441SM | 1   | DECAL, Hood, Landlord, R.H. (7112 Only)                           |
| 4      | 1669442SM | 1   | DECAL, Hood, Landlord, L.H. (7112 Only)                           |
| 5      | 1669441SM | 1   | DECAL, Hood, Sovereign, R.H. (7116 & 7117 Only)                   |
| 6      | 1669442SM | 1   | DECAL, Hood Sovereign, L.H. (7116 & 7117 Only)                    |
| 7      | 1666866   | 2   | DECAL, 7112 Hydro                                                 |
| 8      | 1666869SM | 2   | DECAL, 7116 Hydro                                                 |
| 9      | 1666870   | 2   | DECAL, 7117 Hydro                                                 |
| 10     | 1657282   | 1   | DECAL, Seat Deck, R.H.                                            |
| 11     | 1657283   | 1   | DECAL, Seat Deck, L.H.                                            |
| 12     | 2153166   | 2   | DECAL, Simplicity                                                 |
| 13     | 1716537SM | 1   | DECAL, Console, Hydro                                             |
| 13     | 2157096   | 1   | DECAL, Caution (on top of engine)                                 |
| 13     | 1713543SM | 1   | DECAL, Drive Belts (inside hood)                                  |
| 13     | 1716534SM | 1   | DECAL, Warning (under seat deck)                                  |
| 13     | 1666853   | 2   | DECAL, Simplicity Twin 17 (7117 Only) (Mounted on side of engine) |

**Draw Bar Group**

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.



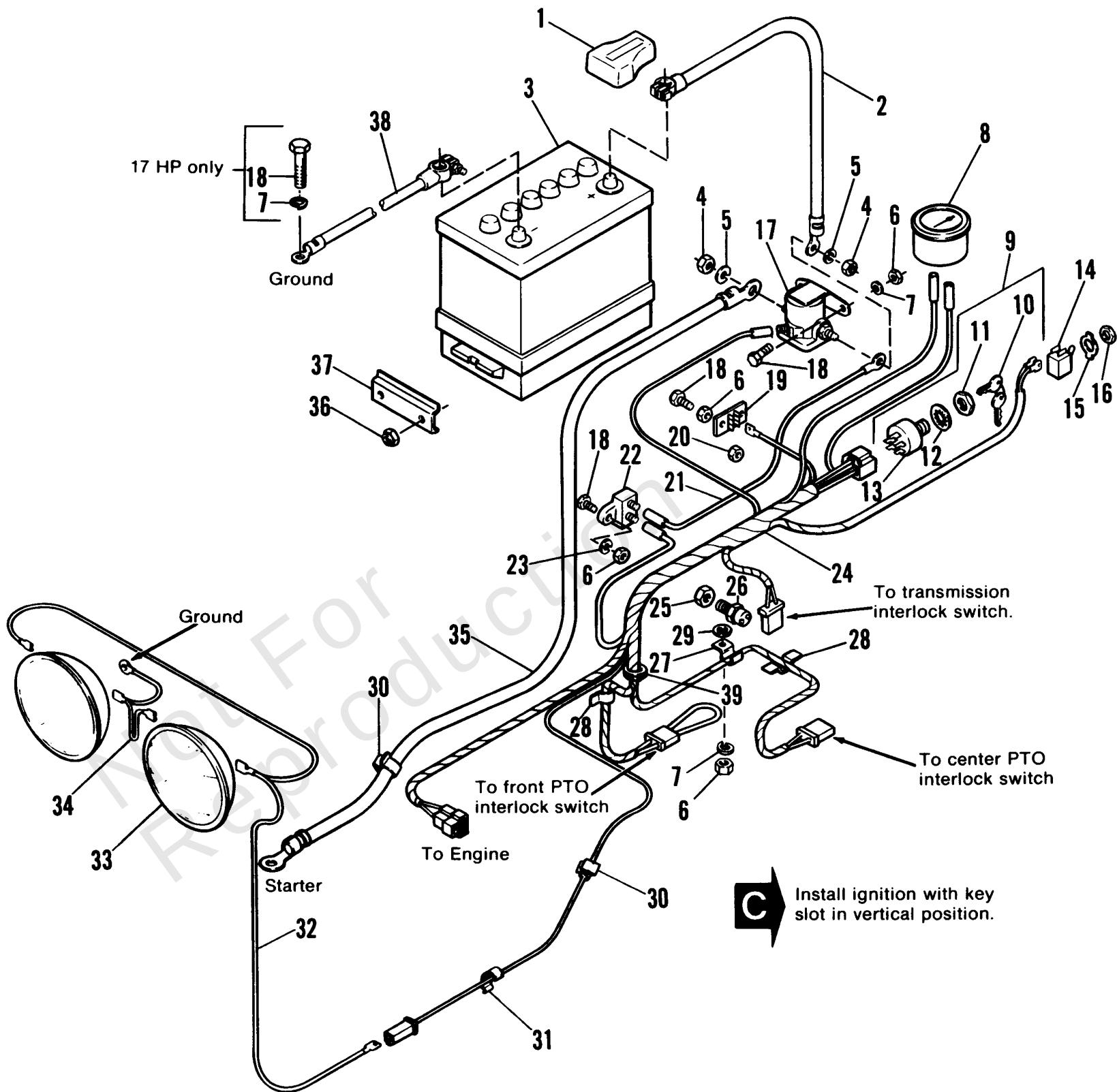
### ***Draw Bar Group***

| REF NO | PART NO   | QTY | DESCRIPTION                     |
|--------|-----------|-----|---------------------------------|
| 1      | 2166206SM | 1   | BAR ASSY., Upright, R.H.        |
| 2      | 2166075SM | 1   | PLATE                           |
| 3      | 2166110SM | 1   | SPACER                          |
| 4      | 2166074SM | 1   | BAR ASSY., Draw                 |
| 5      | 2166072SM | 1   | BAR ASSY., Upright, L.H.        |
| 6      | 1608759SM | 2   | SPACER                          |
| 7      | 2826110   | 2   | CAPSCREW, Hex, 7/16-14 x 2-3/4  |
| 8      | 2823027   | 1   | CAPSCREW, Hex, 7/16-14 x 1-3/4  |
| 9      | 2820677   | 3   | CAPSCREW, Hex, 7/16-14 x 1-1 /4 |
| 10     | 2818199   | 6   | LOCKWASHER, 7/16                |
| 11     | 2818213   | 4   | NUT, Hex, 7/16-14               |

**Electrical Group - 7112, & 7117**

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



## Electrical Group - 7112, & 7117

| REF NO | PART NO   | QTY | DESCRIPTION                                                |
|--------|-----------|-----|------------------------------------------------------------|
| 1      | 1713534SM | 1   | PROTECTOR, Terminal                                        |
| 2      | 1665235SM | 1   | CABLE, Battery to Solenoid                                 |
| 3      | 1685058SM | 1   | BATTERY (Includes Decal)                                   |
| 4      | 1917372SM | 2   | NUT, Hex, 5/16-18                                          |
| 5      | 1917356SM | 2   | LOCKWASHER, 5/16                                           |
| 6      | 2816622SM | 6   | NUT, Hex, 1/4-20                                           |
| 7      | 2816964SM | 4   | LOCKWASHER, 1/4 (Qty.3 used on 7112 Only)                  |
| 8      | 1603189SM | 1   | AMMETER                                                    |
| 9      | 1607280SM | 1   | SWITCH & KEY ASSY., Ignition                               |
| 10     | 1717163SM | 1   | KEY-IGNITION INDAK                                         |
| 11     | 122235    | 1   | NUT, Special                                               |
| 12     | 2818906   | 1   | LOCKWASHER, Internal Tooth, 5/8                            |
| 13     | -----     | 1   | SWITCH, Ignition (See Ref. No. 9)                          |
| 14     | 2122184SM | 1   | SWITCH, Toggle                                             |
| 15     | 1650878   | 1   | PLATE                                                      |
| 16     | 1650880   | 1   | NUT, Switch                                                |
| 17     | 2122216SM | 1   | SOLENOID, Starter                                          |
| 18     | 2821959   | 6   | CAPSCREW, Hex Hd., 1/4-20 x 5/8 (Qty. 5 used on 7112 only) |
| 19     | 1665230SM | 1   | BOARD, Terminal                                            |
| 20     | 2823358   | 2   | LOCKNUT, Hex, 1/4-20                                       |
| 21     | 1665237SM | 1   | WIRE ASSY.                                                 |
| 22     | 1665238SM | 1   | BREAKER-CIRCUIT                                            |
| 23     | 921880    | 1   | LOCKWASHER, 1/4                                            |
| 24     | 1666327   | 1   | HARNESS ASSY.                                              |
| 25     | 1930647   | 1   | NUT, Pal                                                   |
| 26     | 2177522SM | 1   | SWITCH, Interlock                                          |
| 27     | 2832771   | 1   | CLIP, Cable                                                |
| 28     | 176912    | 2   | CLIP, Wire                                                 |
| 29     | 2106785   | 1   | WASHER, Cup                                                |
| 30     | 2172434SM | 2   | CLIP- WIRE DIA .390                                        |
| 31     | 2172436SM | 1   | CLIP, Tinnerman                                            |
| 32     | 1666665SM | 1   | WIRE ASSY.                                                 |
| 33     | -----     | 2   | LAMP, Sealed Beam, G.E. #4411-1                            |
| 34     | 1666731   | 1   | WIRE ASSY.                                                 |
| 35     | 1666328SM | 1   | CABLE, Solenoid to Starter                                 |
| 36     | 2824433   | 2   | NUT, Elastic, 5/16-18                                      |
| 37     | 2171225SM | 1   | CLAMP                                                      |
| 38     | 2171811SM | 1   | CABLE, Battery to Ground                                   |
| 39     | 2172175   | 1   | GROMMET                                                    |

### Footnotes:

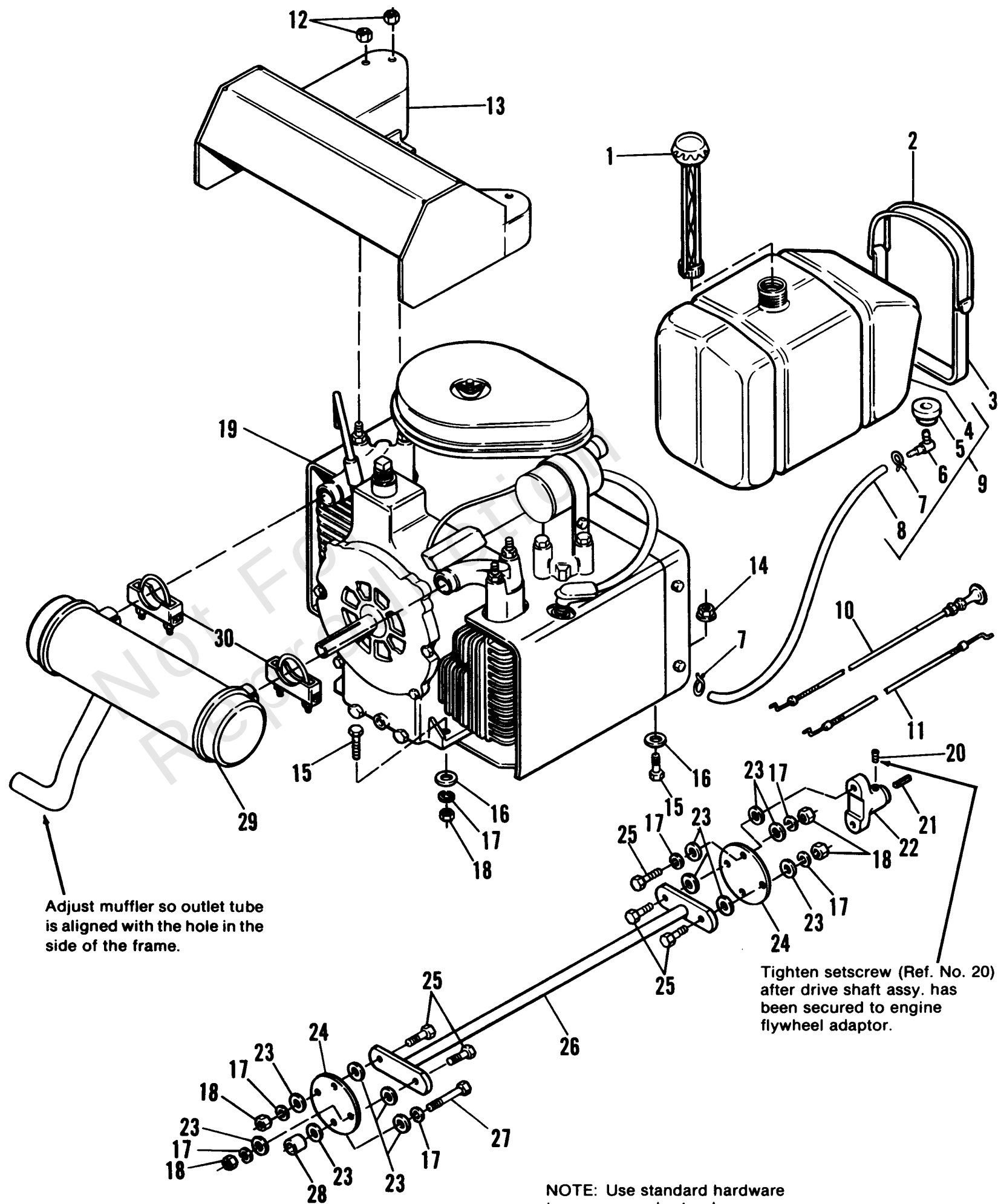
Note:\* Purchase from your local automotive supplier.

Note:\* Not serviced separately, order complete ignition switch.

**Engine, Exhaust & Drive Shaft Group - 7117**

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



## Engine, Exhaust & Drive Shaft Group - 7117

| REF NO | PART NO   | QTY | DESCRIPTION                                                                   |
|--------|-----------|-----|-------------------------------------------------------------------------------|
| 1      | 2171252SM | 1   | CAP, Fuel Tank, Gauge                                                         |
| 2      | 2172744SM | 2   | STRAP, Fuel Tank                                                              |
| 3      | 2171330SM | 2   | STRAP, Tank                                                                   |
| 4      | -----     | 1   | TANK, Fuel (See Ref. No. 9)                                                   |
| 5      | 1654930SM | 1   | BUSHING                                                                       |
| 6      | 1664460SM | 1   | FITTING                                                                       |
| 7      | 2154372   | 2   | CLAMP, Hose                                                                   |
| 8      | 1718678SM | 1   | HOSE, Fuel (21-3/4" Long)                                                     |
| 9      | 1687040SM | 1   | TANK ASSY., Fuel<br>-Reference No. 9 includes Ref. No. 4, 5, 6, 7 (Qty. 1), 8 |
| 10     | 1666269SM | 1   | CONTROL, Choke                                                                |
| 11     | 1666266SM | 1   | CONTROL, Throttle                                                             |
| 12     | 2829001   | 4   | LOCKNUT, 2-Way                                                                |
| 13     | 1666940SM | 1   | HEAT SHIELD ASSY.                                                             |
| 14     | 2828352   | 1   | LOCKNUT, Hex, Flange, Whiz, 3/8-16                                            |
| 15     | 2821969   | 4   | CAPSCREW, Hex Hd., 3/8-16 x 1-1/2                                             |
| 16     | 1924940SM | 4   | WASHER, 3/8                                                                   |
| 17     | 1916965SM | 11  | LOCKWASHER, 3/8                                                               |
| 18     | 2816950SM | 7   | NUT, Hex, 3/8-16                                                              |
| 19     | -----     | 1   | ENGINE, 17 H.P. Kohler                                                        |
| 20     | 2824624   | 1   | SETSCREW, 3/8-24 x 3/8                                                        |
| 21     | 2157427SM | 1   | KEY, Drive Shaft                                                              |
| 22     | 2172264SM | 1   | FLANGE, Drive Shaft                                                           |
| 23     | 2157424SM | 16  | WASHER, Special                                                               |
| 24     | 2173026SM | 2   | COUPLING                                                                      |
| 25     | 1920415SM | 6   | CAPSCREW, Hex Hd., 3/8-16 x 1-1/4                                             |
| 26     | 1666118SM | 1   | SHAFT ASSY., Drive                                                            |
| 27     | 2822130   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 2-1/4                                             |
| 28     | 1656397SM | 2   | SPACER                                                                        |
| 29     | 1666923SM | 1   | MUFFLER, Exhaust                                                              |
| 30     | 2835040SM | 2   | CLAMP, Exhaust                                                                |

### Footnotes:

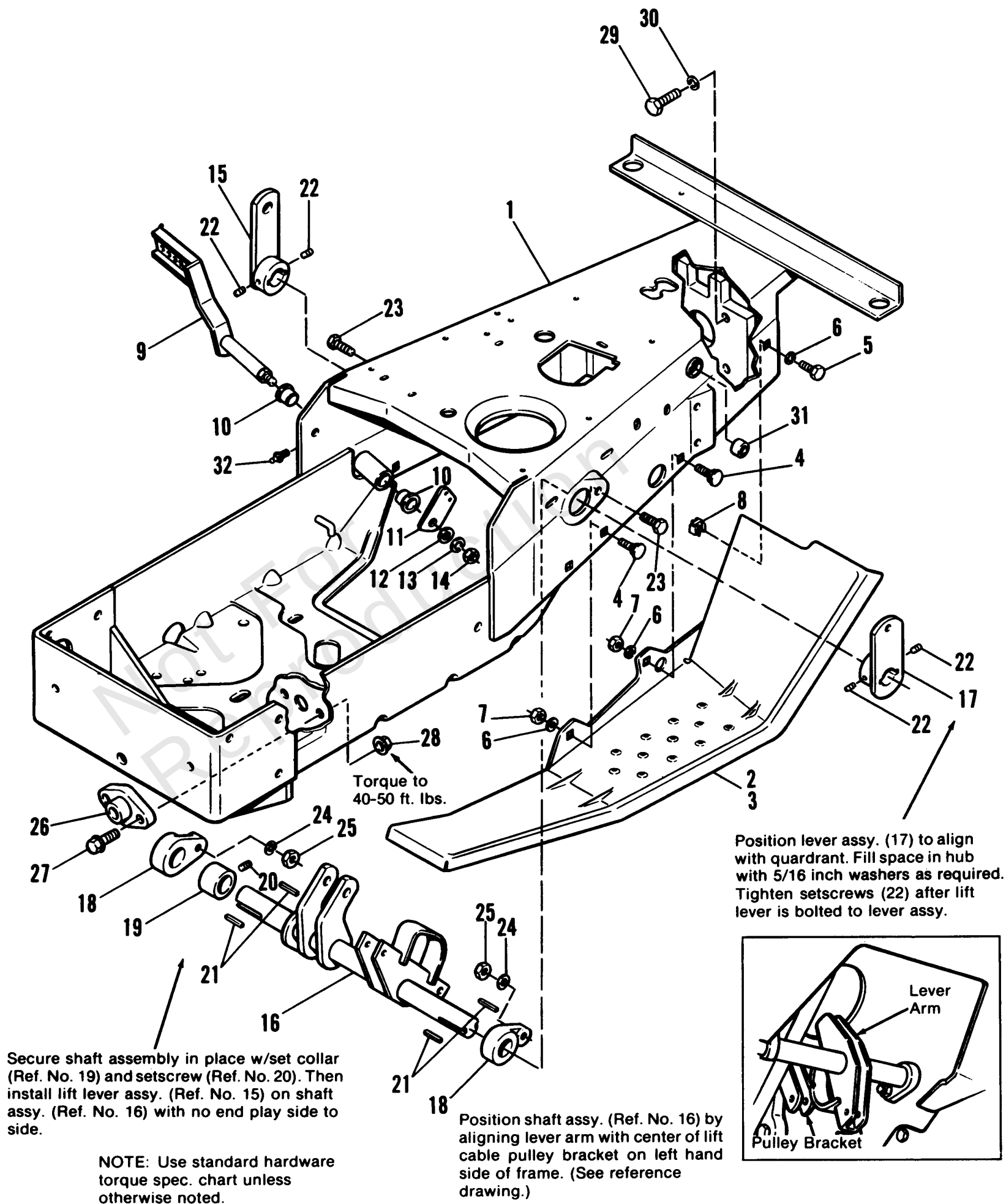
Note:\* See your local Kohler Distributor for engine parts and service.

Note:\* Not serviced separately, order complete tank assembly.

# Frame & Footrest Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



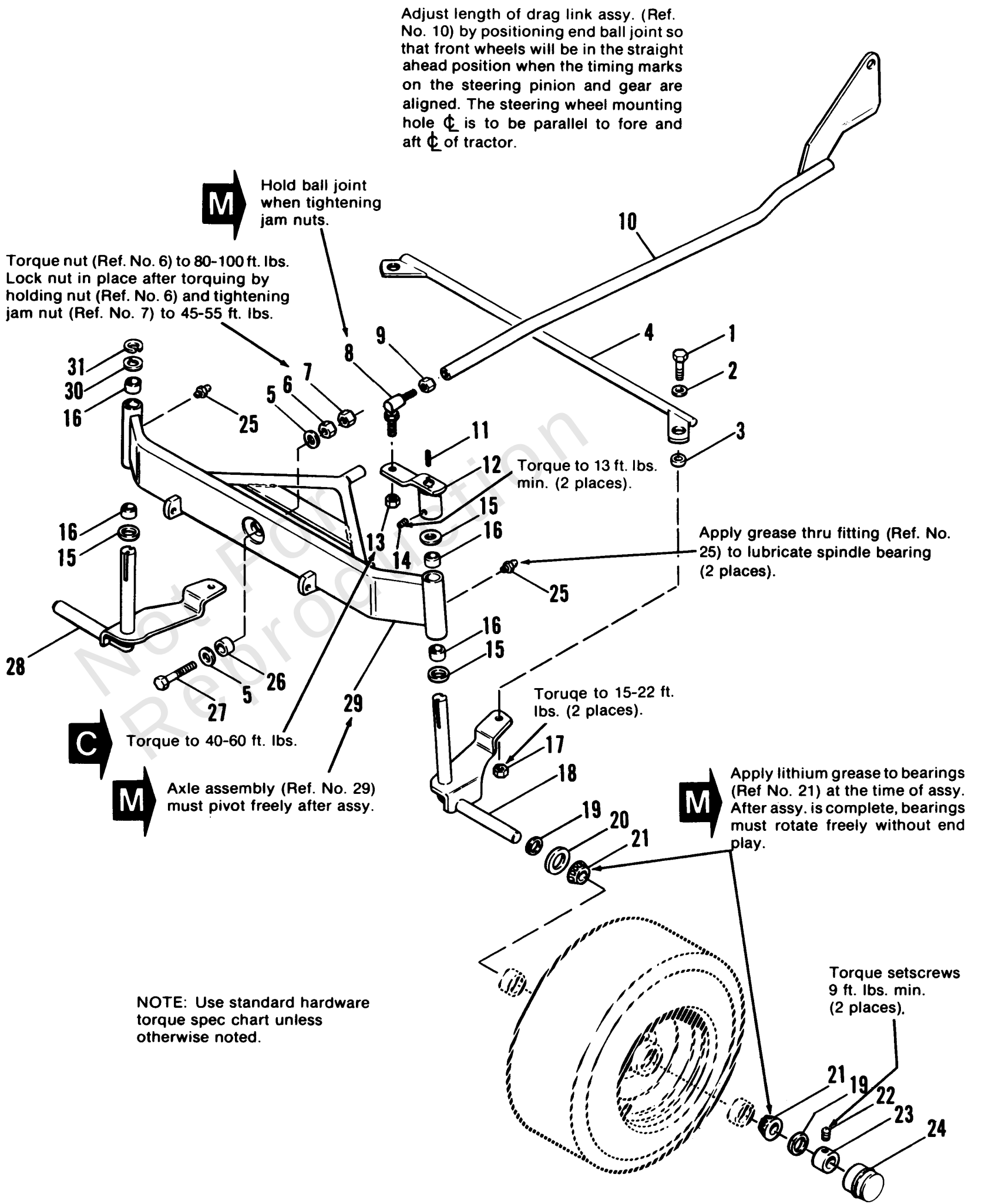
## Frame & Footrest Group

| REF NO | PART NO   | QTY | DESCRIPTION                                                                   |
|--------|-----------|-----|-------------------------------------------------------------------------------|
| 1      | 1667098   | 1   | FRAME & BUSHING ASSY. (7117 Only)<br>-Ref. No. 1 includes Ref. No's. 31 & 32. |
| 32     | 1667097   | 1   | FRAME & BUSHING ASSY. (7112 & 7116 Only)                                      |
| 2      | 1665909SM | 1   | FOOTREST, R.H.                                                                |
| 3      | 1665908SM | 1   | FOOTREST, L.H.                                                                |
| 4      | 2820562   | 4   | BOLT, Carriage, 5/16-18 x 3/4                                                 |
| 5      | 2821332   | 2   | CAPSCREW, Hex Hd., 5/16-18 x 3/4                                              |
| 6      | 1917356SM | 6   | LOCKWASHER, 5/16                                                              |
| 7      | 1917372SM | 4   | NUT, Hex, Full, 5/16-18                                                       |
| 8      | 2820470   | 2   | NUT, Speed, Tinnerman, 5/16-18                                                |
| 9      | 1674137SM | 1   | FOOT PEDAL ASSY.                                                              |
| 10     | 2108419   | 2   | BUSHING                                                                       |
| 11     | 2157300SM | 1   | ARM, Pedal Foot                                                               |
| 12     | 1924940SM | 1   | WASHER, 3/8                                                                   |
| 13     | 1916965SM | 1   | LOCKWASHER, 3/8                                                               |
| 14     | 2816950SM | 1   | NUT, Hex, Full, 3/8-16                                                        |
| 15     | 2157625SM | 1   | FRONT LIFT LEVER ASSY. (R.H.)                                                 |
| 16     | 1663168   | 1   | LIFT SHAFT ASSY.                                                              |
| 17     | 171593    | 1   | LIFT LEVER ASSY. (L.H.)                                                       |
| 18     | 2170975SM | 2   | BEARING, Lift Lever                                                           |
| 19     | 2157624   | 1   | COLLAR, Set                                                                   |
| 20     | 2828709   | 1   | SETSCREW, Cup Pt., 5/16-18 x 3/8                                              |
| 21     | 2157652   | 4   | KEY                                                                           |
| 22     | 2828734   | 4   | SETSCREW, Skt. Hd., 5/16-18 x 1/4                                             |
| 23     | 2821977   | 2   | CAPSCREW, Hex Hd., 5/16-18 x 1-1/4                                            |
| 24     | 1917356SM | 2   | LOCKWASHER, 5/16                                                              |
| 25     | 1917372SM | 2   | NUT, Hex, Full, 5/16-18                                                       |
| 26     | 1653876SM | 1   | BEARING, Pivot                                                                |
| 27     | 2828727   | 2   | CAPSCREW, Whiz, 3/8-16 x 1-1/4                                                |
| 28     | 2828352   | 2   | LOCKNUT, Hex, Flange, Whiz, 3/8-16                                            |
| 29     | 2821212   | 4   | CAPSCREW, Hex Hd., 7/16-14 x 1-1/2                                            |
| 30     | 2818199   | 4   | LOCKWASHER, 7/16                                                              |
| 31     | 2174662SM | 1   | BUSHING                                                                       |
| 32     | 2821133SM | 1   | FITTING, Lube                                                                 |

# Front Axle Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491





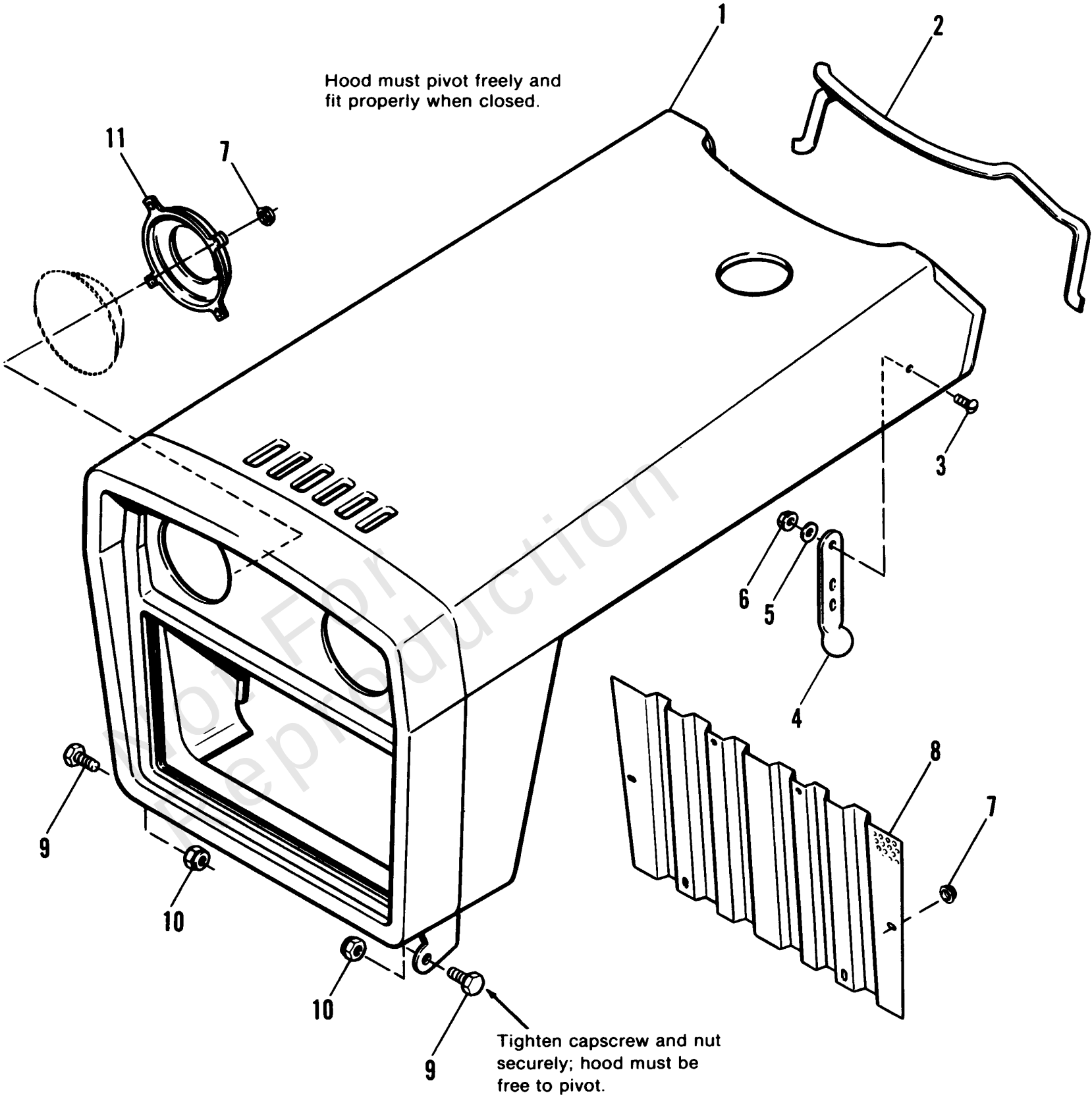
## Front Axle Group

| REF NO | PART NO    | QTY | DESCRIPTION                        |
|--------|------------|-----|------------------------------------|
| 1      | 2821210    | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1      |
| 2      | 1924940SM  | 2   | WASHER, Plain, 3/8                 |
| 3      | 2154177SM  | 2   | SPACER                             |
| 4      | 2157499SM  | 1   | TIE ROD ASSY.                      |
| 5      | 2818431    | 2   | WASHER, Plain, 1/2                 |
| 6      | 2830648    | 1   | LOCKNUT, Hex, 1/2-13               |
| 7      | 2813744    | 1   | NUT, Hex, Jam, 1/2-13              |
| 8      | 2164272SM  | 1   | JOINT, Ball                        |
| 9      | 2819262    | 1   | NUT, Hex, Jam, 1/2-20              |
| 10     | 1666648SM  | 1   | DRAG LINK ASSY.                    |
| 11     | 2157427SM  | 2   | KEY, Square                        |
| 12     | 2170998SM  | 1   | ARM ASSY., Steering                |
| 13     | 2830245    | 1   | LOCKNUT, Hex, 1/2-20               |
| 14     | 2828721    | 2   | SETSCREW, Sq. Hd., 5/16-18 x 1/2   |
| 15     | 2108181    | 3   | WASHER                             |
| 16     | 2154289SM  | 4   | BUSHING                            |
| 17     | 2823428    | 2   | LOCKNUT, Hex, 3/8-16               |
| 18     | 2171774ASM | 1   | SPINDLE ASSY., L.H.                |
| 19     | 2171375SM  | 4   | SPACER                             |
| 20     | 2170168SM  | 2   | SEAL                               |
| 21     | 2154486SM  | 4   | BEARING, Cone                      |
| 22     | 2828691    | 2   | SETSCREW. Skt. Hd., 5/16-18 x 5/16 |
| 23     | 1729254SM  | 2   | COLLAR, Set                        |
| 24     | 2154487SM  | 2   | CAP, Hub                           |
| 25     | 2814687    | 2   | FITTING, Grease                    |
| 26     | 2157618SM  | 1   | SPACER                             |
| 27     | 2827496    | 1   | CAPSCREW, Hex Hd., 1/2-13 x 2-1/4  |
| 28     | 2157494SM  | 1   | SPINDLE ASSY., R.H.                |
| 29     | 1650553SM  | 1   | FRONT AXLE ASSY.                   |
| 30     | 1729259SM  | 1   | WASHER                             |
| 31     | 2157286    | 1   | RING, Retaining                    |

**Hood & Grille Group**

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.

## *Hood & Grille Group*

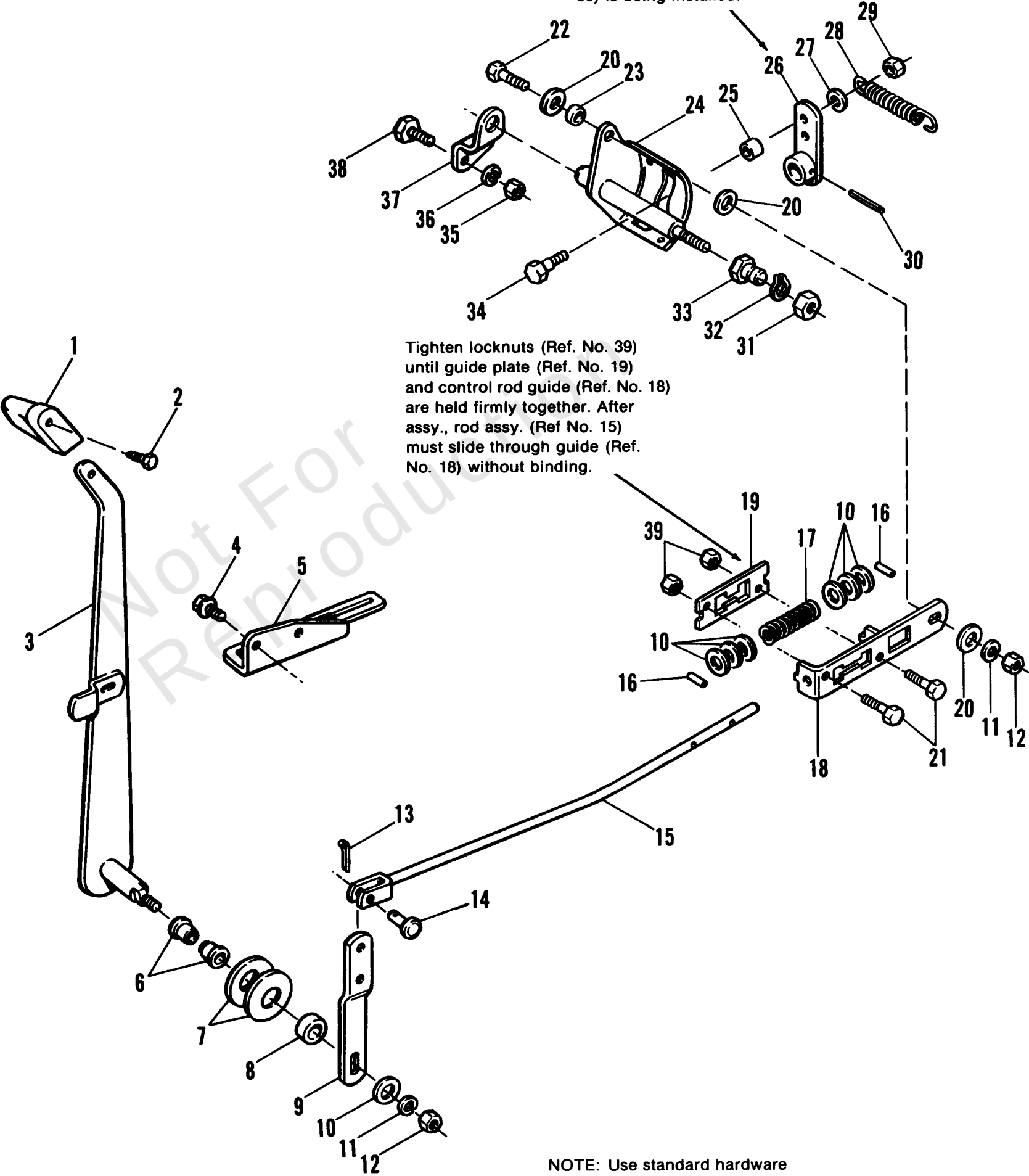
| REF NO | PART NO   | QTY | DESCRIPTION                   |
|--------|-----------|-----|-------------------------------|
| 1      | 1665945   | 1   | HOOD & GRILLE ASSY.           |
| 2      | 2172935   | 1   | MOULDING, Hood                |
| 3      | 2830531   | 2   | SCREW                         |
| 4      | 2171600SM | 2   | STRAP, Hood                   |
| 5      | 2171804   | 2   | WASHER, Special               |
| 6      | 2830627   | 2   | LOCKNUT, Hex, #10-32          |
| 7      | 1960517SM | 14  | LOCKNUT, Pal                  |
| 8      | 1666148SM | 1   | SCREEN                        |
| 9      | 2821210   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1 |
| 10     | 2823428   | 2   | LOCKNUT, Hex, 3/8-16          |
| 11     | 1665813SM | 2   | BRACKET, Headlight Support    |

# Hydrostatic Control Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491

To prevent internal damage to hydrostatic unit, hub of control link assembly (Ref. No. 26) must be supported while roll pin (Ref. No. 30) is being installed.



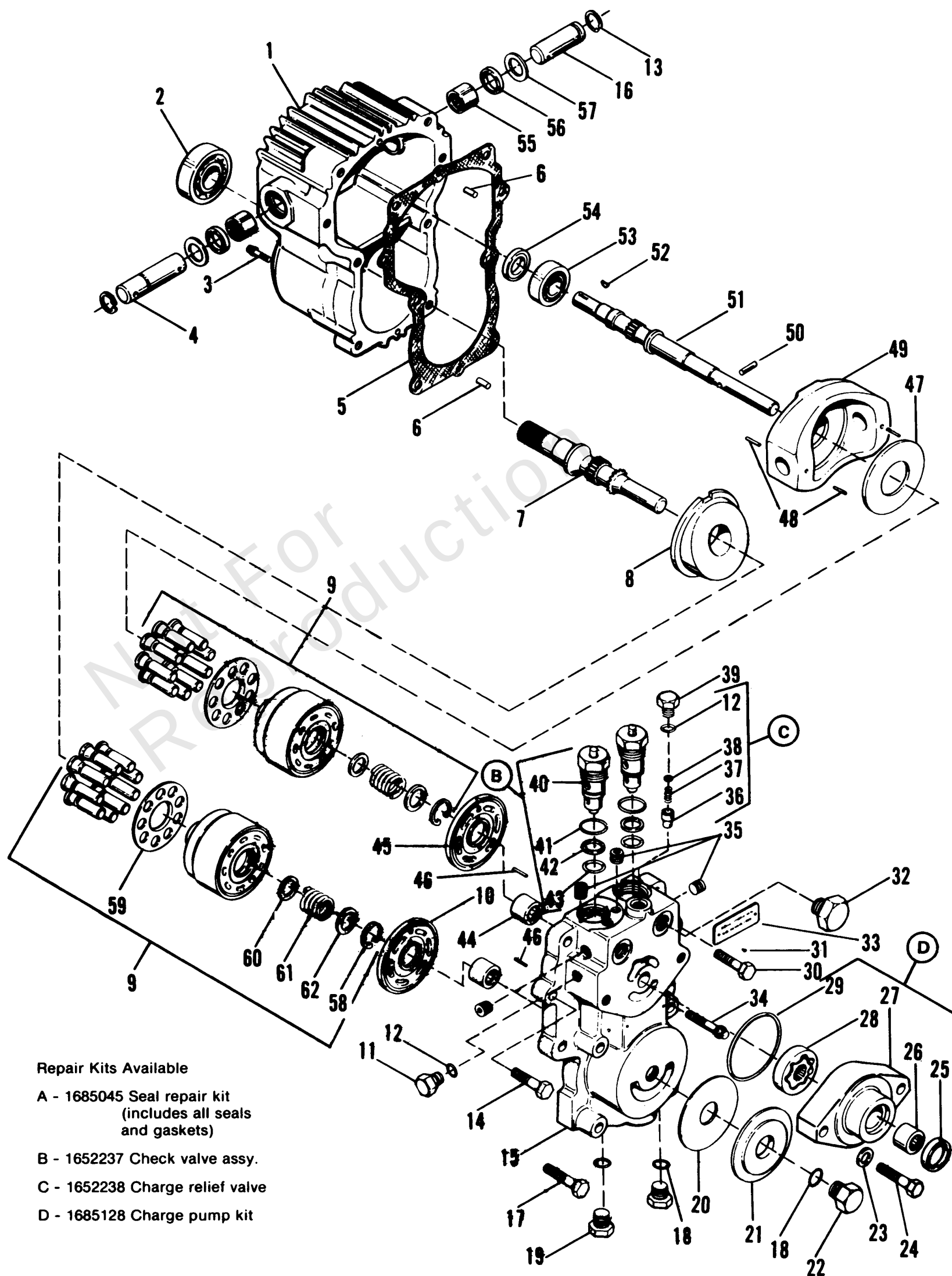
## Hydrostatic Control Group

| REF NO | PART NO   | QTY | DESCRIPTION                                 |
|--------|-----------|-----|---------------------------------------------|
| 1      | 2171165   | 1   | KNOB                                        |
| 2      | 2825592SM | 1   | SCREW, Thd. Form., 1/4-20 x 3/4             |
| 3      | 1665257SM | 1   | LEVER ASSY., Control                        |
| 4      | 2831648   | 2   | SCREW, Hex, Flange, Whizlock, 5/16-18 x 1/2 |
| 5      | 1650360SM | 1   | QUADRANT                                    |
| 6      | 2108419   | 2   | BUSHING                                     |
| 7      | 2168025SM | 2   | WASHER, Spring                              |
| 8      | 1665251SM | 1   | SPACER                                      |
| 9      | 1650358SM | 1   | LINK                                        |
| 10     | 1924940SM | 7   | WASHER, 3/8                                 |
| 11     | 1916965SM | 2   | LOCKWASHER, 3/8                             |
| 12     | 2816950SM | 2   | NUT, Hex, Full, 3/8-16                      |
| 13     | 2818447   | 1   | PIN, Cotter, 3/32 x 3/4                     |
| 14     | 1651167SM | 1   | PIN                                         |
| 15     | 1650715SM | 1   | ROD ASSY., Control                          |
| 16     | 2819180SM | 2   | PIN, Roll                                   |
| 17     | 1650347SM | 1   | SPRING-COMP 0.50 IDX                        |
| 18     | 1650712SM | 1   | GUIDE, Control Rod                          |
| 19     | 1650713SM | 1   | PLATE, Guide                                |
| 20     | 2817642   | 3   | WASHER, 5/16                                |
| 21     | 2821961   | 2   | CAPSCREW, Hex Hd., 1/4-20 x 1-1/4           |
| 22     | 2821210   | 1   | CAPSCREW, Hex Hd., 3/8-16 x 1               |
| 23     | 1650506SM | 1   | SPACER                                      |
| 24     | 1650874SM | 1   | SHAFT ASSY.                                 |
| 25     | 1650592SM | 1   | ROLLER, Cam                                 |
| 26     | 1650392   | 1   | LINK ASSY., Control                         |
| 27     | 2816964SM | 1   | LOCKWASHER, 1/4                             |
| 28     | 2174896SM | 1   | SPRING                                      |
| 29     | 2816622SM | 1   | NUT, Hex, Full, 1/4-20                      |
| 30     | 2816937SM | 1   | PIN, Roll, 1/4 x 1-1/4                      |
| 31     | 2813744   | 1   | NUT, Hex, Jam, 1/2-13                       |
| 32     | 2157286   | 1   | RING, Retaining                             |
| 33     | 1650872SM | 1   | NUT, Adjusting                              |
| 34     | 1650621SM | 1   | BOLT, Shoulder                              |
| 35     | 1917372SM | 2   | NUT, Hex, Full, 5/16-18                     |
| 36     | 1917356SM | 2   | LOCKWASHER, 5/16                            |
| 37     | 1650401SM | 1   | BRACKET, Pivot                              |
| 38     | 2106772   | 2   | SCREW, Special                              |
| 39     | 2823358   | 2   | LOCKNUT, Hex, 1/4-20                        |

# Hydrostatic Pump

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



## Repair Kits Available

- A - 1685045 Seal repair kit  
(includes all seals and gaskets)
- B - 1652237 Check valve assy.
- C - 1652238 Charge relief valve
- D - 1685128 Charge pump kit

## Hydrostatic Pump

| REF NO | PART NO   | QTY | DESCRIPTION                       |
|--------|-----------|-----|-----------------------------------|
| 1      | 1652180   | 1   | HOUSING                           |
| 2      | 1652181SM | 1   | BEARING, Ball                     |
| 3      | 1652182   | 2   | CAPSCREW, 12 Pt                   |
| 4      | 1652183SM | 1   | TRUNNION                          |
| 5      | 1652184SM | 1   | GASKET                            |
| 6      | 1652185SM | 2   | PIN, Str. Headless                |
| 7      | 1652186SM | 1   | SHAFT, Motor                      |
| 8      | 1715530SM | 1   | PLATE, Swash                      |
| 9      | 1673535SM | 2   | CYLINDER BLOCK KIT                |
| 10     | 1652189SM | 1   | VALVE, Plate                      |
| 11     | 1652190   | 1   | PLUG, Hex Hd.                     |
| 12     | 2821884SM | 2   | "O" RING                          |
| 13     | 1652192SM | 2   | RING, Retaining                   |
| 14     | 1920415SM | 1   | CAPSCREW, Hex Hd., 3/8-16 x 1-1/4 |
| 15     | 1652254SM | 1   | SECTION, Center                   |
| 16     | 1652194SM | 1   | TRUNNION                          |
| 17     | 2823701   | 4   | CAPSCREW, Hex Hd., 3/8-16 x 2     |
| 18     | 1652196SM | 2   | "O" RING                          |
| 19     | 1652197SM | 2   | PLUG, Hex Hd.                     |
| 20     | 1652198SM | 1   | GASKET                            |
| 21     | 1652199SM | 1   | COVER PLATE, Filter               |
| 22     | 1652200SM | 1   | PLUG, Special                     |
| 23     | 1918199SM | 2   | WASHER, Flat                      |
| 24     | 925696    | 2   | CAPSCREW, Hex Hd., 7/16-14 x 2    |
| 25     | 1652203SM | 1   | SEAL, Lip                         |
| 26     | 1652204SM | 1   | BEARING, Needle                   |
| 27     | -----     | 1   | HOUSING, Charge Pump              |
| 28     | -----     | 1   | GEROTOR ASSY.                     |
| 29     | 1652207SM | 1   | "O" RING                          |
| 30     | 2821969   | 1   | CAPSCREW, Hex Hd., 3/8-16 x 1-1/2 |
| 31     | 1652209   | 2   | SCREW, Drive                      |
| 32     | 1652210   | 2   | PLUG, Str. Thd., Hex              |
| 33     | -----     | 1   | PLATE, Name                       |
| 34     | 1652212SM | 2   | CAPSCREW, 12 Pt.                  |
| 35     | 2860625SM | 4   | PLUG, Pipe                        |
| 36     | 1652214SM | 3   | CONE, Relief Valve                |
| 37     | 1652253SM | 3   | SPRING, Relief Valve              |
| 38     | 1652216SM | A/R | SHIM                              |
| 39     | 1652217SM | 1   | PLUG, Hex Hd.                     |
| 40     | 1673537SM | 2   | CHECK VALVE ASSY.                 |
| 41     | 1652219SM | 2   | O-RING                            |
| 42     | 1652220SM | 2   | RING, Back-up                     |
| 43     | 1652221SM | 2   | "O" RING                          |
| 44     | 1652222SM | 2   | BEARING, Needle                   |
| 45     | 1652223SM | 1   | PLATE, Valve                      |
| 46     | 1652224SM | 2   | PIN, Str. Headless                |
| 47     | 1652225   | 1   | PLATE, Thrust                     |
| 48     | 1652226SM | 3   | PIN, Coiled Spring                |

### Footnotes:

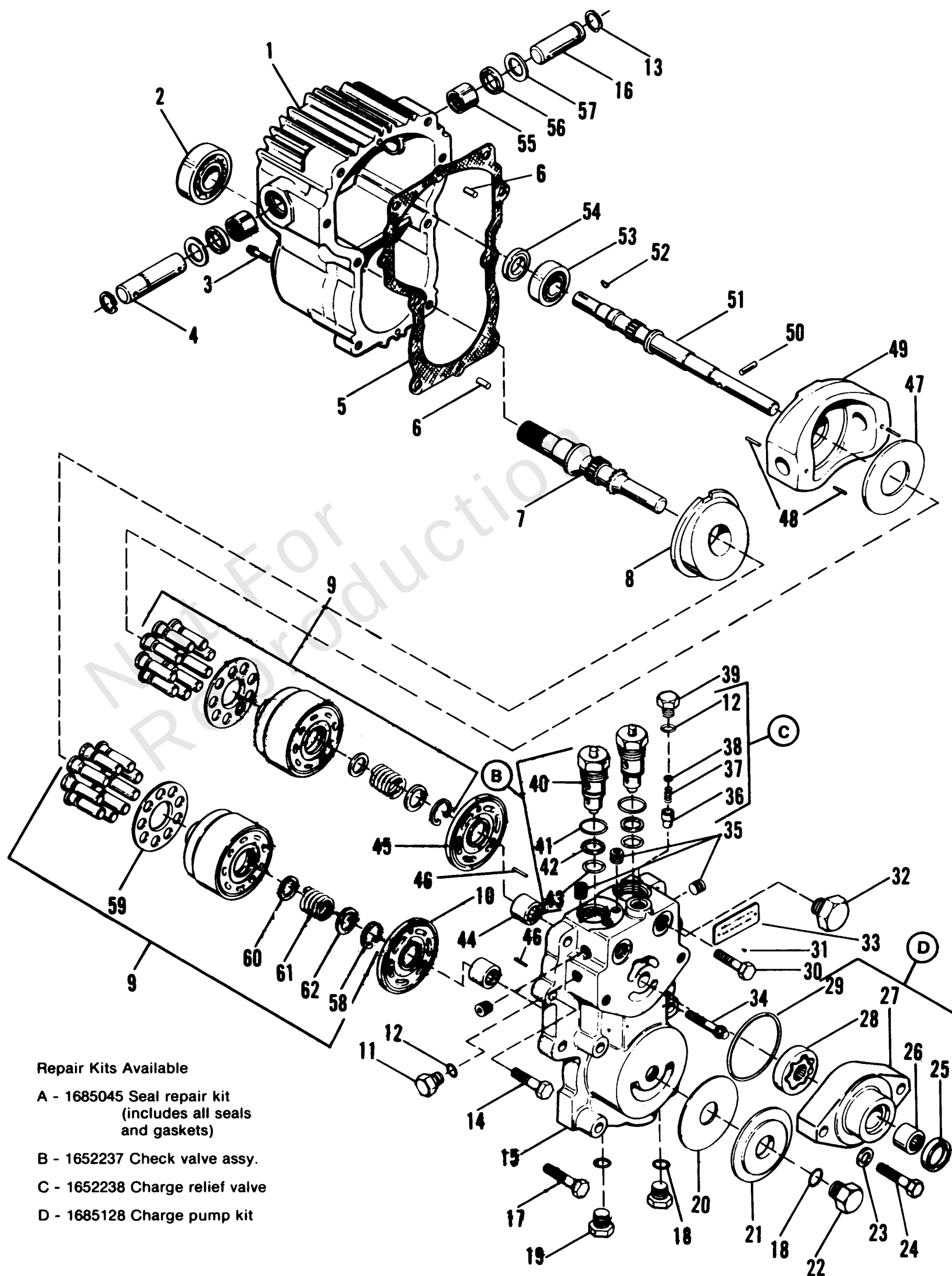
Note:\* Not a serviceable part.

Note:\* Not serviced seperately, order complete Charge Pump Kit 1685128.

# Hydrostatic Pump

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491





## ***Hydrostatic Pump***

| REF NO | PART NO   | QTY | DESCRIPTION        |
|--------|-----------|-----|--------------------|
| 49     | 1652227   | 1   | PLATE, Swash       |
| 50     | 1652228SM | 1   | PIN, Str. Headless |
| 51     | 1652229SM | 1   | SHAFT, Pump        |
| 52     | 2805123SM | 1   | KEY, Woodruff      |
| 53     | 1652231SM | 1   | BEARING, Ball      |
| 54     | 1612093SM | 1   | SEAL, Lip          |
| 55     | 1652251SM | 2   | BEARING, Needle    |
| 56     | 1652234SM | 2   | SEAL, Lip          |
| 57     | 1652235SM | 2   | WASHER, Special    |
| 58     | 2172584SM | 2   | RING, Retaining    |
| 59     | 1656009SM | 2   | RETAINER, Slipper  |
| 60     | 1656007SM | 2   | WASHER, Front      |
| 61     | 1656006SM | 2   | SPRING             |
| 62     | 1656005SM | 2   | WASHER, Rear       |

Not For  
Reproduction

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**Footnotes:**

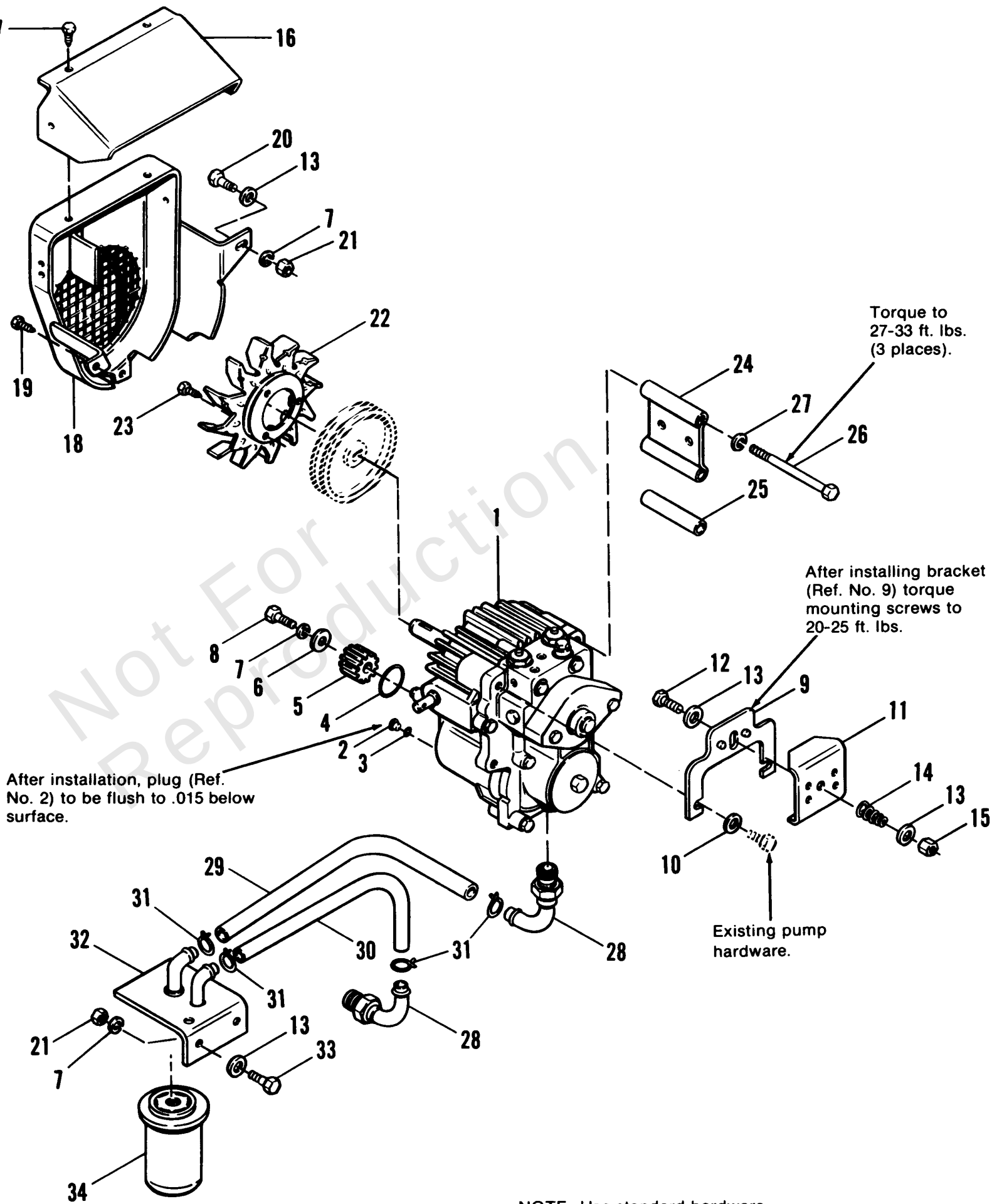
Note:\* Not a serviceable part.

Note:\* Not serviced seperately, order complete Charge Pump Kit 1685128.

# Hydrostatic Pump Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.

## Hydrostatic Pump Group

| REF NO | PART NO   | QTY | DESCRIPTION                      |
|--------|-----------|-----|----------------------------------|
| 1      | 1650301   | 1   | HYDRO PUMP & MOTOR UNIT          |
| 2      | 1651705   | 1   | PLUG                             |
| 3      | 1651704   | 1   | "O" RING                         |
| 4      | 1651703SM | 1   | "O" RING                         |
| 5      | 2166003SM | 1   | PINION, Motor Shaft              |
| 6      | 2123144   | 1   | WASHER                           |
| 7      | 1917356SM | 4   | LOCKWASHER, 5/16                 |
| 8      | 2821332   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 3/4 |
| 9      | 1651089SM | 1   | BRACKET                          |
| 10     | 2156065   | 2   | WASHER                           |
| 11     | 1651090SM | 1   | LATCH, Release                   |
| 12     | 2821333   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 1   |
| 13     | 2817642   | 5   | WASHER, 5/16                     |
| 14     | 2153010SM | 1   | SPRING, Tension                  |
| 15     | 2823362   | 1   | LOCKNUT, Hex, 5/16-18            |
| 16     | 2178779SM | 1   | DEFLECTOR, Shroud                |
| 17     | 2823735   | 4   | SCREW, Taptite #10-32 x 3/8      |
| 18     | 1666415SM | 1   | SHROUD ASSY. W/Screen            |
| 19     | 2824856   | 1   | SCREW, Thd. Form., 5/16-18 x 1/2 |
| 20     | 2821332   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 3/4 |
| 21     | 1917372SM | 3   | NUT, Hex, Full, 5/16-18          |
| 22     | 2166022SM | 1   | FAN, Pulley                      |
| 23     | 2827428   | 3   | SCREW, Thd. Form., 1/4-20 x 3/8  |
| 24     | 1650633SM | 1   | SPACER                           |
| 25     | 1650524   | 1   | SPACER                           |
| 26     | 926695    | 3   | CAPSCREW, Hex Hd., 3/8-16 x 5    |
| 27     | 1916965SM | 3   | LOCKWASHER, 3/8                  |
| 28     | 1669954SM | 2   | HOSE, Insert                     |
| 29     | 1650564SM | 1   | HOSE                             |
| 30     | 1650564SM | 1   | HOSE                             |
| 31     | 2171457   | 4   | CLAMP, Hose                      |
| 32     | 1650989   | 1   | SUPPORT ASSY., Oil Filter        |
| 33     | 2823325   | 2   | CAPSCREW. Hex Hd., 5/16-18 x 7/8 |
| 34     | 1650954SM | 1   | FILTER ASSY.                     |

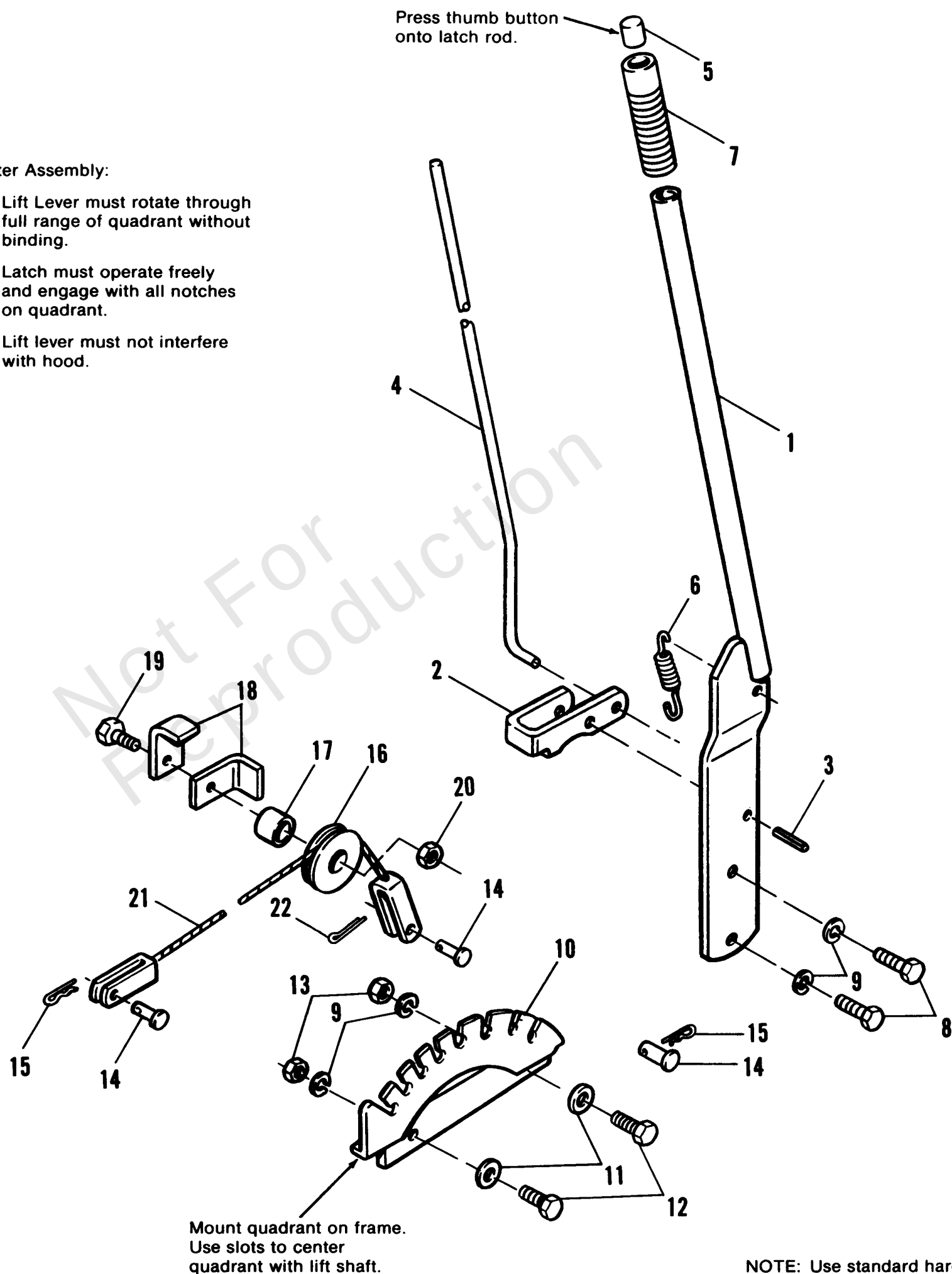
## Lift Lever & Cable Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491

### After Assembly:

1. Lift Lever must rotate through full range of quadrant without binding.
2. Latch must operate freely and engage with all notches on quadrant.
3. Lift lever must not interfere with hood.



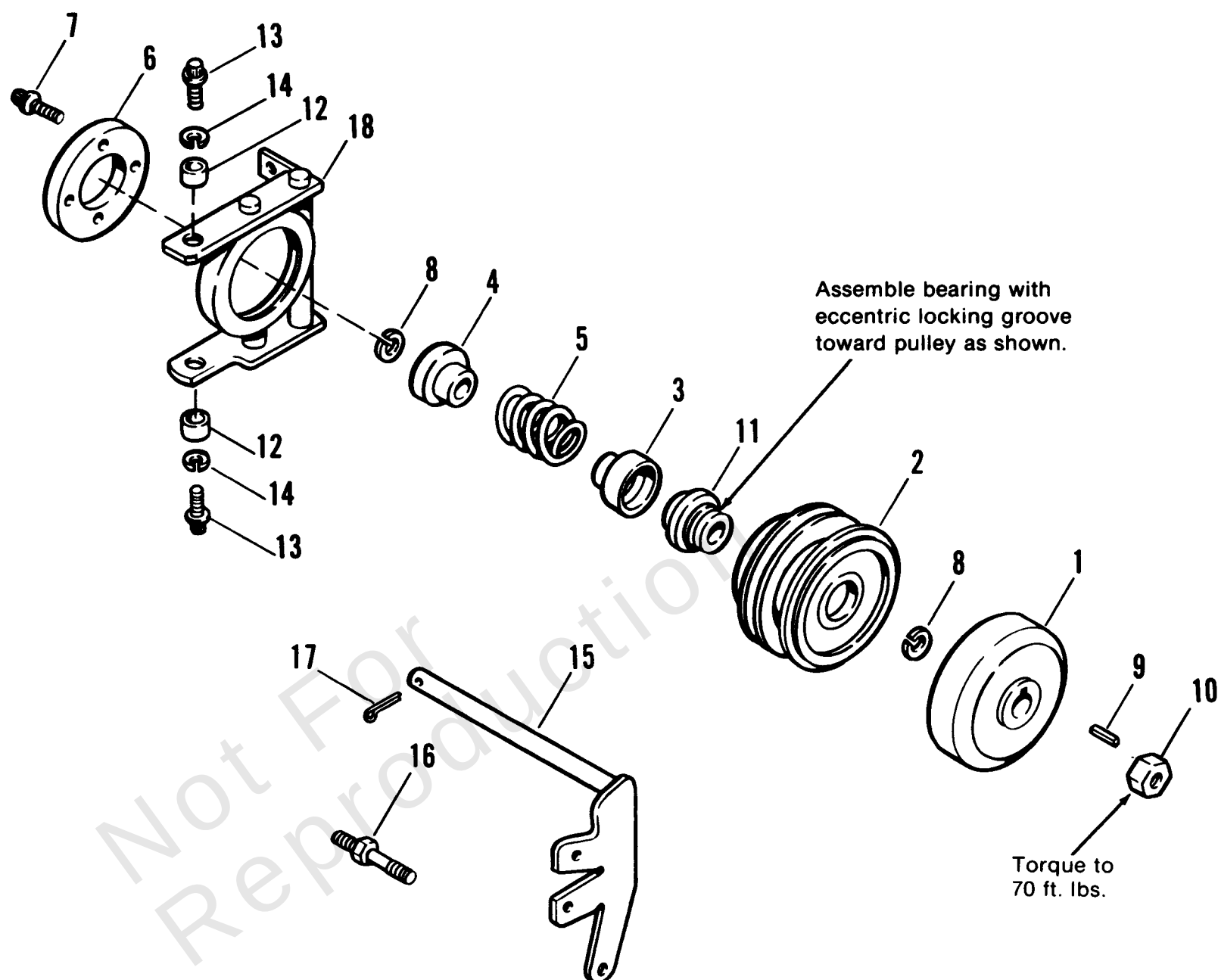
### *Lift Lever & Cable Group*

| REF NO | PART NO   | QTY | DESCRIPTION                     |
|--------|-----------|-----|---------------------------------|
| 1      | 1666257SM | 1   | LIFT LEVER ASSEMBLY             |
| 2      | 173039    | 1   | LATCH, Lift Lever               |
| 3      | 918390    | 1   | PIN, Spring, 3/8 x 1-1 /4       |
| 4      | 1666663   | 1   | ROD, Latch                      |
| 5      | 1650157SM | 1   | BUTTON                          |
| 6      | 1650155SM | 1   | SPRING                          |
| 7      | 2156209   | 1   | GRIP                            |
| 8      | 2823490   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1   |
| 9      | 1916965SM | 4   | LOCKWASHER, 3/8                 |
| 10     | 171599    | 1   | QUADRANT                        |
| 11     | 2817642   | 2   | WASHER, 5/16                    |
| 12     | 2821966   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 7/8 |
| 13     | 2816950SM | 2   | NUT, Hex, Full, 3/8-16          |
| 14     | 1708298SM | 3   | PIN                             |
| 15     | 1918196SM | 2   | CLIP, Spring                    |
| 16     | 2172725SM | 1   | PULLEY                          |
| 17     | 2157081SM | 1   | SPACER                          |
| 18     | 2174723SM | 2   | GUARD, Cable                    |
| 19     | 2108418   | 1   | SCREW, Special                  |
| 20     | 2828731   | 1   | LOCKNUT, Hex, Jam, 3/8-16       |
| 21     | 1673700SM | 1   | LIFT CABLE ASSY.                |
| 22     | 2816241   | 1   | PIN, Cotter, 3/32 x 7/8         |

**PTO Cone Clutch Group**

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.

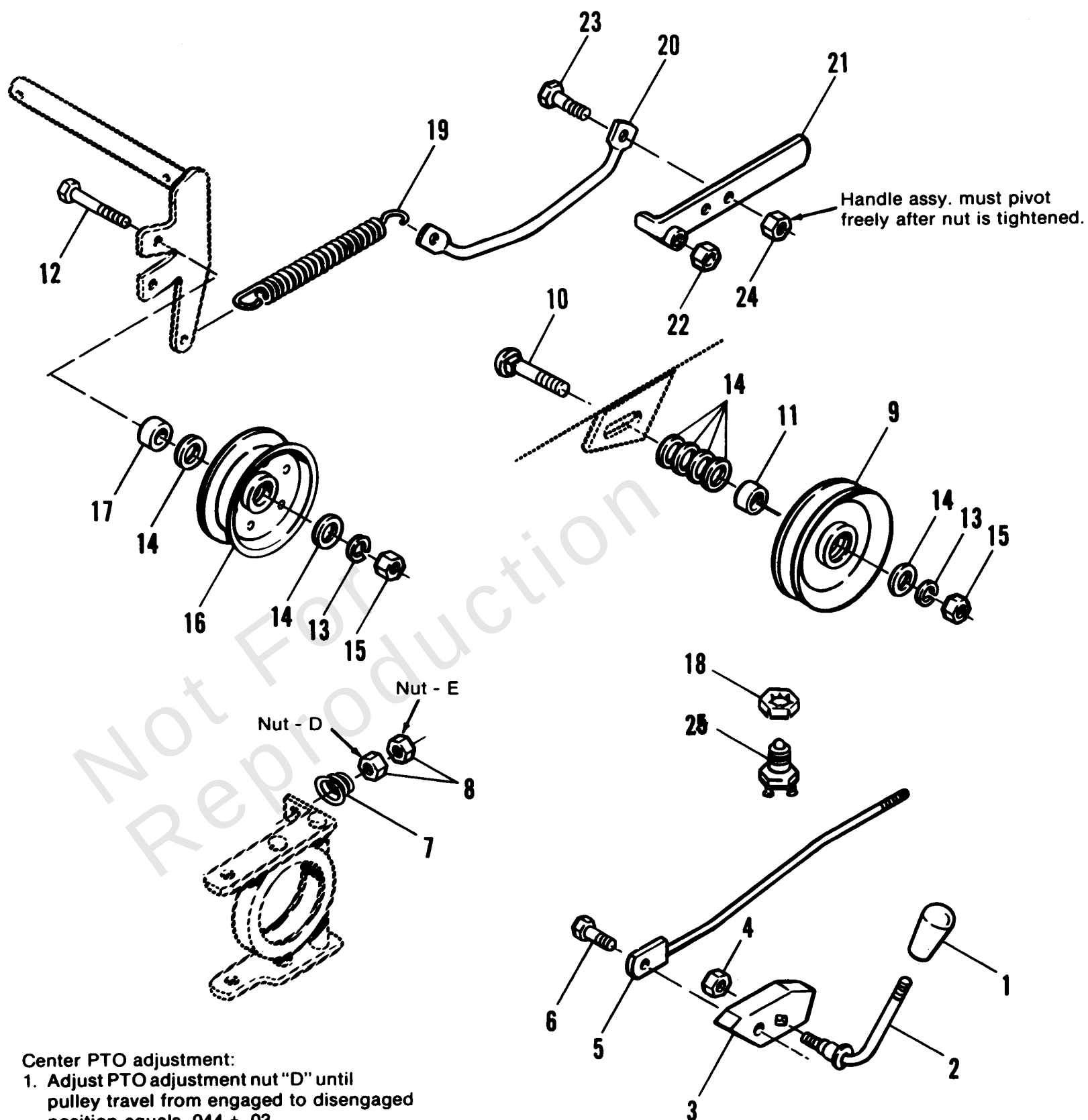
### ***PTO Cone Clutch Group***

| REF NO | PART NO   | QTY | DESCRIPTION                      |
|--------|-----------|-----|----------------------------------|
| 1      | 2174862SM | 1   | CLUTCH PLATE ASSY.               |
| 2      | 1650304SM | 1   | PULLEY                           |
| 3      | 1671339SM | 1   | GUIDE, Spring, Outside           |
| 4      | 1671339SM | 1   | GUIDE, Spring, Inside            |
| 5      | 2171772SM | 1   | SPRING                           |
| 6      | 2173957SM | 1   | DISC, Brake                      |
| 7      | 2820036SM | 4   | CAPSCREW, Skt. Hd., 1/4-20 x 5/8 |
| 8      | 2172206SM | 2   | RING, Retaining                  |
| 9      | 2805123SM | 1   | KEY                              |
| 10     | 2822133   | 1   | LOCKNUT, Hex, 3/4 x 16           |
| 11     | 1650254SM | 1   | BEARING ASSY.                    |
| 12     | 2171371SM | 2   | SPACER                           |
| 13     | 1960086SM | 2   | SCREW, TRUSS HD TORX             |
| 14     | 1917356SM | 2   | LOCKWASHER, 5/16                 |
| 15     | 1666781SM | 1   | PIVOT ARM ASSY.                  |
| 16     | 2157273SM | 1   | STUD                             |
| 17     | 2818459   | 1   | PIN, Cotter, 3/16 x 1-1/2        |
| 18     | 1650906SM | 1   | PIVOT ASSY.                      |

## PTO Control Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



### Center PTO adjustment:

1. Adjust PTO adjustment nut "D" until pulley travel from engaged to disengaged position equals  $.044 \pm .03$ .
2. Secure adjustment by locking nuts "D" and "E" together.
3. Check clutch for proper disengagement.

NOTE: Use standard hardware torque spec. chart unless otherwise noted.

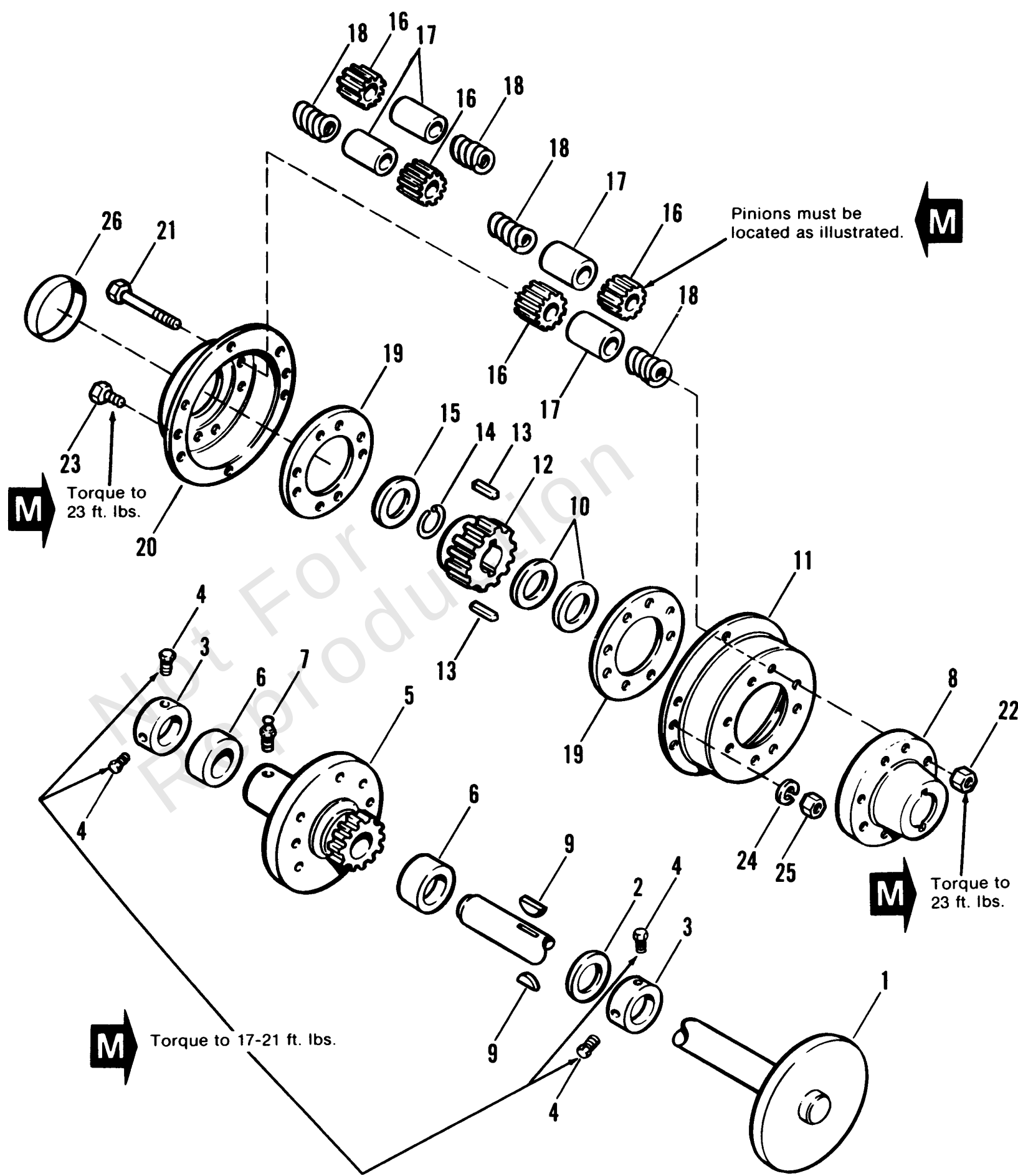


## ***PTO Control Group***

| REF NO | PART NO   | QTY | DESCRIPTION                          |
|--------|-----------|-----|--------------------------------------|
| 1      | 2172038SM | 1   | KNOB                                 |
| 2      | 2174664   | 1   | HANDLE, Clutch P.T.O.                |
| 3      | 2173991SM | 1   | LEVER                                |
| 4      | 1930645SM | 1   | LOCKNUT, Hex, 3/8-16                 |
| 5      | 173988    | 1   | CONTROL ROD ASSY. (7116 & 7117 only) |
| 5      | 1671323SM | 1   | CONTROL ROD ASSY. (7112 only)        |
| 6      | 2174686   | 1   | CAPSCREW, Special                    |
| 7      | 2175316   | 1   | SPRING (7116 & 7117 only)            |
| 7      | 2157127SM | 1   | SPRING (7112 only)                   |
| 8      | 1917372SM | 2   | NUT, Hex, Full, 5/16-18              |
| 9      | 1665440SM | 1   | PULLEY ASSY., W/Bearing              |
| 10     | 2831352   | 1   | BOLT, Carriage. 3/8-16 x 1-1/2       |
| 11     | 1666294SM | 1   | SPACER                               |
| 12     | 2823701   | 1   | CAPSCREW, Hex Hd., 3/8-16 x 2        |
| 13     | 1916965SM | 2   | LOCKWASHER, 3/8                      |
| 14     | 2817642   | 7   | WASHER, 5/16                         |
| 15     | 2816950SM | 2   | NUT, Hex, Full, 3/8-16               |
| 16     | 1606554SM | 1   | PULLEY, Idler                        |
| 17     | 2157081SM | 1   | SPACER                               |
| 18     | 1930647   | 1   | NUT, Pal                             |
| 19     | 1715435SM | 1   | SPRING, EXTENSION, 1.                |
| 20     | 2164047   | 1   | ROD, Tension                         |
| 21     | 2164155SM | 1   | HANDLE ASSY.                         |
| 22     | 2824058   | 1   | LOCKNUT, Hex, 7/16-14                |
| 23     | 2821332   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 3/4     |
| 24     | 2823362   | 1   | LOCKNUT, Hex, 5/16-18                |
| 25     | 2177522SM | 1   | SWITCH, Interlock                    |

# Rear Axle & Differential Group

Note: Unless noted otherwise, use the standard torque specifications Mfg. No: 1690491



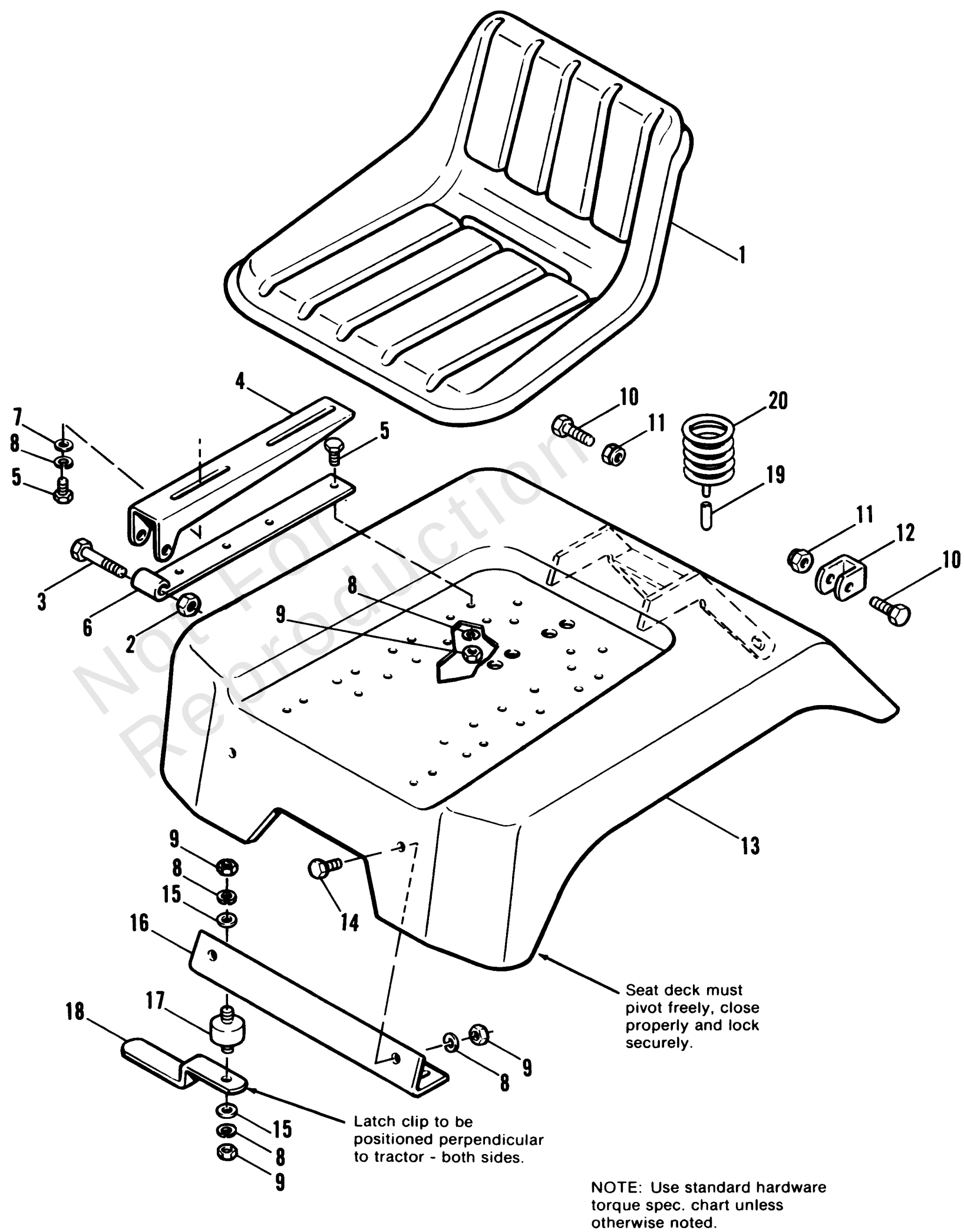
## ***Rear Axle & Differential Group***

| REF NO | PART NO    | QTY | DESCRIPTION                                                   |
|--------|------------|-----|---------------------------------------------------------------|
| 1      | 2177900ASM | 1   | REAR AXLE ASSY.                                               |
| 2      | 2105050    | 1   | WASHER                                                        |
| 3      | 2154065SM  | 2   | COLLAR, Set                                                   |
| 4      | 2828721    | 4   | SETSCREW, Sq. Hd., 5/16-18 x 1/2                              |
| 5      | 2176945SM  | 1   | R.H. WHEEL HUB ASSY.                                          |
| 6      | 2153068SM  | 2   | BEARING                                                       |
| 7      | 2815019SM  | 1   | FITTING, Grease                                               |
| 8      | 2164217SM  | 1   | CARRIER, Diff.                                                |
| 9      | 2157120SM  | 2   | KEY, Drive                                                    |
| 10     | 2171515    | 2   | WASHER, Axle                                                  |
| 11     | 2171853SM  | 1   | COVER, Diff.                                                  |
| 12     | 2177041SM  | 1   | GEAR-2.470OD 1.127ID                                          |
| 13     | 2830671SM  | 2   | KEY, Hi Pro, 1/4 x 3/4                                        |
| 14     | 2154291SM  | 1   | RING, Retaining                                               |
| 15     | 2154277    | 1   | WASHER, Axle                                                  |
| 16     | 2158579SM  | 8   | PINION, Diff.                                                 |
| 17     | 2121083SM  | 8   | SPINDLE, Diff. Pinion                                         |
| 18     | 2162085SM  | 8   | SPRING                                                        |
| 19     | 2171517SM  | 2   | RING, Spacer                                                  |
| 20     | 2103189SM  | 1   | COVER, Diff.                                                  |
| 21     | 2821972    | 8   | CAPSCREW, Hex Hd., 3/8-16 x 2-1/2                             |
| 22     | 1930645SM  | 8   | NUT, Hex, 3/8-16                                              |
| 23     | 2821959    | 6   | CAPSCREW, Hex, 1/4-20 x 5/8                                   |
| 24     | 2816964SM  | 6   | LOCKWASHER, 1/4                                               |
| 25     | 2816622SM  | 6   | NUT, Hex, 1/4-14                                              |
| 26     | 2121190SM  | 1   | SEAL, Cover                                                   |
| 27     | 1650519SM  | 1   | DIFFERENTIAL SUBASSY. (Includes Ref. No's. 8, 11, 16 thru 26) |

Seat & Deck Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



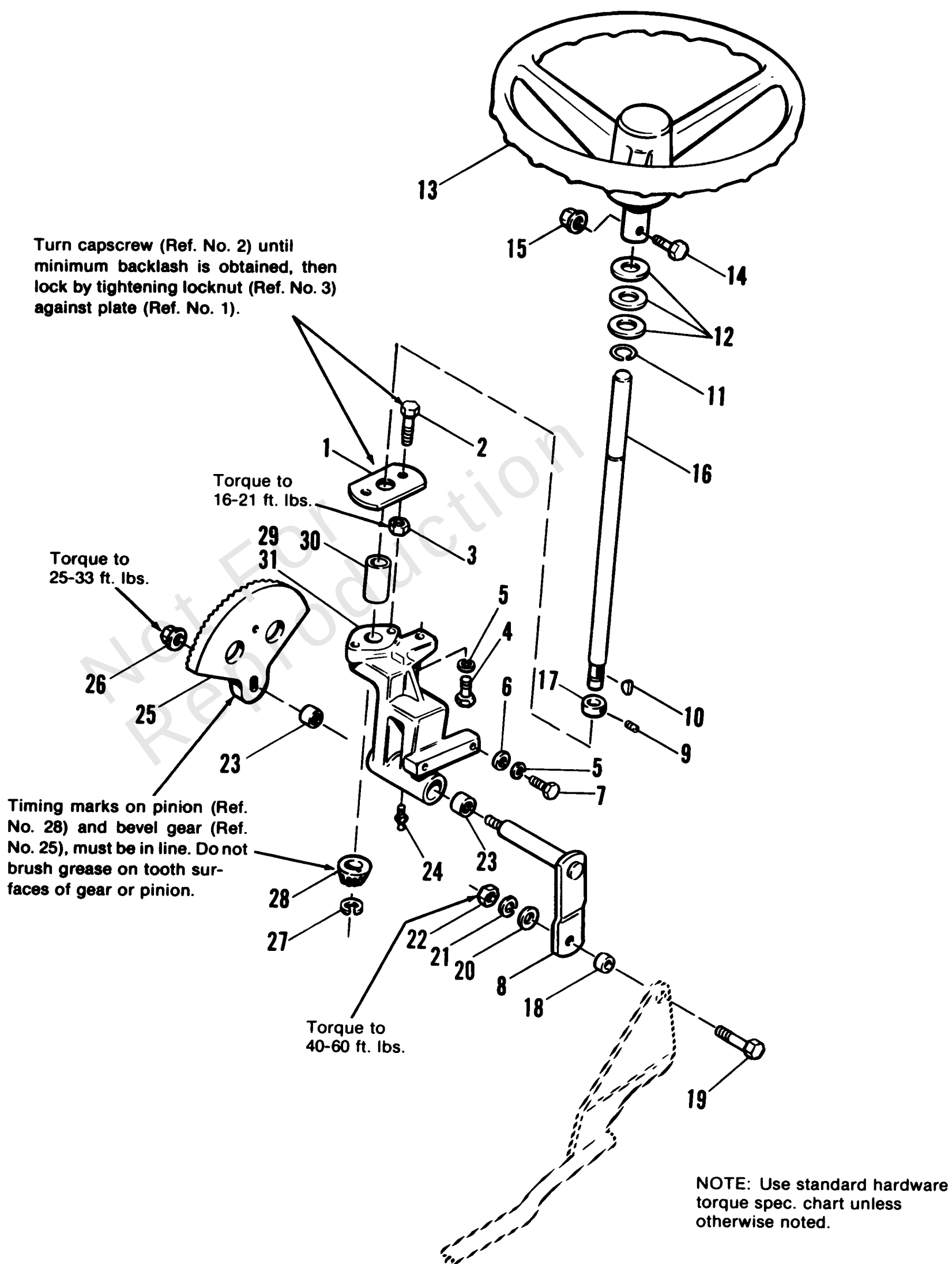
## Seat & Deck Group

| REF NO | PART NO   | QTY | DESCRIPTION                        |
|--------|-----------|-----|------------------------------------|
| 1      | 1686712SM | 1   | SEAT                               |
| 2      | 2823428   | 2   | LOCKNUT, Hex, Full, 3/8-16         |
| 3      | 2823701   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 2      |
| 4      | 1701559SM | 2   | HINGE, Upper                       |
| 5      | 2821332   | 10  | CAPSCREW, Hex Hd., 5/16-18 x 3/4   |
| 6      | 1666737SM | 2   | HINGE, Lower                       |
| 7      | 2817642   | 4   | WASHER, Plain, 5/16                |
| 8      | 1917356SM | 16  | LOCKWASHER. 5/16                   |
| 9      | 1917372SM | 12  | NUT, Hex, 5/16-18                  |
| 10     | 1920415SM | 2   | CAPSCREW, Hex, Hd., 3/8-16 x 1-1/4 |
| 11     | 1930645SM | 2   | LOCKNUT, Hex, 3/8-16               |
| 12     | 1607870SM | 1   | STOP, Seat Deck                    |
| 13     | 1715769SM | 1   | DECK ASSY., Seat                   |
| 14     | 2825205   | 2   | CAPSCREW, Hex, Hd., 5/16-18 x 5/8  |
| 15     | 2817377   | 4   | WASHER, 1/4                        |
| 16     | 2164029SM | 1   | BRACKET, Front Seat Deck           |
| 17     | 1666744SM | 2   | CONNECTOR. Cushion                 |
| 18     | 1606823SM | 2   | CLIP, Latch                        |
| 19     | 1666691SM | 2   | COVER, Wire                        |
| 20     | 1666690SM | 2   | SPRING, Seat                       |

## *Steering Group*

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



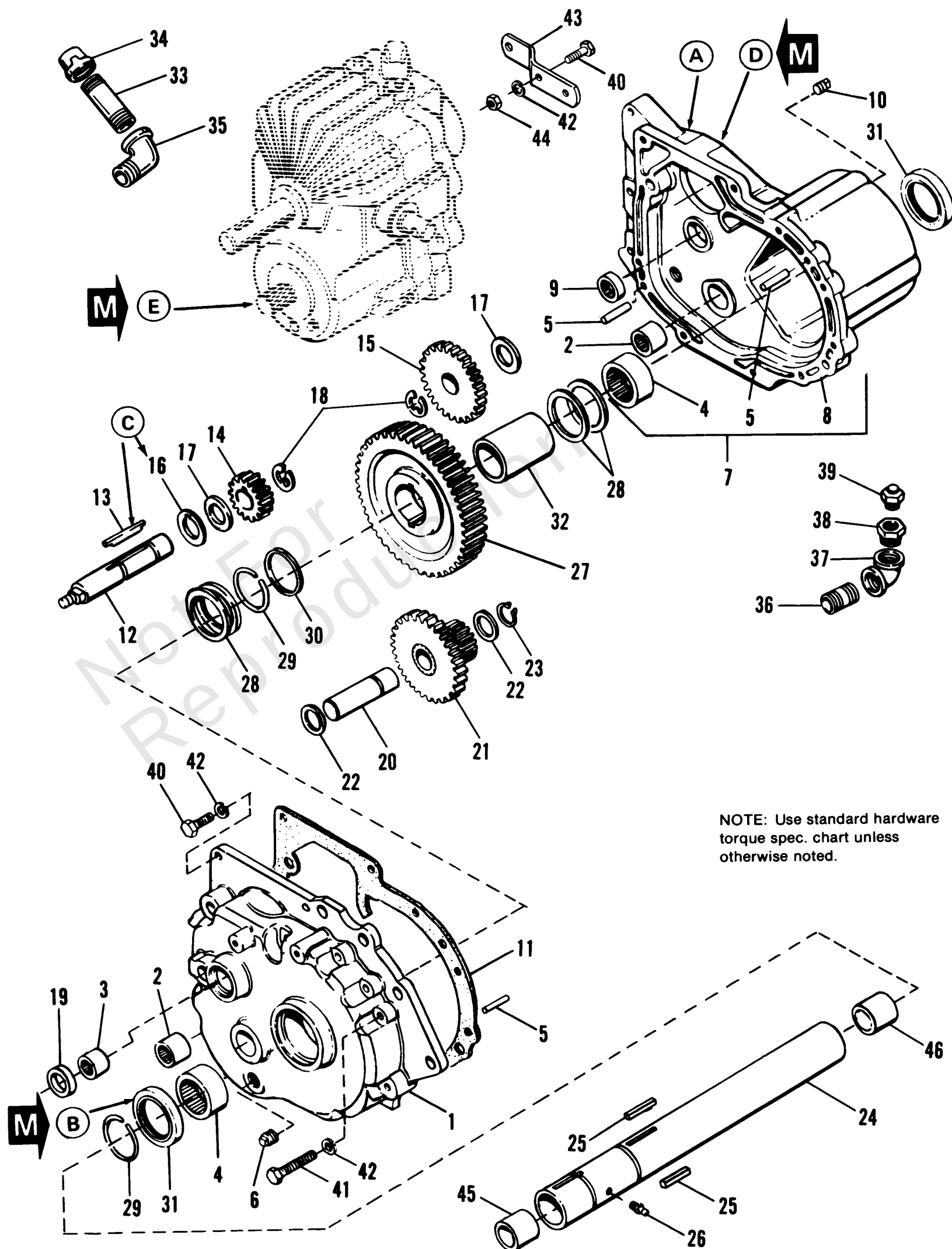
## Steering Group

| REF NO | PART NO   | QTY | DESCRIPTION                                                               |
|--------|-----------|-----|---------------------------------------------------------------------------|
| 1      | 2171000SM | 1   | PLATE, Steering                                                           |
| 2      | 1920415SM | 2   | CAPSCREW, Hex Hd., 3/8-16 x 1-1/4                                         |
| 3      | 2828731   | 2   | LOCKNUT, Hex, Jam, 3/8-16                                                 |
| 4      | 2821965   | 1   | CAPSCREW, Hex, 3/8-16 x 3/4                                               |
| 5      | 1916965SM | 3   | LOCKWASHER, 3/8                                                           |
| 6      | 1924940SM | 2   | WASHER, Plain, 3/8                                                        |
| 7      | 2821966   | 2   | CAPSCREW, Hex Hd., 3/8-16 x 7/8                                           |
| 8      | 1666204SM | 1   | ARM ASSY., Steering                                                       |
| 9      | 2828734   | 1   | SETSCREW, Skt. Hd., 5/16-18 x 1/4                                         |
| 10     | 2810224SM | 1   | KEY, Woodruff #6, 5/32 x 5/8                                              |
| 11     | 2154264SM | 1   | RING, Retaining                                                           |
| 12     | 158223    | 3   | WASHER                                                                    |
| 13     | 1606342SM | 1   | WHEEL, Steering                                                           |
| 14     | 2821977   | 1   | CAPSCREW, Hex Hd., 5/16-18 x 1-1/4                                        |
| 15     | 2829001   | 1   | LOCKNUT, Flange, 5/16-18                                                  |
| 16     | 171020    | 1   | SHAFT, Steering                                                           |
| 17     | 1729254SM | 1   | COLLAR, Set                                                               |
| 18     | 2105051   | 1   | SPACER                                                                    |
| 19     | 2820328   | 1   | CAPSCREW, Hex Hd., 1/2-13 x 1-1/2                                         |
| 20     | 2818431   | 1   | WASHER, Plain                                                             |
| 21     | 2816966   | 1   | LOCKWASHER, 1/2                                                           |
| 22     | 2816951   | 1   | NUT, Hex, 1/2-13                                                          |
| 23     | 2154258SM | 2   | BEARING, Needle                                                           |
| 24     | 2814687   | 1   | FITTING, Grease                                                           |
| 25     | 2170987SM | 1   | GEAR, Bevel                                                               |
| 26     | 2830650   | 1   | LOCKNUT, Hex, Flange, 7/16-14                                             |
| 27     | 2827793SM | 1   | "E" RING                                                                  |
| 28     | 2170988SM | 1   | PINION, Bevel                                                             |
| 29     | 2171832   | 1   | HOUSING ASSY., Steering<br>-Reference No. 29 includes Ref. No's. 23 & 30. |
| 30     | 2170992SM | 1   | BUSHING                                                                   |

# Transmission Group

Note: Unless noted otherwise, use the standard torque specifications

Mfg. No: 1690491



NOTE: Use standard hardware torque spec. chart unless otherwise noted.



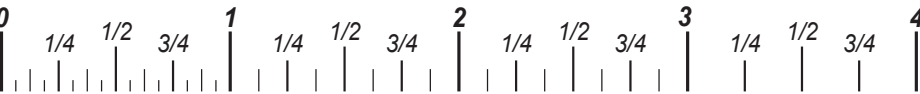
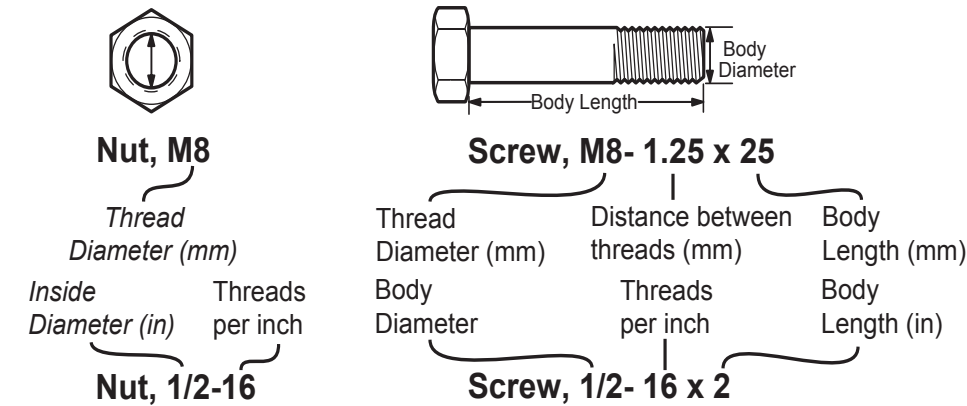
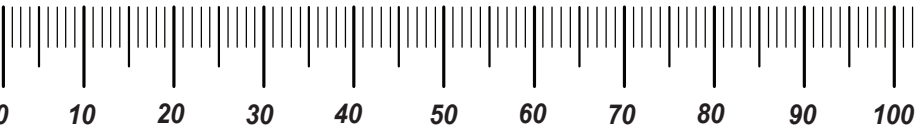
## Transmission Group

| REF NO | PART NO    | QTY | DESCRIPTION                         |
|--------|------------|-----|-------------------------------------|
| 1      | 1650427SM  | 1   | COVER ASSY., Gear Case (W/Bearings) |
| 2      | 2166018SM  | 2   | BEARING, Needle                     |
| 3      | 2166019SM  | 1   | BEARING, Needle                     |
| 4      | 1652469SM  | 2   | BEARING, Needle                     |
| 5      | 2818113    | 2   | PIN, Roll, 3/8 x 1                  |
| 6      | 2801653    | 1   | PLUG, Pipe                          |
| 7      | 1650429SM  | 1   | GEAR CASE ASSY., (W/Bearings)       |
| 8      | 1650429SM  | 1   | GEAR CASE                           |
| 9      | 2154271SM  | 1   | BEARING, Needle                     |
| 10     | 2801652SM  | 1   | PLUG, Pipe                          |
| 11     | 2166043SM  | 1   | GASKET                              |
| 12     | 1650775SM  | 1   | SHAFT, Brake                        |
| 13     | 2166014SM  | 1   | KEY                                 |
| 14     | 2176243SM  | 1   | PINION                              |
| 15     | 2166004SM  | 1   | GEAR                                |
| 16     | 1651078ASM | 1   | WASHER                              |
| 17     | 2166013    | 2   | WASHER                              |
| 18     | 2176980SM  | 2   | RING, Retaining                     |
| 19     | 2166021SM  | 1   | SEAL                                |
| 20     | 2166012SM  | 1   | SHAFT, Interm.                      |
| 21     | 2176236SM  | 1   | PINION & SHAFT ASSY.                |
| 22     | 2166016    | 2   | WASHER                              |
| 23     | 2166017SM  | 1   | RING, Retaining                     |
| 24     | 1651517SM  | 1   | AXLE TUBE ASSY.                     |
| 25     | 2156086SM  | 2   | KEY                                 |
| 26     | 2814687    | 1   | FITTING, Grease                     |
| 27     | 1652504    | 1   | GEAR, Drive                         |
| 28     | 2154097SM  | 4   | WASHER                              |
| 29     | 2154268SM  | 2   | RING, Retaining                     |
| 30     | 2166167    | 1   | WASHER                              |
| 31     | 2154269SM  | 2   | SEAL                                |
| 32     | 1651512    | 1   | SPACER, L.H. Axle                   |
| 33     | 2801493    | 1   | NIPPLE, Pipe                        |
| 34     | 2801752    | 1   | CAP, Pipe                           |
| 35     | 2801723    | 1   | STREET, Elbow                       |
| 36     | 2801480SM  | 1   | NIPPLE, Pipe                        |
| 37     | 2801677    | 1   | ELBOW, Pipe                         |
| 38     | 2801825SM  | 1   | BUSHING, Pipe                       |
| 39     | 2172899SM  | 1   | VALVE, Relief                       |
| 40     | 2821333    | 7   | CAPSCREW, Hex Hd., 5/16-18 x 3/4    |
| 41     | 2821978    | 4   | CAPSCREW, Hex Hd., 5/16-18 x 2      |
| 42     | 1917356SM  | 11  | LOCKWASHER, 5/16                    |
| 43     | 1650652    | 1   | SUPPORT, Spring                     |
| 44     | 1917372SM  | 2   | NUT, Hex, Full, 5/16-18             |
| 45     | 1653120SM  | 2   | BUSHING                             |

# Hardware Identification & Torque Specifications

| Torque Specification Chart                             |                                                                                                |      |                                                                                                |      |                                                                                                 |      |                                                                                                 |      |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------------------|------|
| FOR STANDARD METRIC MACHINE HARDWARE (Tolerance ± 20%) |                                                                                                |      |                                                                                                |      |                                                                                                 |      |                                                                                                 |      |
| Property Class                                         | <br>Class 5.6 |      | <br>Class 8.8 |      | <br>Class 10.9 |      | <br>Class 12.9 |      |
| Size Of Hardware                                       | in/lbs<br>ft/lbs                                                                               | Nm.  | in/lbs<br>ft/lbs                                                                               | Nm.  | in/lbs<br>ft/lbs                                                                                | Nm.  | in/lbs<br>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.



### 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).

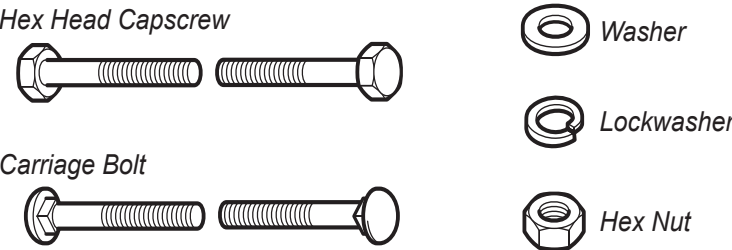
When bolt or capscrew is identified as 1/2 - 16 x 2" (M8 - 1.25 x 50), this means the *Nominal size*, or body diameter is 1/2 inch (8mm metric thread diameter), the second number, 16, represents the *threads per inch*, (*distance between threads*). The final number is the body length of the bolt or screw,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

| Torque Specification Chart                      |                                                                                                    |       |                                                                                                    |       |                                                                                                    |         |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------|-------|----------------------------------------------------------------------------------------------------|---------|
| FOR STANDARD MACHINE HARDWARE (Tolerance ± 20%) |                                                                                                    |       |                                                                                                    |       |                                                                                                    |         |
| Hardware Grade                                  | <br>SAE Grade 2 |       | <br>SAE Grade 5 |       | <br>SAE Grade 8 |         |
| Size Of Hardware                                | in/lbs<br>ft/lbs                                                                                   | Nm.   | in/lbs<br>ft/lbs                                                                                   | Nm.   | in/lbs<br>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



### Wrench & Fastener Size Guide

|                                                                                                                           |                                                                                                                           |                                                                                                                           |                                                                                                                                                         |                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <br>1/4" Bolt or Nut<br>Wrench—7/16" | <br>5/16" Bolt or Nut<br>Wrench—1/2" | <br>3/8" Bolt or Nut<br>Wrench—9/16" | <br>7/16" Bolt or Nut<br>Wrench (Bolt)—5/8"<br>Wrench (Nut)—11/16" | <br>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                                                                                           |

