



# CbN Series 3000

## Gearmotors and Reducers

### Installation and Maintenance Manual

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**FORM**  
**8772E**  
**Revised**  
**October 2015**

#### **⚠ WARNING**

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

#### **⚠ CAUTION**

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.

## Safety First

High voltage and rotating parts can cause serious or fatal injury. Safe installation, operation and maintenance must be performed by qualified personnel. Familiarization with and adherence to NEMA MG2, the National Electric Code and local codes is recommended. It is important to observe safety precautions to protect personnel from possible injury. Personnel should be instructed to:

1. Avoid contact with energized circuits or rotating parts.
2. Disconnect all power sources before initiating any maintenance or repair.
3. Act with care in accordance with prescribed procedures in handling and lifting this equipment.
4. Be sure the unit is electrically grounded in accordance with code requirements.
5. Be sure equipment is properly enclosed to prevent access by children or other unauthorized personnel in order to prevent possible accidents.
6. Be sure shaft key is fully captive before unit is energized.
7. Avoid contact with capacitors until safe discharge procedures have been completed.
8. Most units are shipped with oil. Always be sure oil lubricated units are filled with correct oil to proper level before operating.
9. Provide proper safeguards for personnel against rotating parts and applications involving high inertia loads, which can cause overspeed.
10. Avoid extended exposure to equipment with high noise levels.
11. Be familiar with the equipment and read all instructions thoroughly before installing or working on equipment.

## Installation Instructions

### Start-Up

Before operating the reducer or gearmotor, the following must be done:

- Install the drive on a rigid and vibration-free surface.
- Remove the protective coating on the shaft and flange. Use solvent if necessary.
- Carefully install coupling, sheaves, sprockets, or pinions on shaft. Mount as close to the shaft shoulder as possible.
- It is preferable to use heat instead of force. **Do not hammer on shaft!**
- Check shaft alignment when using direct coupling.
- Check shaft parallelism when using belt or chain drive.

**CAUTION:** Refer to belt manufacturer's recommendation for belt tension. (Tension should not be applied on chain drives.)

- Check oil level in oil lubricated reducer.
- Install breather plug in the plug hole per recommendations shown on page (5, 7, or 9) for sizes larger than frame 30.

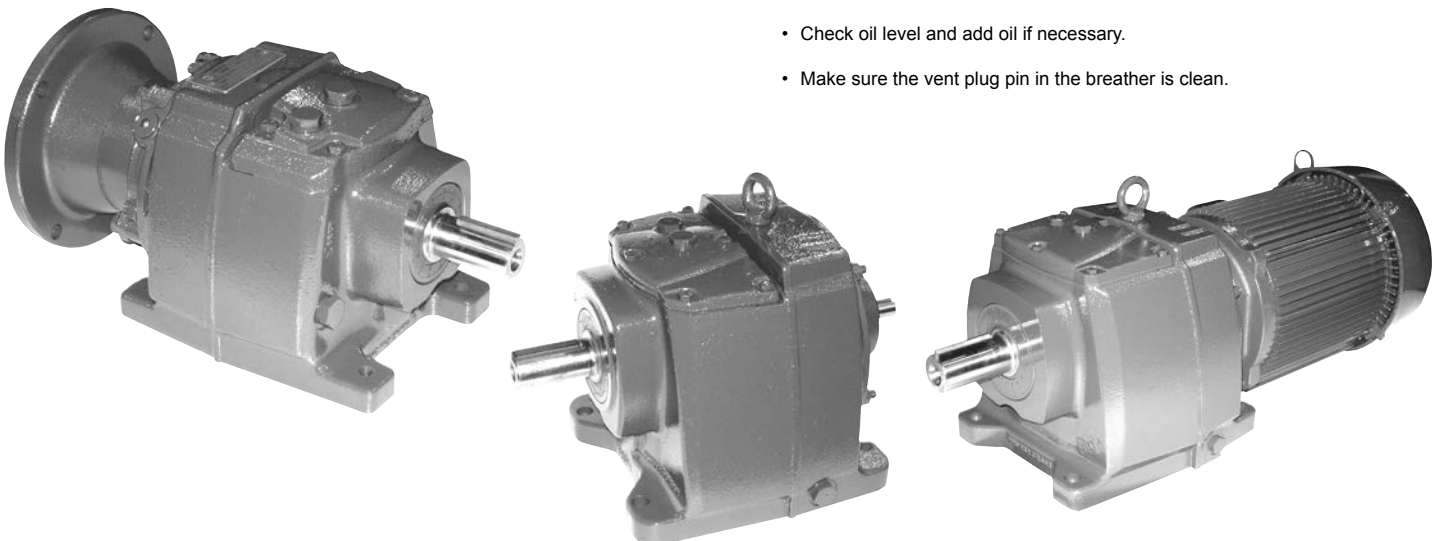
### Maintenance

Safe operation and product performance is improved with periodic inspections. It is recommended the reducer or gearmotor be inspected every 50 hours of operating time.

- Check mounting bolts and belt tension (if applicable).

**Note:** The preventative maintenance list below should be performed every 5000 hours of operating time:

- Check oil level and add oil if necessary.
- Make sure the vent plug pin in the breather is clean.



A Regal Brand

**REGAL**

## Lubrication

Series 3000 CbN gearing is shipped with one of the following synthetic lubricants per the table below and fitted with a magnetic drain. Each reducer is filled according to the mounting position specified when ordered. Refer to the unit nameplate and the chart to the right for the mounting position arrangement for your unit.

In the case of synthetic oil, the lubricant does not require changing, but it is recommended that proper oil level be checked periodically.

### Standard Synthetic Gear Oil (Non-Food Grade)

#### No Backstop

| Manufacturer | -25° F to 125° F<br>(-30° C to 50° C) |
|--------------|---------------------------------------|
| Fuchs *      | Sintogear 125                         |
| Mobil *      | Mobilgear SHC 150                     |
| Shell *      | Omala Fluids HD 150                   |

#### With Backstop (1)

| Manufacturer | -25° F to 125° F<br>(-30° C to 50° C) |
|--------------|---------------------------------------|
| Shell *      | Omala RL 100                          |
| Mobil *      | SHC 629                               |

### Standard Synthetic Gear Oil (H1 Rated Food Grade Requirements)

#### No Backstop

| Manufacturer | 22° F to 125° F<br>(-20° C to 50° C) |
|--------------|--------------------------------------|
| Mobil *      | SHC Cibus 150                        |

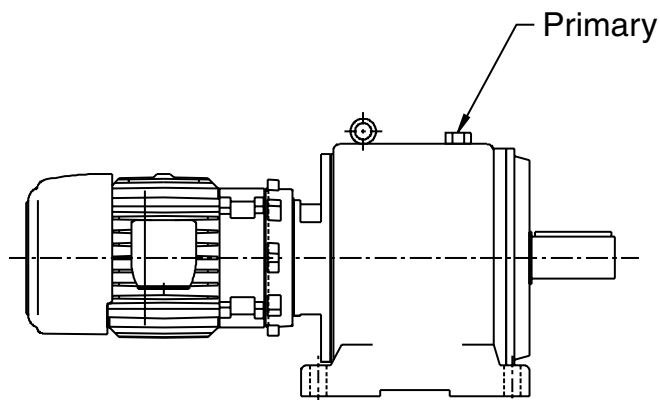
#### CAUTION!

- Never mix synthetic oil and mineral oil.
- Never use extreme pressure (EP) oil in a reducer with a backstop.

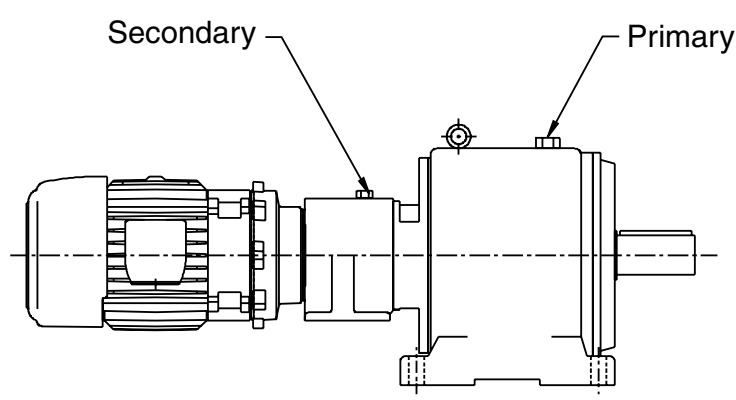
### Acceptable Mineral Oil Lubricants

| Ambient Range of Installation   |                               |            |            |               |                             |
|---------------------------------|-------------------------------|------------|------------|---------------|-----------------------------|
| -4°F to 14°F<br>(-20°C to 10°C) | 14°F to 122°F (-10°C to 50°C) |            |            |               | 122°F and Above<br>(50°C +) |
|                                 | No Backstop                   |            |            | With Backstop |                             |
| ISO VG 68                       | ISO VG 100                    | ISO VG 150 | ISO VG 220 | ISO VG 150    | ISO VG 320                  |

#### One Thru Three Stage



#### Combined



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## Lubrication Oil Capacities (U.S. Quarts)

### One to Three Reduction

| Stages                      | Gear Frame | Mounting Positions * |       |       |       |       |      |      |      |       |       |       |       |
|-----------------------------|------------|----------------------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|
|                             |            | B3                   | B5    | B6    | B7    | B8    | B52  | B53  | B54  | V1    | V3    | V5    | V6    |
| ONE<br>(single reduction)   | 30         | 0.33                 | 0.33  | 0.33  | 0.33  | 0.33  | 0.33 | 0.33 | 0.33 | 0.33  | 0.33  | 0.33  | 0.33  |
|                             | 31         | 0.37                 | 0.37  | 0.53  | 0.53  | 0.74  | 0.53 | 0.74 | 0.53 | 0.58  | 1.06  | 0.58  | 1.06  |
|                             | 32         | 0.26                 | 0.26  | 0.58  | 0.58  | 0.79  | 0.58 | 0.79 | 0.58 | 0.63  | 0.84  | 0.63  | 0.84  |
|                             | 33         | 0.95                 | 0.95  | 1.48  | 1.48  | 2.01  | 1.48 | 2.01 | 1.48 | 2.22  | 2.22  | 2.22  | 2.22  |
|                             | 34         | 2.11                 | 2.11  | 3.17  | 3.38  | 4.44  | 3.17 | 4.44 | 3.38 | 4.02  | 3.17  | 4.02  | 3.17  |
|                             | 35         | 3.38                 | 3.38  | 5.49  | 5.28  | 7.71  | 5.49 | 7.71 | 5.28 | 6.13  | 5.81  | 6.13  | 5.81  |
| TWO<br>(Double Reduction)   | 30         | 0.63                 | 0.63  | 0.63  | 0.63  | 0.63  | -    | -    | -    | 0.63  | 0.63  | 0.63  | 0.63  |
|                             | 31         | 0.63                 | 0.63  | 1.00  | 0.90  | 1.16  | -    | -    | -    | 1.22  | 1.48  | 1.22  | 1.48  |
|                             | 32         | 1.00                 | 1.00  | 1.85  | 1.64  | 2.38  | -    | -    | -    | 2.38  | 2.85  | 2.38  | 2.85  |
|                             | 33         | 1.69                 | 1.69  | 3.49  | 3.12  | 4.70  | -    | -    | -    | 4.75  | 4.65  | 4.75  | 4.65  |
|                             | 34         | 3.49                 | 3.49  | 7.40  | 4.97  | 7.08  | -    | -    | -    | 7.93  | 7.93  | 7.93  | 7.93  |
|                             | 35         | 5.49                 | 5.49  | 10.46 | 8.98  | 13.95 | -    | -    | -    | 15.53 | 14.48 | 15.53 | 14.48 |
|                             | 36         | 8.45                 | 8.45  | 12.69 | 19.02 | 23.77 | -    | -    | -    | 25.36 | 25.89 | 25.36 | 25.89 |
|                             | 37         | 13.74                | 13.74 | 22.19 | 33.81 | 40.15 | -    | -    | -    | 44.91 | 43.85 | 44.91 | 43.85 |
|                             | 38         | 17.96                | 17.96 | 26.42 | 53.89 | 61.30 | -    | -    | -    | 68.68 | 64.46 | 68.68 | 64.46 |
| THREE<br>(Triple Reduction) | 30         | 0.74                 | 0.74  | 0.74  | 0.74  | 0.74  | -    | -    | -    | 0.74  | 0.74  | 0.74  | 0.74  |
|                             | 31         | 0.63                 | 0.63  | 1.30  | 0.90  | 1.16  | -    | -    | -    | 1.22  | 1.48  | 1.22  | 1.48  |
|                             | 32         | 1.00                 | 1.00  | 2.43  | 1.64  | 2.38  | -    | -    | -    | 2.38  | 2.85  | 2.38  | 2.85  |
|                             | 33         | 1.69                 | 1.69  | 4.62  | 3.12  | 4.70  | -    | -    | -    | 4.75  | 4.65  | 4.75  | 4.65  |
|                             | 34         | 3.49                 | 3.49  | 7.40  | 4.97  | 7.08  | -    | -    | -    | 7.93  | 7.93  | 7.93  | 7.93  |
|                             | 35         | 5.49                 | 5.49  | 13.21 | 8.98  | 13.95 | -    | -    | -    | 15.53 | 14.48 | 15.53 | 14.48 |
|                             | 36         | 8.45                 | 8.45  | 15.85 | 19.02 | 23.77 | -    | -    | -    | 25.36 | 25.89 | 25.36 | 25.89 |
|                             | 37         | 13.74                | 13.74 | 28.50 | 33.81 | 40.15 | -    | -    | -    | 44.91 | 43.85 | 44.91 | 43.85 |
|                             | 38         | 17.96                | 17.96 | 45.44 | 53.89 | 61.30 | -    | -    | -    | 68.68 | 64.46 | 68.68 | 64.46 |

\* refer to page illustrating mounting positions based on reduction stage(s) and gear frame to be checked or filled

### Combined Gear Units -

| Stages | Combined Gear Frame | Composition |        |      |           |        |      |
|--------|---------------------|-------------|--------|------|-----------|--------|------|
|        |                     | Primary     |        |      | Secondary |        |      |
|        |                     | Frame       | Stages | Type | Frame     | Stages | Type |
| FOUR   | 3254                | 32          | Two    | CbN  | 30        | Two    | CbN  |
|        | 3374                | 33          | Two    | CbN  | 30        | Two    | CbN  |
|        | 3484                | 34          | Two    | CbN  | 31        | Two    | CbN  |
|        | 3594                | 35          | Two    | CbN  | 31        | Two    | CbN  |
|        | 3604                | 36          | Two    | CbN  | 32        | Two    | CbN  |
|        | 3734                | 37          | Two    | CbN  | 32        | Two    | CbN  |
|        | 3844                | 38          | Two    | CbN  | 34        | Two    | CbN  |
| FIVE   | 3255                | 32          | Two    | CbN  | 30        | Three  | CbN  |
|        | 3375                | 33          | Two    | CbN  | 30        | Three  | CbN  |
|        | 3485                | 34          | Two    | CbN  | 31        | Three  | CbN  |
|        | 3595                | 35          | Two    | CbN  | 31        | Three  | CbN  |
|        | 3605                | 36          | Two    | CbN  | 32        | Three  | CbN  |
|        | 3735                | 37          | Two    | CbN  | 32        | Three  | CbN  |
|        | 3845                | 38          | Two    | CbN  | 34        | Three  | CbN  |
| SIX    | 3256                | 32          | Three  | CbN  | 30        | Three  | CbN  |
|        | 3376                | 33          | Three  | CbN  | 30        | Three  | CbN  |
|        | 3486                | 34          | Three  | CbN  | 31        | Three  | CbN  |
|        | 3596                | 35          | Three  | CbN  | 31        | Three  | CbN  |
|        | 3606                | 36          | Three  | CbN  | 32        | Three  | CbN  |
|        | 3736                | 37          | Three  | CbN  | 32        | Three  | CbN  |
|        | 3846                | 38          | Three  | CbN  | 34        | Three  | CbN  |

#### NOTE:

These consist of 2 CbN gear units assembled together. Each gear unit has a separate oil sump that is factory filled and requires monitoring before start-up and during operation. The table at left defines the gear size, and type for each CbN gear of a specific "combined" gear reducer.

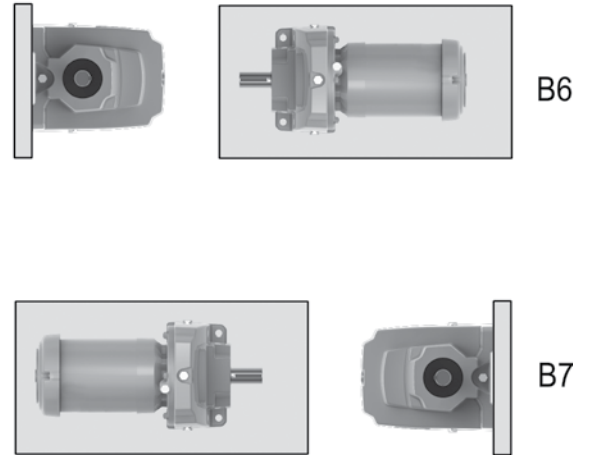
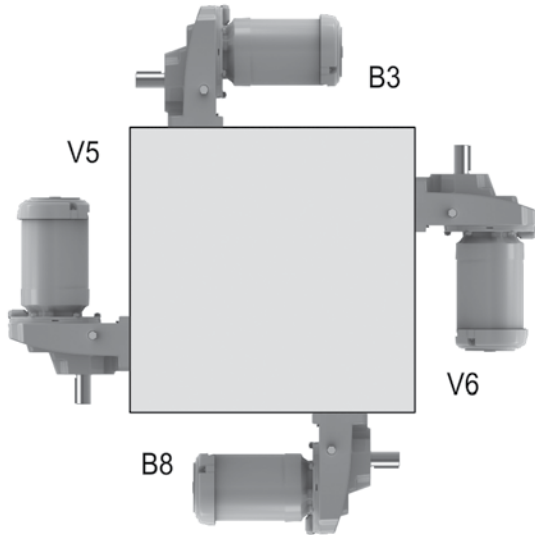
Refer to the table above for oil volume based on mounting position specified

Oil sumps of frames 36, 37, and 38 are equipped with a dipstick (with breather) for the purposes of oil level monitoring when a unit is not operating.

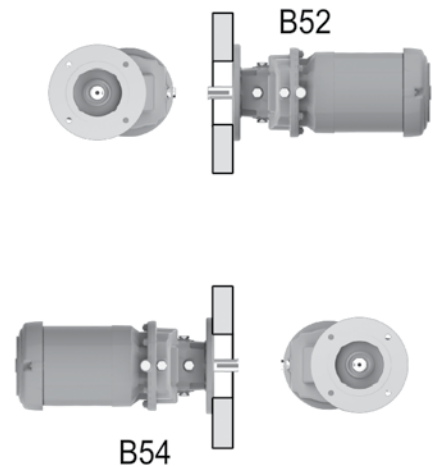
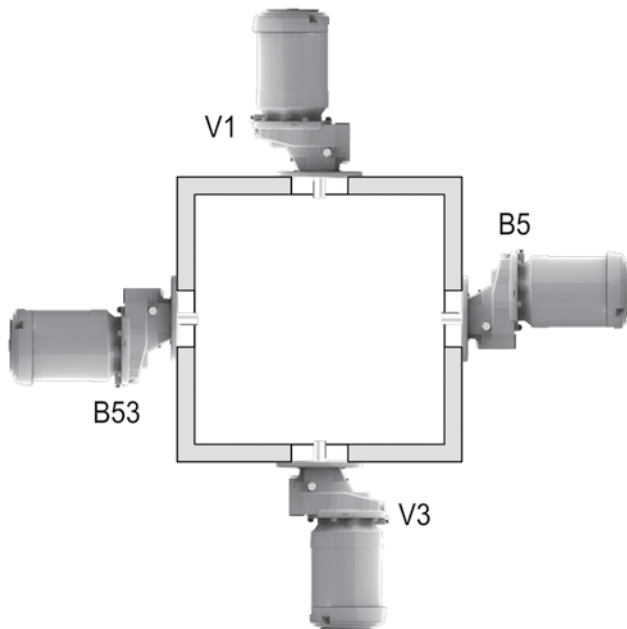
Oil sumps of frames 31 through 35 are equipped with an oil level plugs for the purposes of oil level monitoring when that unit is not operating .

## Single Reduction Mounting Positions Frames 31 Thru 35

### Foot Mounted (with/without flange)

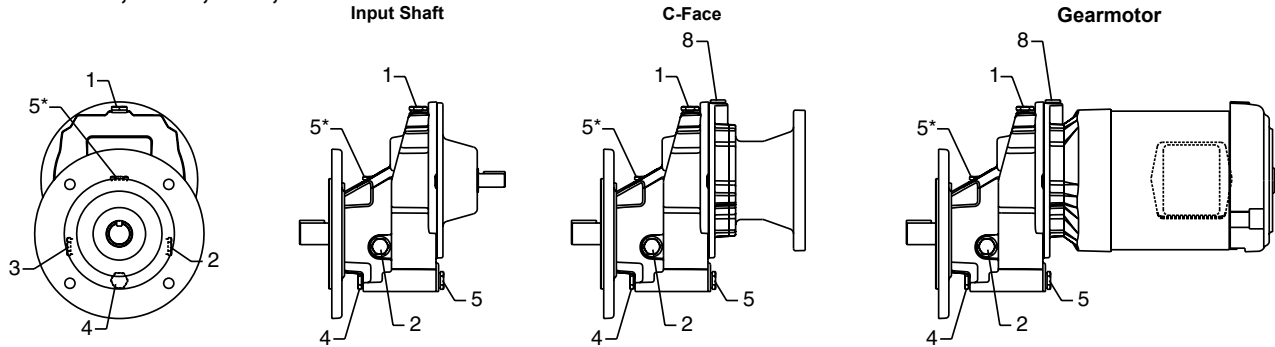


### Flange Mounted (Footless)



# Single Reduction Plug Location and Assignments Frames 31 Thru 35

## Foot Mount - S, SB14, SBS, SBD2

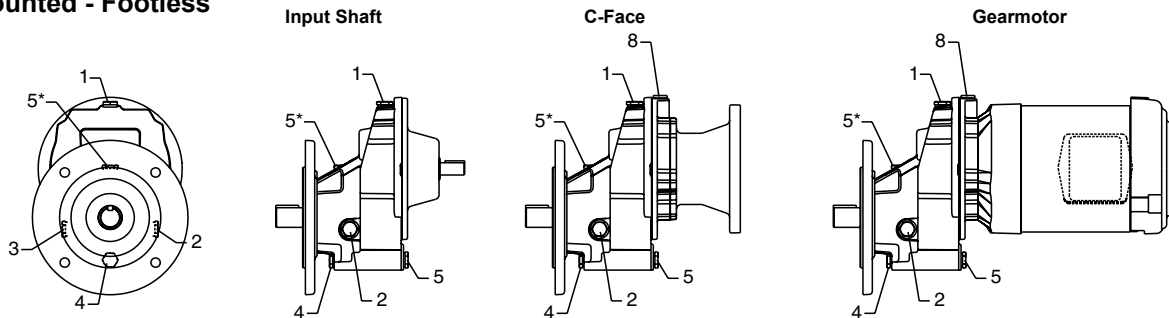


| Mounting Position | Plug Function | Type Unit   |        |           |
|-------------------|---------------|-------------|--------|-----------|
|                   |               | Input Shaft | C-Face | Gearmotor |
| B3                | Breather      | 1 or 6      | 8      | 8         |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 4           | 4      | 4         |
|                   | Filling       | 1           | 1      | 1         |
| B6                | Breather      | 3           | 3 or 8 | 3 or 8    |
|                   | Level         | 1 or 4      | 1 or 4 | 1 or 4    |
|                   | Drain         | 2           | 2      | 2         |
|                   | Filling       | 3           | 3      | 3         |
| B7                | Breather      | 2           | 2 or 8 | 2 or 8    |
|                   | Level         | 1 or 4      | 1 or 4 | 1 or 4    |
|                   | Drain         | 3           | 3      | 3         |
|                   | Filling       | 2           | 2      | 2         |

| Mounting Position | Plug Function | Type Unit   |        |           |
|-------------------|---------------|-------------|--------|-----------|
|                   |               | Input Shaft | C-Face | Gearmotor |
| B8                | Breather      | 4 or 5      | 4 or 5 | 4 or 5    |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 1           | 1      | 1         |
|                   | Filling       | 4 or 5      | 4 or 5 | 4 or 5    |
| V5                | Breather      | 5           | 5 or 8 | 5 or 8    |
|                   | Level         | 1           | 1      | 1         |
|                   | Drain         | 4           | 4      | 4         |
|                   | Filling       | 5           | 5      | 5         |
| V6                | Breather      | 4           | 4      | 4         |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 1           | 8      | 8         |
|                   | Filling       | 4           | 4      | 4         |

\* Frame 32 only

## Flange Mounted - Footless



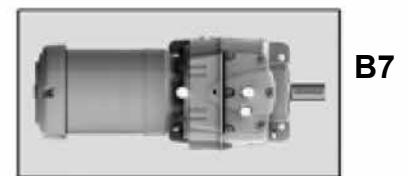
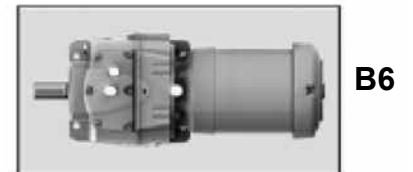
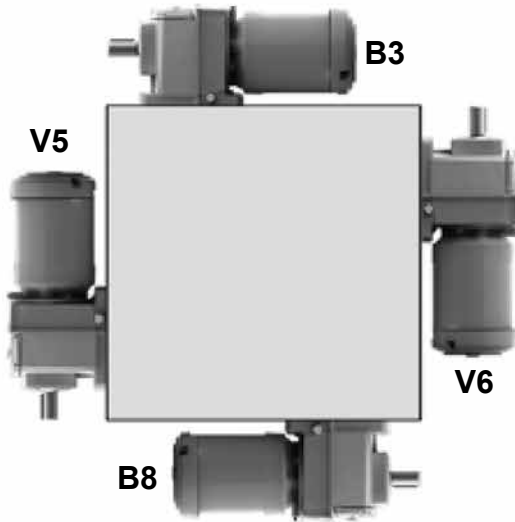
| Mounting Position | Plug Function | Type Unit   |        |           |
|-------------------|---------------|-------------|--------|-----------|
|                   |               | Input Shaft | C-Face | Gearmotor |
| B5                | Breather      | 1 or 6      | 8      | 8         |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 4           | 4      | 4         |
|                   | Filling       | 1           | 1 or 8 | 1 or 8    |
| B52               | Breather      | 3           | 3 or 8 | 3 or 8    |
|                   | Level         | 1 or 4      | 1 or 4 | 1 or 4    |
|                   | Drain         | 2           | 2      | 2         |
|                   | Filling       | 3           | 3      | 3         |
| B54               | Breather      | 2           | 2 or 8 | 2 or 8    |
|                   | Level         | 1 or 4      | 1 or 4 | 1 or 4    |
|                   | Drain         | 3           | 3      | 3         |
|                   | Filling       | 2           | 2      | 2         |

| Mounting Position | Plug Function | Type Unit   |        |           |
|-------------------|---------------|-------------|--------|-----------|
|                   |               | Input Shaft | C-Face | Gearmotor |
| B53               | Breather      | 4 or 5      | 4 or 5 | 4 or 5    |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 1           | 1      | 1         |
|                   | Filling       | 4 or 5      | 4 or 5 | 4 or 5    |
| V1                | Breather      | 5           | 5      | 5         |
|                   | Level         | 1           | 1      | 1         |
|                   | Drain         | 4           | 4      | 4         |
|                   | Filling       | 5           | 5 or 8 | 5 or 8    |
| V3                | Breather      | 4           | 4      | 4         |
|                   | Level         | 2 or 3      | 2 or 3 | 2 or 3    |
|                   | Drain         | 5           | 8      | 8         |
|                   | Filling       | 4           | 4      | 4         |

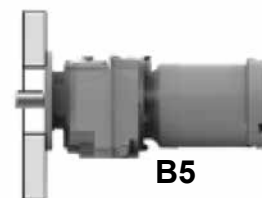
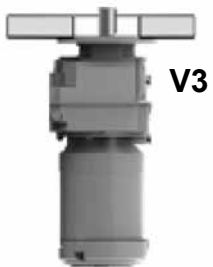
\* Frame 32 only

## Multiple Reduction Mounting Positions Frames 31 Thru 35

### Foot Mounted (with/without flange)

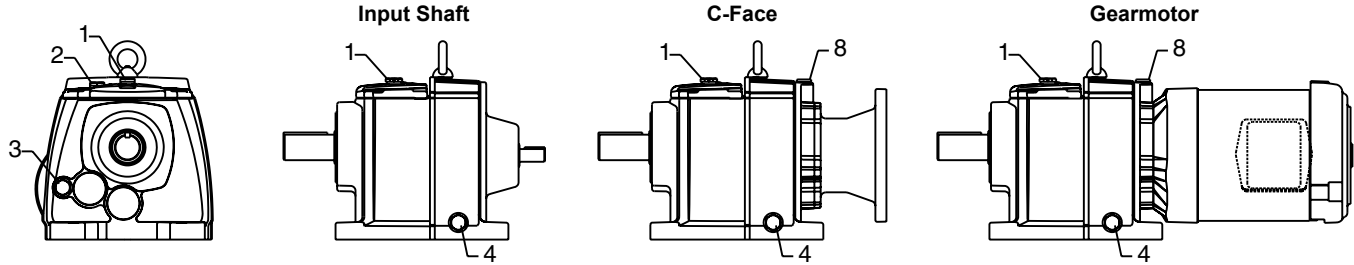


### Flange Mounted (Footless)



## Multiple Reduction Plug Locations and Assignments Frames 31 Thru 35

### Foot Mount

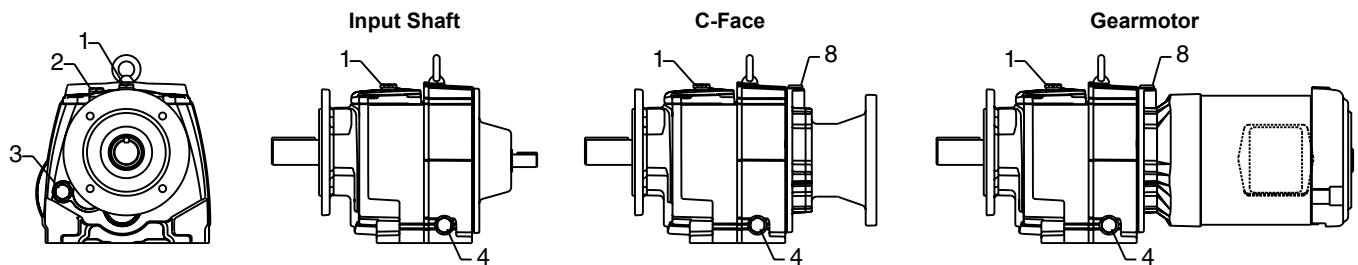


| Mounting Position | Plug Function | Type Unit   |           |           |
|-------------------|---------------|-------------|-----------|-----------|
|                   |               | Input Shaft | C-Face    | Gearmotor |
| B3                | Breather      | 1 or 2      | 1, 2 or 8 | 1, 2 or 8 |
|                   | Level         | 3           | 3         | 3         |
|                   | Drain         | 4           | 4         | 4         |
|                   | Filling       | 1 or 2      | 1 or 2    | 1 or 2    |
| B6                | Breather      | 3           | 3 or 8    | 3 or 8    |
|                   | Level         | **          | **        | **        |
|                   | Drain         | 4           | 4         | 4         |
|                   | Filling       | 3           | 3         | 3         |
| B7                | Breather      | 4           | 4 or 8    | 4 or 8    |
|                   | Level         | 1           | 1         | 1         |
|                   | Drain         | 3           | 3         | 3         |
|                   | Filling       | 4           | 4         | 4         |

| Mounting Position | Plug Function | Type Unit   |        |           |
|-------------------|---------------|-------------|--------|-----------|
|                   |               | Input Shaft | C-Face | Gearmotor |
| B8                | Breather      | 4           | 4 or 8 | 4 or 8    |
|                   | Level         | 3           | 3      | 3         |
|                   | Drain         | 1 or 2      | 1 or 2 | 1 or 2    |
|                   | Filling       | 4           | 4      | 4         |
| V5                | Breather      | 4           | 8      | 8         |
|                   | Level         | 4           | 4      | 4         |
|                   | Drain         | 3           | 3      | 3         |
|                   | Filling       | 4           | 8      | 8         |
| V6                | Breather      | 3           | 3      | 3         |
|                   | Level         | 1 or 2      | 1 or 2 | 1 or 2    |
|                   | Drain         | 4           | 8      | 8         |
|                   | Filling       | 3           | 3      | 3         |

\*\* Double Reduction (except size 34) = 1, Triple Reduction = 2

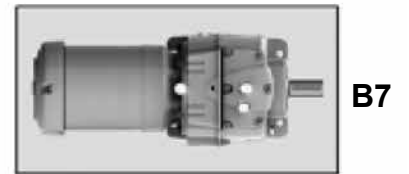
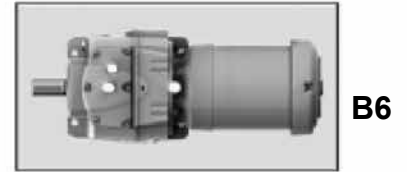
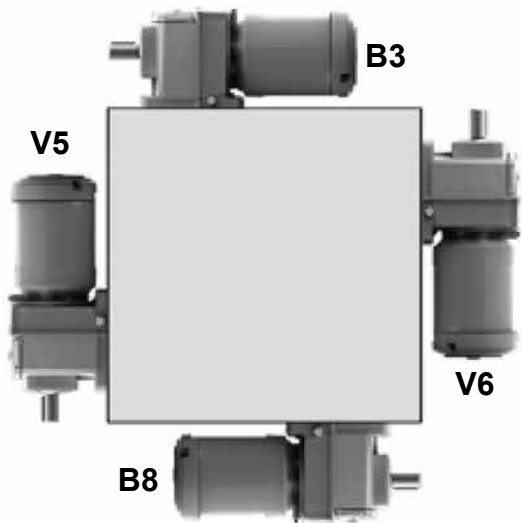
### Flange or Face Mount - Footless



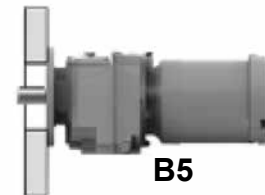
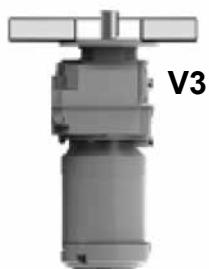
| Mounting Position | Plug Function | Type Unit   |           |           |
|-------------------|---------------|-------------|-----------|-----------|
|                   |               | Input Shaft | C-Face    | Gearmotor |
| B5                | Breather      | 1 or 2      | 1, 2 or 8 | 1, 2 or 8 |
|                   | Level         | 3           | 3         | 3         |
|                   | Drain         | 4           | 4         | 4         |
|                   | Filling       | 1 or 2      | 1 or 2    | 1 or 2    |
| V1                | Breather      | 4           | 8         | 8         |
|                   | Level         | 4           | 4         | 4         |
|                   | Drain         | 3           | 3         | 3         |
|                   | Filling       | 4           | 8         | 8         |
| V3                | Breather      | 3           | 3         | 3         |
|                   | Level         | 1 or 2      | 1 or 2    | 1 or 2    |
|                   | Drain         | 4           | 8         | 8         |
|                   | Filling       | 3           | 3         | 3         |

## Multiple Reduction Mounting Positions Frames 36 thru 38

### Foot Mounted (with/without flange)



### Flange Mounted

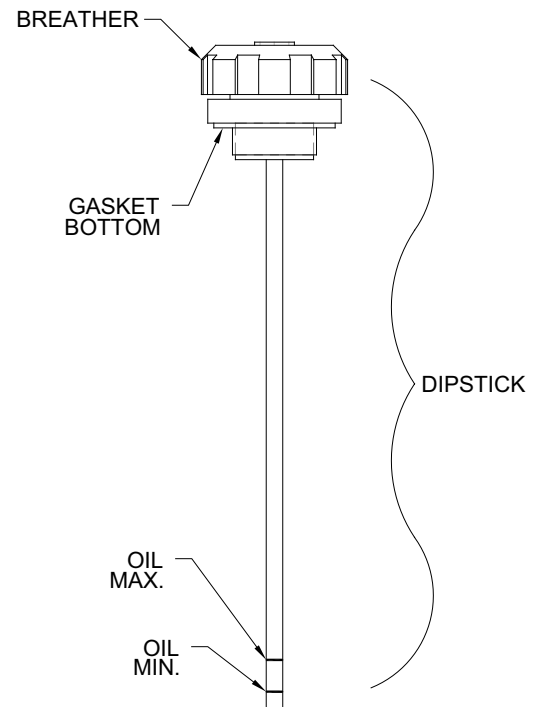




## Multiple Reduction Plug Locations and Assignments Frames 36 thru 38

### All Foot, Flange, and Face Mounted Units

| Mounting Position | Plug Function | Frame 36    |                      | Frame 37    |                      | Frame 38    |                      |
|-------------------|---------------|-------------|----------------------|-------------|----------------------|-------------|----------------------|
|                   |               | Input Shaft | C-face and Gearmotor | Input Shaft | C-face and Gearmotor | Input Shaft | C-face and Gearmotor |
| B3 and B5         | Breather      | 2           | 2                    | 2           | 2                    | 2           | 2                    |
|                   | Level **      | 2           | 2                    | 2           | 2                    | 2           | 2                    |
|                   | Drain         | 4           | 4                    | 7           | 7                    | 4           | 4                    |
|                   | Filling       | 2           | 2                    | 2           | 2                    | 1           | 1                    |
| B6                | Breather      | 6           | 6                    | 6           | 6                    | 12          | 12                   |
|                   | Level **      | 6           | 6                    | 6           | 6                    | 12          | 12                   |
|                   | Drain         | 10          | 10                   | 10          | 10                   | 4           | 4                    |
|                   | Filling       | 6           | 6                    | 6           | 6                    | 7           | 7                    |
| B7                | Breather      | 10          | 10                   | 10          | 10                   | 11          | 11                   |
|                   | Level **      | 10          | 10                   | 10          | 10                   | 11          | 11                   |
|                   | Drain         | 6           | 6                    | 6           | 6                    | 7           | 7                    |
|                   | Filling       | 10          | 10                   | 10          | 10                   | 4           | 4                    |
| B8                | Breather      | 9           | 9                    | 9           | 9                    | 9           | 9                    |
|                   | Level         | 3***        | 3***                 | ****        | ****                 | ****        | ****                 |
|                   | Drain         | 2           | 2                    | 2           | 2                    | 2           | 2                    |
|                   | Filling       | 4           | 4                    | 6           | 6                    | 9           | 9                    |
| V5 and V1         | Breather      | 5           | 5                    | 5           | 5                    | 13          | 13                   |
|                   | Level **      | 5           | 5                    | 5           | 5                    | 13          | 13                   |
|                   | Drain         | 3           | 3                    | 3           | 3                    | 14          | 14                   |
|                   | Filling       | 5           | 5                    | 5           | 5                    | 13          | 13                   |
| V6 and V3         | Breather      | 3**         | 3**                  | 3**         | 3**                  | 14          | 14                   |
|                   | Level         | 6*          | 6*                   | 3           | 3                    | 14          | 14                   |
|                   | Drain         | 5           | 8                    | 5           | 8                    | 13          | 13                   |
|                   | Filling       | 3           | 3                    | 3           | 3                    | 14          | 14                   |



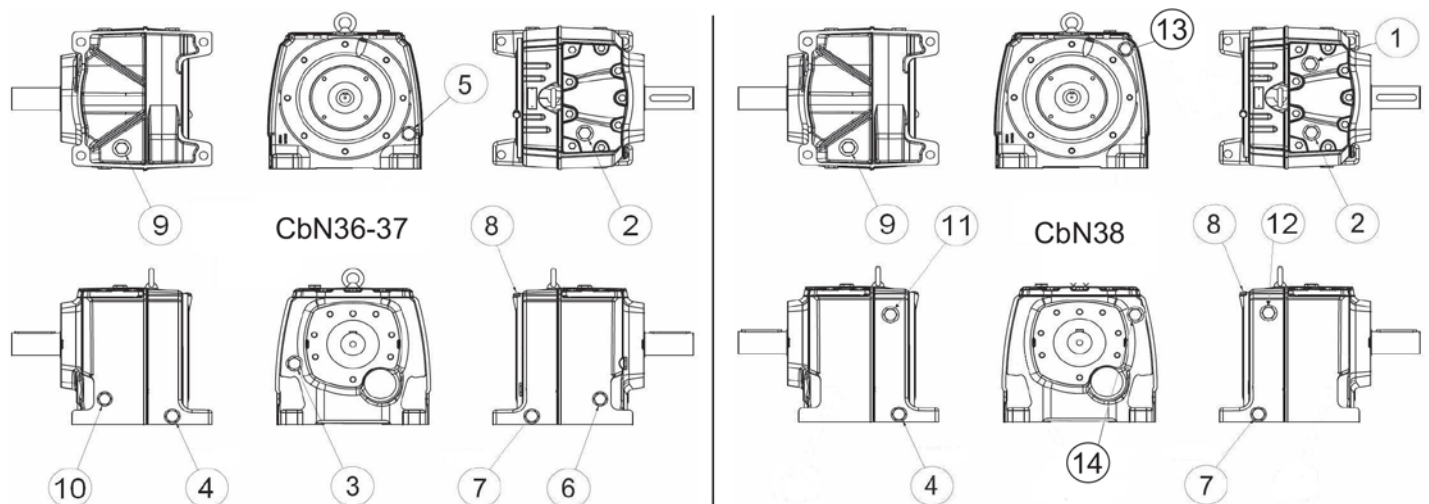
\* Alternative oil level indication plug for flanged mounted units

\*\* This location will have dipstick for monitoring oil level unless noted

\*\*\* Level plug positioned on 90 degree elbow fitting

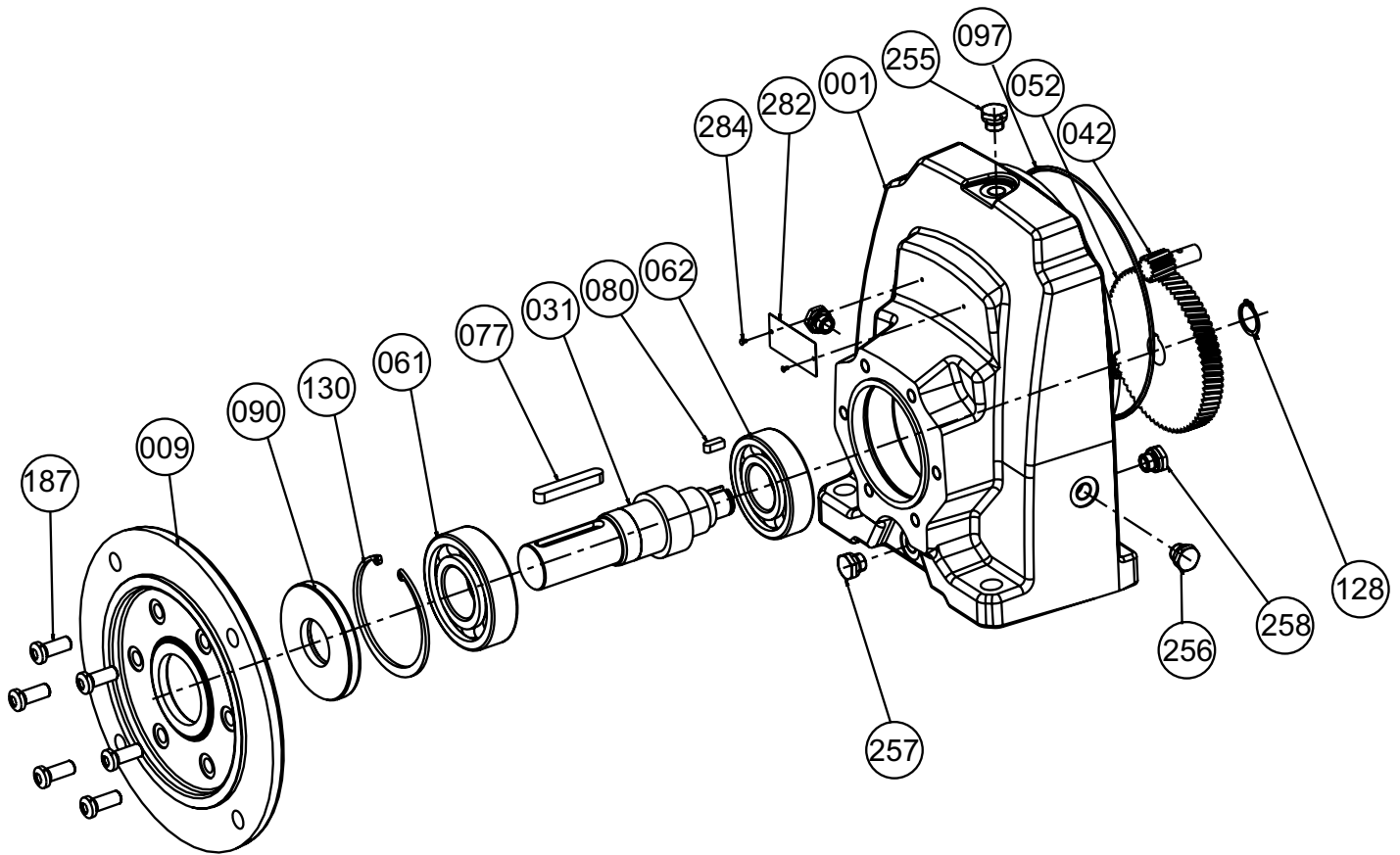
\*\*\*\* Sight tube supplied at position #2 for oil level indication

### Views



## Single Reduction Parts Lists

### CbN 30 - 35



| Gear Frame | Item Description by Location |      |                           |
|------------|------------------------------|------|---------------------------|
|            | Bearings                     |      | Seal (mm)                 |
|            | 061                          | 062  | 090                       |
| 30         | 6205 ZZ                      | 6005 | 25 x 52 x 7 DL, nitrile   |
| 31         | 6205 1RS                     | 6304 | 25 x 52 x 7 DL, nitrile   |
| 32         | 6206 RS                      | 6305 | 30 x 62 x 7 DL, nitrile   |
| 33         | 6308 RS                      | 6307 | 40 x 90 x 8 DL, nitrile   |
| 34         | 6309 ZZ BHT C3               | 6308 | 45 x 100 x 8 DL, nitrile  |
| 35         | 6310 RS                      | 6309 | 50 x 110 x 12 DL, nitrile |

## Single Reduction Parts Lists

### CbN 30 - 35

#### CbN 30 - 35 (Quantity Per Unit)

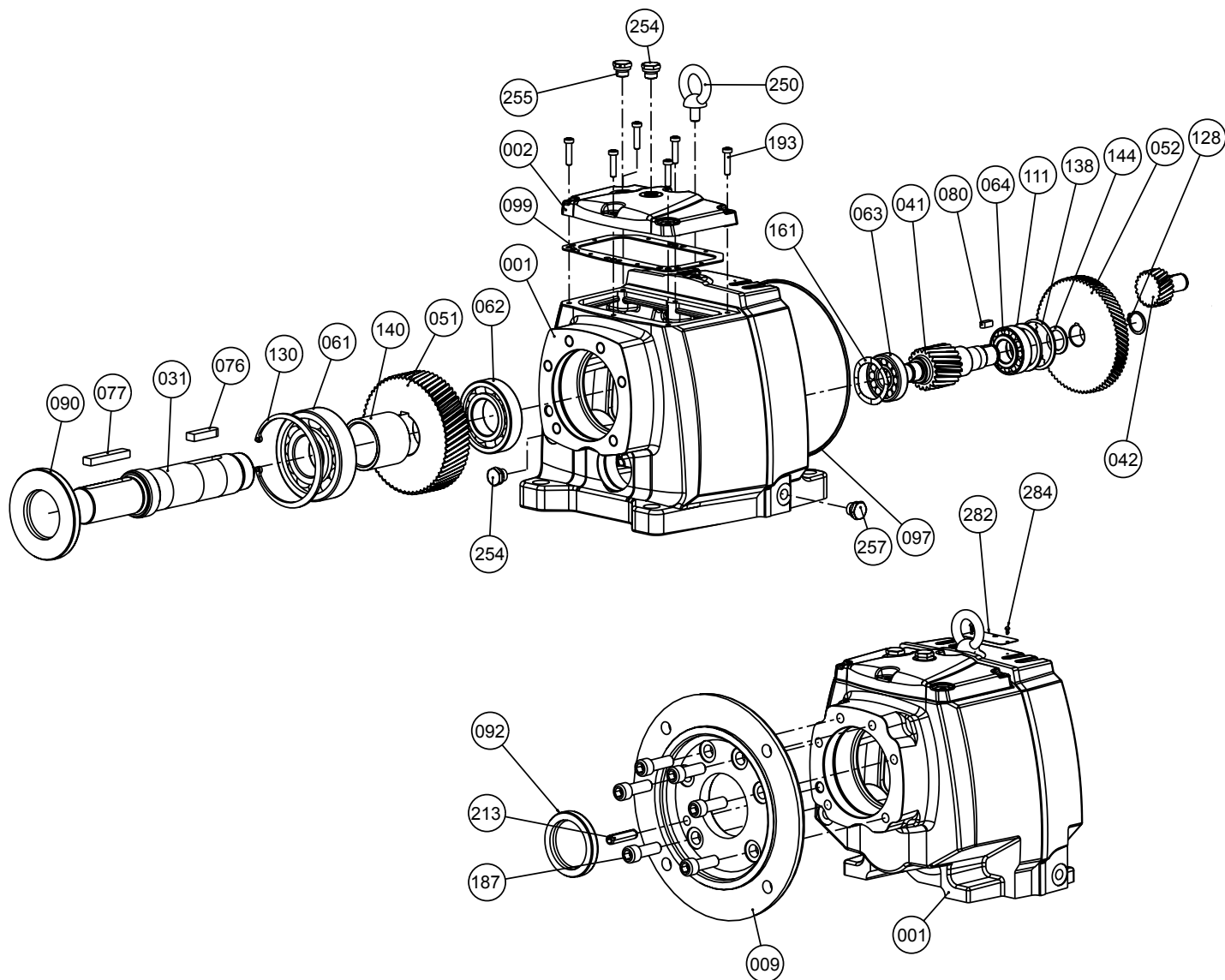
| Rep | Description                    | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|--------------------------------|----|----|----|----|----|----|
| 001 | Housing                        | 1  | 1  | 1  | 1  | 1  | 1  |
| 009 | Output Flange Ring             | 1  | 1  | 1  | 1  | 1  | 1  |
| 031 | Output Shaft                   | 1  | 1  | 1  | 1  | 1  | 1  |
| 042 | Pinion                         | 1  | 1  | 1  | 1  | 1  | 1  |
| 052 | Gear                           | 1  | 1  | 1  | 1  | 1  | 1  |
| 061 | Bearing Front                  | 1  | 1  | 1  | 1  | 1  | 1  |
| 062 | Bearing Back                   | 1  | 1  | 1  | 1  | 1  | 1  |
| 077 | Output Shaft Key               | 1  | 1  | 1  | 1  | 1  | 1  |
| 080 | Gear Key                       | 1  | 1  | 1  | 1  | 1  | 1  |
| 090 | Oil Seal                       | 1  | 1  | 1  | 1  | 1  | 1  |
| 097 | Input "O" Ring Seal (optional) | 1  | 1  | 1  | 1  | 1  | 1  |
| 127 | Bearing Snap Ring*             | 1  | 0  | 0  | 0  | 0  | 0  |
| 128 | Gear Snap Ring                 | 0  | 1  | 1  | 1  | 1  | 1  |

| Rep | Description           | 30 | 31  | 32  | 33 | 34 | 35 |
|-----|-----------------------|----|-----|-----|----|----|----|
| 130 | Bearing Snap Ring     | 1  | 1   | 1   | 1  | 1  | 1  |
| 140 | Gear Spacer*          | 0  | 1** | 1** | 0  | 0  | 0  |
| 175 | Screw for Face-Plate* | 4  | 0   | 0   | 0  | 0  | 0  |
| 185 | Washer for Gear*      | 1  | 0   | 0   | 0  | 0  | 0  |
| 186 | Screw Washer*         | 1  | 0   | 0   | 0  | 0  | 0  |
| 187 | Bolt                  | 4  | 4   | 4   | 6  | 6  | 6  |
| 213 | Flange Dowel Pin*     | 0  | 1   | 1   | 1  | 1  | 1  |
| 255 | Breather Plug         | 0  | 1   | 1   | 1  | 1  | 1  |
| 256 | Level Plug            | 0  | 2   | 2   | 2  | 2  | 2  |
| 257 | Drain Plug            | 0  | 1   | 1   | 1  | 1  | 1  |
| 258 | Drain Plug            | 0  | 1   | 1   | 1  | 1  | 1  |
| 282 | Nameplate             | 1  | 1   | 1   | 1  | 1  | 1  |
| 284 | Nameplate Pin         | 0  | 2   | 2   | 2  | 2  | 2  |

\* Not illustrated.

\*\* Design revision 4/03.

## Double Reduction Parts List CbN 30 - 35



### Typical Maintenance Items - Bearings and Seals (Double Reduction)

| Gear Frame | Item Description by Location |      |            |       |                           |
|------------|------------------------------|------|------------|-------|---------------------------|
|            | Bearings                     |      |            |       | Seal (mm)                 |
|            | 061                          | 062  | 063        | 064   | 090                       |
| 30         | 6205                         | 6202 | 6300       | 6301  | 25 x 52 x 7 DL, nitrile   |
| 31         | 6206 ZZ BHT C3               | 6205 | NJ 202 ECP | 6202  | 35 x 62 x 6 DL, nitrile   |
| 32         | 6207 ZZ BHT C3               | 6206 | 60203      | 30203 | 42 x 72 x 8 DL, nitrile   |
| 33         | 6309 ZZ BHT C3               | 6208 | 30304      | 30205 | 52 x 100 x 10 DL, nitrile |
| 34         | 6311 ZZ BHT C3               | 6310 | 30306      | 30306 | 62 x 120 x 12 DL, nitrile |
| 35         | 6313 ZZ BHT C3               | 6310 | 33207      | 33207 | 72 x 140 x 12 DL, nitrile |

## Double Reduction Parts List

### CbN 30 - 35

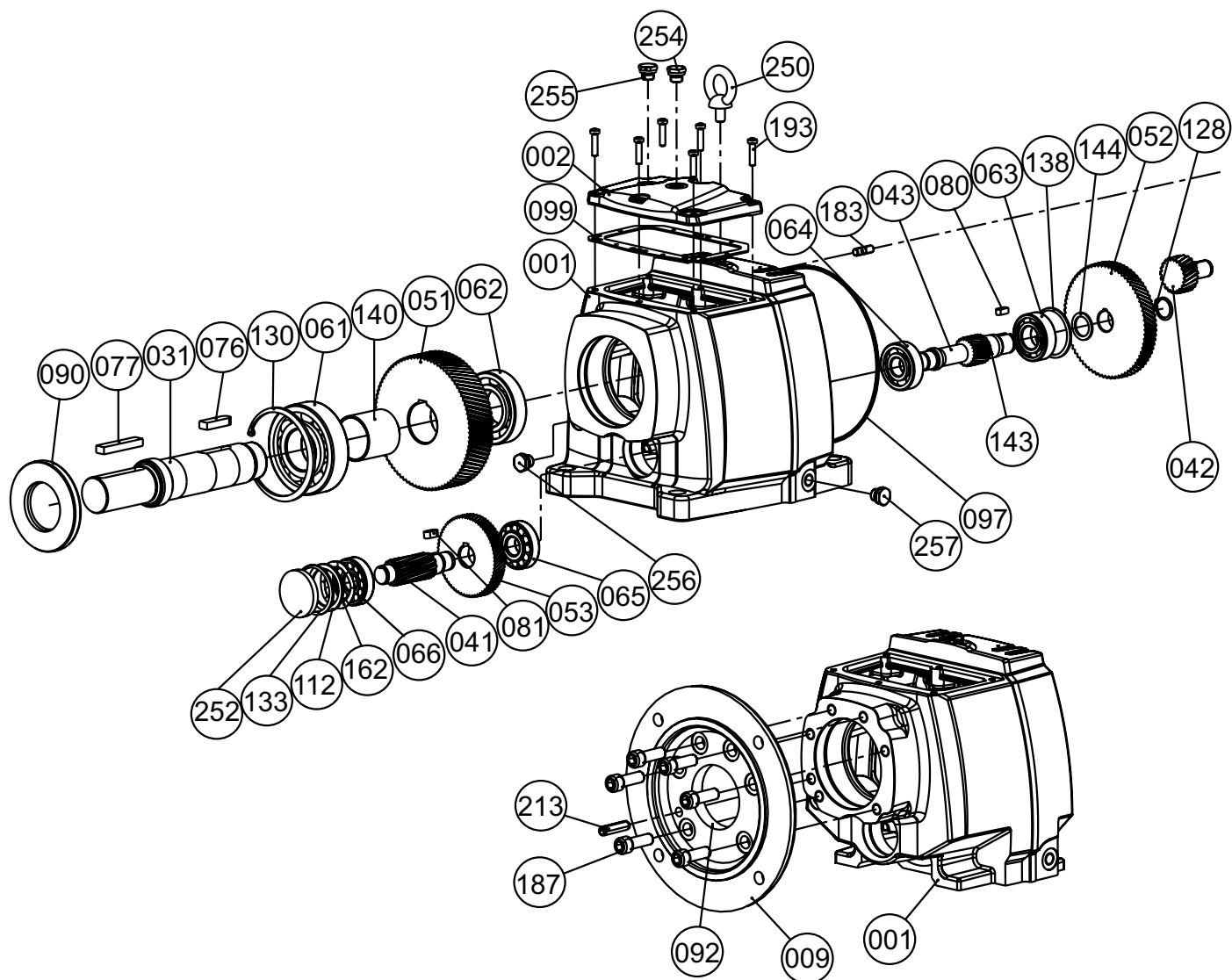
#### CbN 30 - 35 (Quantity Per Unit)

| Rep | Description            | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|------------------------|----|----|----|----|----|----|
| 001 | Housing                | 1  | 1  | 1  | 1  | 1  | 1  |
| 002 | Cover                  | 1  | 1  | 1  | 1  | 1  | 1  |
| 009 | Output Flange Ring     | 1  | 1  | 1  | 1  | 1  | 1  |
| 031 | Output Shaft           | 1  | 1  | 1  | 1  | 1  | 1  |
| 041 | Pinion Axis 3          | 1  | 1  | 1  | 1  | 1  | 1  |
| 042 | Pinion (primary)       | 1  | 1  | 1  | 1  | 1  | 1  |
| 043 | Pinion Axis 2          | 0  | 0  | 0  | 0  | 0  | 0  |
| 051 | Gear Axis 4            | 1  | 1  | 1  | 1  | 1  | 1  |
| 052 | Gear Axis 2            | 1  | 1  | 1  | 1  | 1  | 1  |
| 053 | Gear Axis 3            | 0  | 0  | 0  | 0  | 0  | 0  |
| 061 | Bearing Front Axis 4   | 1  | 1  | 1  | 1  | 1  | 1  |
| 062 | Bearing Back Axis 4    | 1  | 1  | 1  | 1  | 1  | 1  |
| 063 | Bearing Front Axis 2   | 1  | 1  | 1  | 1  | 1  | 1  |
| 064 | Bearing Back Axis 2    | 1  | 1  | 1  | 1  | 1  | 1  |
| 065 | Bearing Front Axis 3   | 0  | 0  | 0  | 0  | 0  | 0  |
| 066 | Bearing Back Axis 3    | 0  | 0  | 0  | 0  | 0  | 0  |
| 076 | Gear Key               | 1  | 1  | 1  | 1  | 1  | 1  |
| 077 | Output Shaft Key       | 1  | 1  | 1  | 1  | 1  | 1  |
| 080 | Gear Key               | 1  | 1  | 1  | 1  | 1  | 1  |
| 081 | Gear Key Axis 3        | 0  | 0  | 0  | 0  | 0  | 0  |
| 090 | Oil Seal               | 1  | 1  | 1  | 1  | 1  | 1  |
| 092 | Flange Oil Seal (Opt.) | 0  | 1  | 1  | 1  | 1  | 1  |
| 097 | Input O-Ring (Opt.)    | 1  | 1  | 1  | 1  | 1  | 1  |
| 099 | Cover Gasket           | 1  | 1  | 1  | 1  | 1  | 1  |
| 111 | Bearing Spacer Axis 2* | 0  | 0  | 0  | 1  | 0  | 0  |
| 112 | Bearing Spacer Axis 3  | 0  | 0  | 0  | 0  | 0  | 0  |
| 114 | Bearing Spacer Axis 3* | 0  | 0  | 0  | 0  | 0  | 0  |
| 115 | Bearing Spacer Axis 2* | 0  | 0  | 1  | 0  | 1  | 1  |
| 127 | Bearing Snap Ring *    | 1  | 0  | 0  | 0  | 0  | 0  |

| Rep | Description            | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|------------------------|----|----|----|----|----|----|
| 128 | Gear Snap Ring         | 0  | 1  | 1  | 1  | 1  | 1  |
| 130 | Bearing Snap Ring      | 1  | 1  | 1  | 1  | 1  | 1  |
| 132 | Bearing Snap Ring *    | 0  | 0  | 1  | 0  | 1  | 1  |
| 133 | Bearing Snap Ring      | 0  | 0  | 0  | 0  | 0  | 0  |
| 134 | Bearing Snap Ring *    | 0  | 0  | 0  | 0  | 0  | 0  |
| 138 | Bearing Snap Ring      | 1  | 1  | 1  | 1  | 0  | 0  |
| 140 | Gear Spacer Axis 4     | 0  | 1  | 1  | 1  | 1  | 1  |
| 143 | Bearing Spacer         | 0  | 0  | 0  | 0  | 0  | 0  |
| 144 | Gear Spacer (primary)  | 0  | 1  | 1  | 1  | 1  | 1  |
| 161 | Flexible Wavy Washer * | 0  | 0  | 0  | 1  | 1  | 1  |
| 162 | Flexible Wavy Washer   | 0  | 0  | 0  | 0  | 0  | 0  |
| 163 | Flexible Wavy Washer * | 0  | 0  | 0  | 0  | 0  | 0  |
| 164 | Flexible Wavy Washer * | 0  | 0  | 1  | 0  | 0  | 0  |
| 175 | Screw For Face Plate * | 4  | 0  | 0  | 0  | 0  | 0  |
| 183 | Input Cover Stud       | 0  | 4  | 5  | 6  | 4  | 8  |
| 185 | Washer To Gear *       | 1  | 0  | 0  | 0  | 0  | 0  |
| 186 | Screw Washer *         | 1  | 0  | 0  | 0  | 0  | 0  |
| 187 | Fixing Screws          | 4  | 4  | 6  | 6  | 6  | 6  |
| 193 | Cover Fixing Screw     | 4  | 4  | 6  | 6  | 8  | 8  |
| 213 | Flange Dowel Pin       | 0  | 1  | 1  | 1  | 1  | 1  |
| 250 | Lifting Eye            | 0  | 0  | 1  | 1  | 1  | 1  |
| 251 | Plug *                 | 0  | 0  | 1  | 0  | 1  | 1  |
| 252 | Gear Case Plug         | 0  | 0  | 0  | 0  | 0  | 0  |
| 254 | Drain Plug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 255 | Breather Plug          | 0  | 1  | 1  | 1  | 1  | 1  |
| 256 | Level Plug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 257 | Drain PLug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 282 | Nameplate              | 1  | 1  | 1  | 1  | 1  | 1  |

\* Not Illustrated

## Triple Reduction Parts List CbN 30 - 35



### Typical Maintenance Items - Bearings and Seals (Triple Reduction)

| Gear Frame | Item Description by Location |      |      |      |       |       |                           |
|------------|------------------------------|------|------|------|-------|-------|---------------------------|
|            | Bearings                     |      |      |      |       |       | Seal (mm)                 |
|            | 061                          | 062  | 063  | 064  | 065   | 066   | 090                       |
| 30         | 6205                         | 6202 | 6201 | 6201 | 6300  | 6300  | 25 x 52 x 7 DL, nitrile   |
| 31         | 6206 ZZ BHT C3               | 6205 | 6201 | 6202 | 6202  | 6202  | 35 x 62 x 6 DL, nitrile   |
| 32         | 6207 ZZ BHT C3               | 6206 | 6203 | 6203 | 30203 | 30203 | 42 x 72 x 8 DL, nitrile   |
| 33         | 6309 ZZ BHT C3               | 6208 | 6304 | 6205 | 30304 | 30304 | 52 x 100 x 10 DL, nitrile |
| 34         | 6311 ZZ BHT C3               | 6310 | 6306 | 6306 | 30305 | 30305 | 62 x 120 x 12 DL, nitrile |
| 35         | 6313 ZZ BHT C3               | 6310 | 6306 | 6207 | 32207 | 32207 | 72 x 140 x 12 DL, nitrile |

DL = Double lipped.

## Triple Reduction Parts List

### CbN 30 - 35

#### CbN 30 - 35 (Quantity Per Unit)

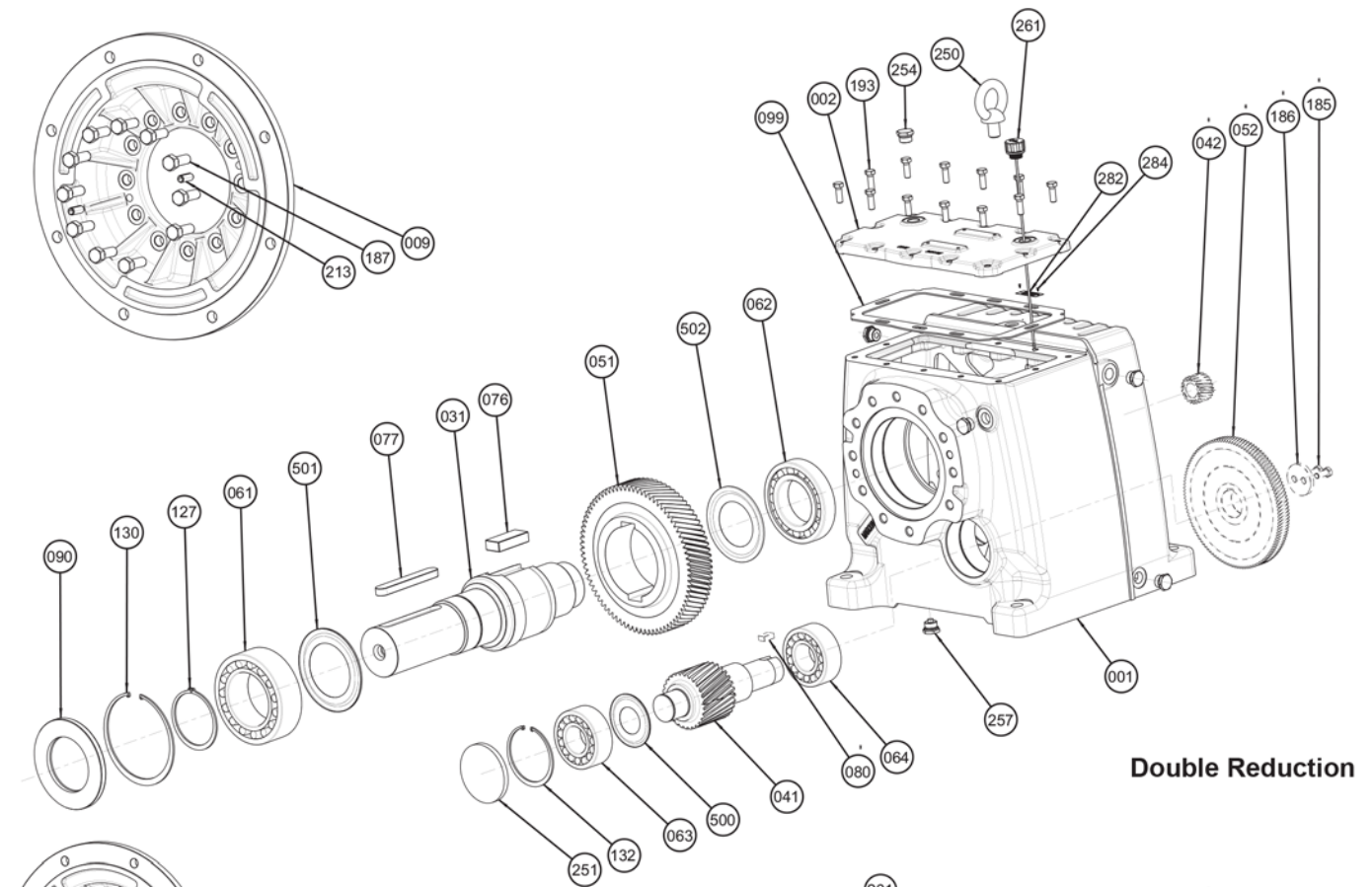
| Rep | Description            | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|------------------------|----|----|----|----|----|----|
| 001 | Housing                | 1  | 1  | 1  | 1  | 1  | 1  |
| 002 | Cover                  | 1  | 1  | 1  | 1  | 1  | 1  |
| 009 | Output Flange Ring     | 1  | 1  | 1  | 1  | 1  | 1  |
| 031 | Output Shaft           | 1  | 1  | 1  | 1  | 1  | 1  |
| 041 | Pinion Axis 3          | 1  | 1  | 1  | 1  | 1  | 1  |
| 042 | Pinion (primary)       | 1  | 1  | 1  | 1  | 1  | 1  |
| 043 | Pinion Axis 2          | 1  | 1  | 1  | 1  | 1  | 1  |
| 051 | Gear Axis 4            | 1  | 1  | 1  | 1  | 1  | 1  |
| 052 | Gear Axis 2            | 1  | 1  | 1  | 1  | 1  | 1  |
| 053 | Gear Axis 3            | 1  | 1  | 1  | 1  | 1  | 1  |
| 061 | Bearing Front Axis 4   | 1  | 1  | 1  | 1  | 1  | 1  |
| 062 | Bearing Back Axis 4    | 1  | 1  | 1  | 1  | 1  | 1  |
| 063 | Bearing Front Axis 2   | 1  | 1  | 1  | 1  | 1  | 1  |
| 064 | Bearing Back Axis 2    | 1  | 1  | 1  | 1  | 1  | 1  |
| 065 | Bearing Front Axis 3   | 1  | 1  | 1  | 1  | 1  | 1  |
| 066 | Bearing Back Axis 3    | 1  | 1  | 1  | 1  | 1  | 1  |
| 076 | Gear Key               | 1  | 1  | 1  | 1  | 1  | 1  |
| 077 | Output Shaft Key       | 1  | 1  | 1  | 1  | 1  | 1  |
| 080 | Gear Key               | 1  | 1  | 1  | 1  | 1  | 1  |
| 081 | Gear Key Axis 3        | 1  | 1  | 1  | 1  | 1  | 1  |
| 090 | Oil Seal               | 1  | 1  | 1  | 1  | 1  | 1  |
| 092 | Flange Oil Seal (Opt.) | 0  | 1  | 1  | 1  | 1  | 1  |
| 097 | Input O-Ring (Opt.)    | 1  | 1  | 1  | 1  | 1  | 1  |
| 099 | Cover Gasket           | 1  | 1  | 1  | 1  | 1  | 1  |
| 111 | Bearing Spacer Axis 2* | 0  | 0  | 0  | 1  | 0  | 0  |
| 112 | Bearing Spacer Axis 3  | 0  | 0  | 0  | 1  | 1  | 1  |
| 114 | Bearing Spacer Axis 3* | 0  | 1  | 1  | 0  | 0  | 0  |
| 115 | Bearing Spacer Axis 2* | 0  | 0  | 0  | 0  | 0  | 0  |
| 127 | Bearing Snap Ring *    | 1  | 0  | 0  | 0  | 0  | 0  |

| Rep | Description            | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|------------------------|----|----|----|----|----|----|
| 128 | Gear Snap Ring         | 0  | 1  | 1  | 1  | 1  | 1  |
| 130 | Bearing Snap Ring      | 1  | 1  | 1  | 1  | 1  | 1  |
| 132 | Bearing Snap Ring *    | 0  | 0  | 1  | 0  | 1  | 1  |
| 133 | Bearing Snap Ring      | 0  | 1  | 1  | 1  | 1  | 1  |
| 134 | Bearing Snap Ring *    | 1  | 0  | 0  | 0  | 0  | 0  |
| 138 | Bearing Snap Ring      | 1  | 1  | 1  | 1  | 0  | 0  |
| 140 | Gear Spacer Axis 4     | 0  | 1  | 1  | 1  | 1  | 1  |
| 143 | Bearing Spacer         | 0  | 0  | 0  | 1  | 0  | 0  |
| 144 | Gear Spacer (primary)  | 0  | 1  | 1  | 1  | 1  | 1  |
| 161 | Flexible Wavy Washer * | 0  | 0  | 0  | 1  | 0  | 0  |
| 162 | Flexible Wavy Washer   | 0  | 0  | 0  | 1  | 1  | 1  |
| 163 | Flexible Wavy Washer * | 0  | 0  | 1  | 0  | 0  | 0  |
| 164 | Flexible Wavy Washer * | 0  | 0  | 0  | 0  | 0  | 0  |
| 175 | Screw For Face Plate * | 4  | 0  | 0  | 0  | 0  | 0  |
| 183 | Input Cover Stud       | 0  | 4  | 5  | 6  | 4  | 8  |
| 185 | Washer To Gear *       | 1  | 0  | 0  | 0  | 0  | 0  |
| 186 | Screw Washer *         | 1  | 0  | 0  | 0  | 0  | 0  |
| 187 | Fixing Screws          | 4  | 4  | 6  | 6  | 6  | 6  |
| 193 | Cover Fixing Screw     | 4  | 4  | 6  | 6  | 8  | 8  |
| 213 | Flange Dowel Pin       | 0  | 1  | 1  | 1  | 1  | 1  |
| 250 | Lifting Eye            | 0  | 0  | 1  | 1  | 1  | 1  |
| 251 | Plug *                 | 0  | 0  | 1  | 0  | 1  | 1  |
| 252 | Gear Case Plug         | 0  | 1  | 1  | 1  | 1  | 1  |
| 254 | Drain Plug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 255 | Breather Plug          | 0  | 1  | 1  | 1  | 1  | 1  |
| 256 | Level Plug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 257 | Drain PLug             | 0  | 1  | 1  | 1  | 1  | 1  |
| 282 | Nameplate              | 1  | 1  | 1  | 1  | 1  | 1  |

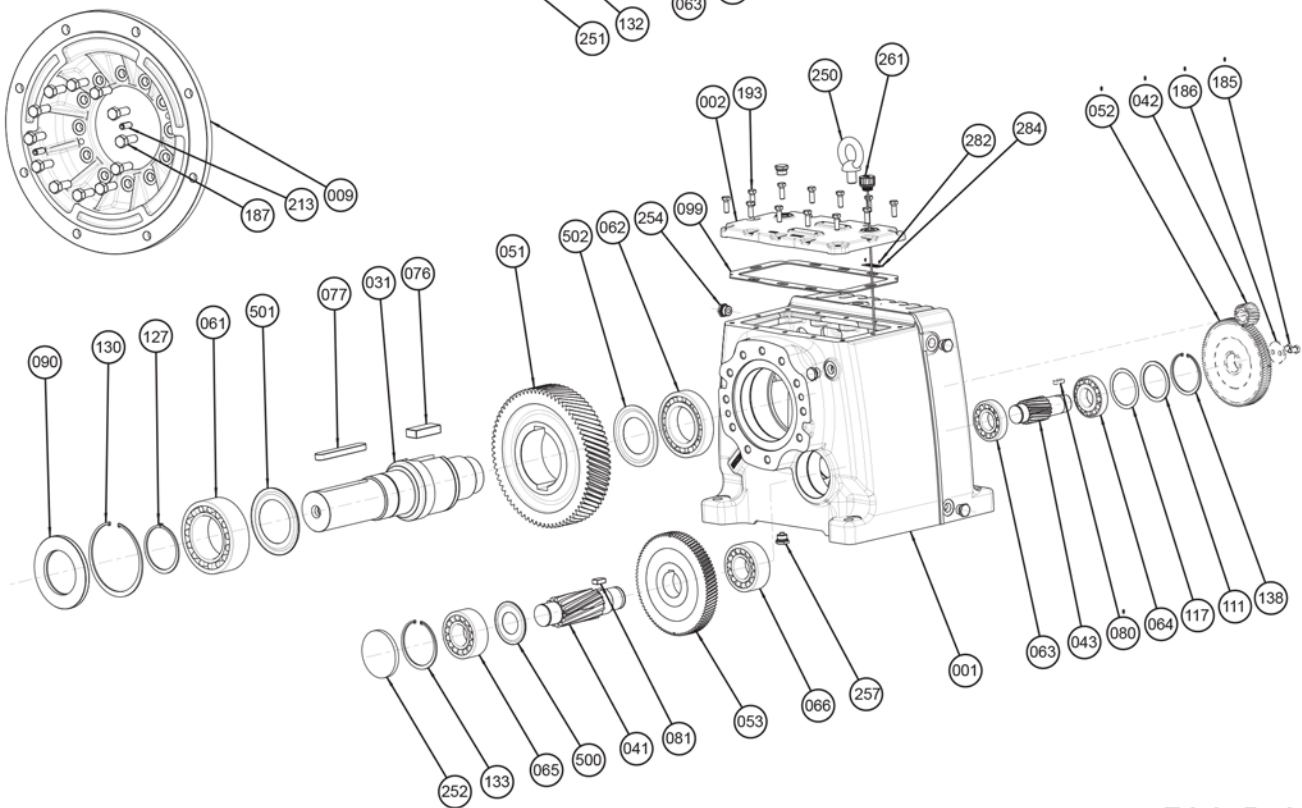
\* Not Illustrated



# Multiple Reduction Parts List CbN 36 - 38



**Double Reduction**



**Triple Reduction**



## Multiple Reduction Parts List

### CbN 36 - 38

#### CbN 36 to 38 (Quantity Per Unit)

| Item # | Description           | Double Reduction |    |    | Triple Reduction |    |    |
|--------|-----------------------|------------------|----|----|------------------|----|----|
|        |                       | 36               | 37 | 38 | 36               | 37 | 38 |
| 001    | Housing               | 1                | 1  | 1  | 1                | 1  | 1  |
| 002    | Cover                 | 1                | 1  | 1  | 1                | 1  | 1  |
| 009    | Output Flange Ring    | 1                | 1  | 1  | 1                | 1  | 1  |
| 031    | Output Shaft          | 1                | 1  | 1  | 1                | 1  | 1  |
| 041    | Pinion Axis 3         | 0                | 0  | 0  | 1                | 1  | 1  |
| 042    | Pinion Axis 1         | 1                | 1  | 1  | 1                | 1  | 1  |
| 043    | Pinion Axis 2         | 0                | 0  | 0  | 1                | 1  | 1  |
| 051    | Gear Axis 4           | 1                | 1  | 1  | 1                | 1  | 1  |
| 052    | Gear Axis 2           | 1                | 1  | 1  | 1                | 1  | 1  |
| 053    | Gear Axis 3           | 0                | 0  | 0  | 1                | 1  | 1  |
| 061    | Bearing Front Axis 4  | 1                | 1  | 1  | 1                | 1  | 1  |
| 062    | Bearing Back Axis 4   | 1                | 1  | 1  | 1                | 1  | 1  |
| 063    | Bearing Front Axis 2  | 1                | 1  | 1  | 1                | 1  | 1  |
| 064    | Bearing Back Axis 2   | 1                | 1  | 1  | 1                | 1  | 1  |
| 065    | Bearing Front Axis 3  | 0                | 0  | 0  | 1                | 1  | 1  |
| 066    | Bearing back Axis 3   | 0                | 0  | 0  | 1                | 1  | 1  |
| 076    | Gear Key              | 1                | 1  | 1  | 1                | 1  | 1  |
| 077    | Output Shaft Key      | 1                | 1  | 1  | 1                | 1  | 1  |
| 080    | Gear Key              | 1                | 1  | 1  | 1                | 1  | 1  |
| 081    | Gear Key Axis 3       | 0                | 0  | 0  | 1                | 1  | 1  |
| 090    | Oil seal              | 1                | 1  | 1  | 1                | 1  | 1  |
| 099    | Cover gasket          | 1                | 1  | 1  | 1                | 1  | 1  |
| 111    | Bearing Spacer Axis 2 | 0                | 0  | 0  | 1                | 0  | 1  |
| 117    | Shims                 | 0                | 0  | 0  | 0                | 0  | 1  |
| 119    | Bearing Spacer Axis 2 | 0                | 0  | 0  | 0                | 1  | 1  |

| Item # | Description             | Double Reduction |    |    | Triple Reduction |    |    |
|--------|-------------------------|------------------|----|----|------------------|----|----|
|        |                         | 36               | 37 | 38 | 36               | 37 | 38 |
| 127    | Bearing snap ring       | 0                | 1  | 1  | 0                | 1  | 1  |
| 128    | Washer Gear Axis 2      | 0                | 0  | 0  | 1                | 0  | 0  |
| 130    | Bearing Snap Ring       | 1                | 1  | 1  | 1                | 1  | 1  |
| 132    | Bearing Snap Ring       | 1                | 1  | 1  | 0                | 0  | 0  |
| 133    | Bearing Snap Ring       | 0                | 0  | 0  | 1                | 1  | 1  |
| 137    | Snap Ring               | 0                | 1  | 1  | 0                | 0  | 0  |
| 138    | Snap Ring               | 0                | 1  | 0  | 1                | 1  | 1  |
| 142    | Bolt For Gear Axis 2    | 1                | 2  | 2  | 0                | 1  | 2  |
| 154    | Gear Spacer             | 0                | 0  | 0  | 1                | 0  | 0  |
| 187    | Fixing Screws           | 7                | 9  | 11 | 7                | 9  | 11 |
| 193    | Cover Fixing Screws     | 9                | 12 | 11 | 9                | 12 | 11 |
| 213    | Flange Roll Pin         | 1                | 1  | 2  | 1                | 1  | 2  |
| 250    | Lifting eye             | 1                | 1  | 1  | 1                | 1  | 1  |
| 251    | Bore plug               | 1                | 1  | 1  | 0                | 0  | 0  |
| 252    | Gearcase Bore plug      | 0                | 0  | 0  | 1                | 1  | 1  |
| 254    | Plug                    | 5                | 5  | 7  | 5                | 5  | 7  |
| 257    | Magnetic drain plug     | 1                | 1  | 1  | 1                | 1  | 1  |
| 261    | Dipstick/Breather       | 1                | 1  | 1  | 1                | 1  | 1  |
| 282    | Nameplate               | 1                | 1  | 1  | 1                | 1  | 1  |
| 284    | Rivet                   | 2                | 2  | 2  | 2                | 2  | 2  |
| 500    | Nilos ring Axis 2       | 0                | 0  | 1  | 0                | 0  | 1  |
| 501    | Nilos ring Axis 4 front | 1                | 1  | 1  | 1                | 1  | 1  |
| 502    | Nilos ring Axis 4 back  | 0                | 0  | 1  | 0                | 0  | 1  |
| 517    | Snap Ring               | 1                | 0  | 0  | 1                | 0  | 0  |

#### Typical Maintenance Items - Bearings and Seals (Double Reduction)

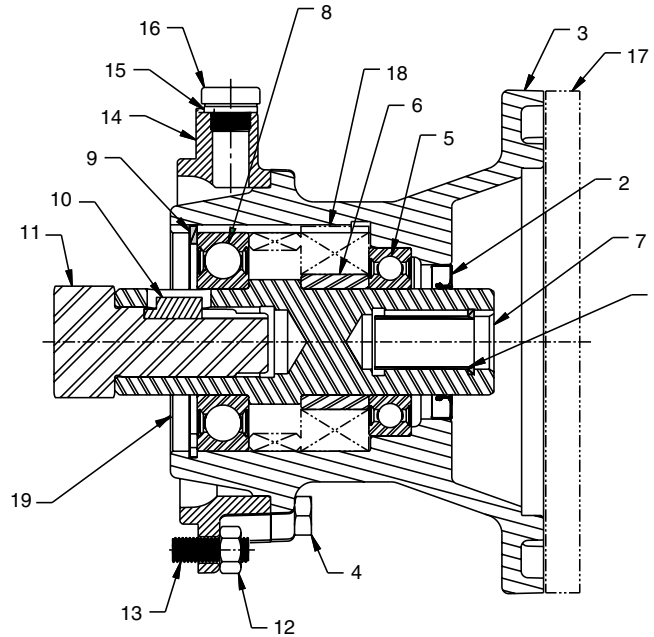
| Gear Frame | Item Description |           |        |        |                        |
|------------|------------------|-----------|--------|--------|------------------------|
|            | Bearings         |           |        |        | Seal (mm)              |
|            | 061              | 062       | 063    | 064    | 090                    |
| 36         | 22217E           | NJ214 ECP | 22308E | 22208E | 85x150x12 DL, nitrile  |
| 37         | 22220            | NJ217     | 22311  | 22310E | 100x180x12 DL, nitrile |
| 38         | 23124E           | NJ220     | 22312E | 22312E | 120x200x14 DL, nitrile |

#### Typical Maintenance Items - Bearings and Seals (Triple Reduction)

| Gear Frame | Item Description |           |        |       |        |        |                        |
|------------|------------------|-----------|--------|-------|--------|--------|------------------------|
|            | Bearings         |           |        |       |        |        | Seal (mm)              |
|            | 061              | 062       | 063    | 064   | 065    | 066    | 090                    |
| 36         | 22217E           | NJ214 ECP | 32206B | 32207 | 22308E | 22208E | 85x150x12 DL, nitrile  |
| 37         | 22220            | NJ217     | 30308  | 30308 | 22311  | 22310E | 100x180x12 DL, nitrile |
| 38         | 23124E           | NJ220     | 30310  | 30310 | 22312E | 22312E | 120x200x14 DL, nitrile |

## C-Face Input Parts Lists (Quantity Per Unit)

### CbN 30 - 38



| No. | Description           | 56C | 140TC | 180TC | 210TC | 250TC | 280TC | 320TC◆ |
|-----|-----------------------|-----|-------|-------|-------|-------|-------|--------|
| 1   | Non-Metallic Liner    | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 2   | Seal                  | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 3   | Motor Adapter         | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 4   | Capscrew              | 6   | 6     | 6     | 6     | 6     | 6     | 6      |
| 5   | Bearing               | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 6   | Spacer                | 1 † | 1 †   | 1     | 1     | 1     | 1     | 1      |
| 7   | Input Shaft           | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 8   | Bearing               | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 9   | Internal Snap Ring    | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 10  | Key*                  | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 11  | Pinion                | 1   | 1     | 1     | 1     | 1     | 1     | 1      |
| 12  | Nuts†                 | **  | **    | **    | **    | **    | **    | **     |
| 13  | Studs†                | **  | **    | **    | **    | **    | **    | **     |
| 14  | Adapter Flange        | 1 † | 1 †   | 1     | 1     | 1     | 1     | 1      |
| 15  | Gasket                | 1 † | 1 †   | 1     | 1     | 1     | 1     | 1      |
| 16  | Plug (1/4")           | 1 † | 1 †   | 1     | 1     | 1     | 1     | 1      |
| 17  | Motor Adapter Flange  | N/A | N/A   | N/A   | N/A   | 1***  | 1     | N/A    |
| 18  | Backstop Kit (option) | 1 † | 1 †   | 1     | 1     | 1     | 1     | 1      |
| 19  | Seal                  | 0   | 0     | 0     | 0     | 0     | 1     | 1      |

\* Pin used with 9mm, 12mm, 15mm and 18mm pinion.

\*\* Depending on gear frame size: 31 = 4, 32 = 5, 33 = 6, 34 = 4, 35 = 8.

\*\*\* Applicable to size 33.

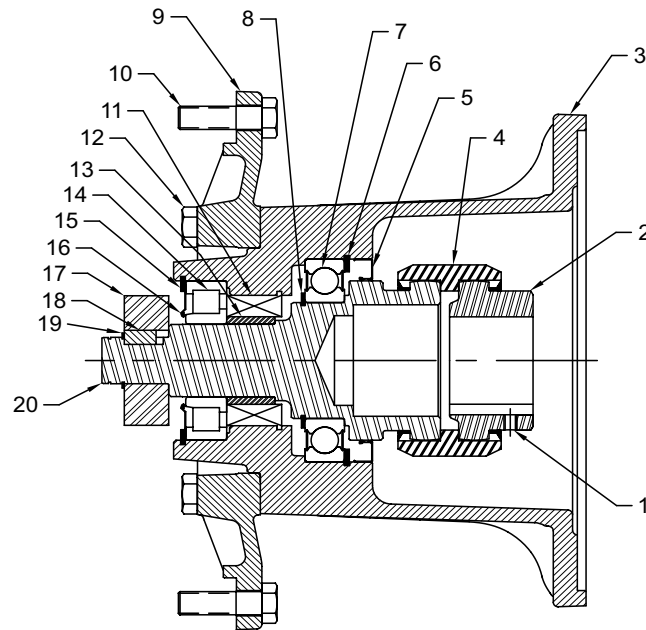
† Not applicable to size 30.

◆ Not applicable to sizes 36 and 37

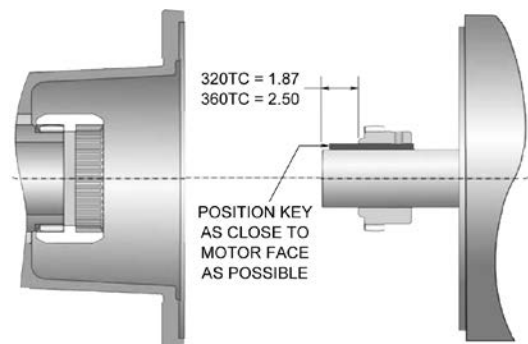
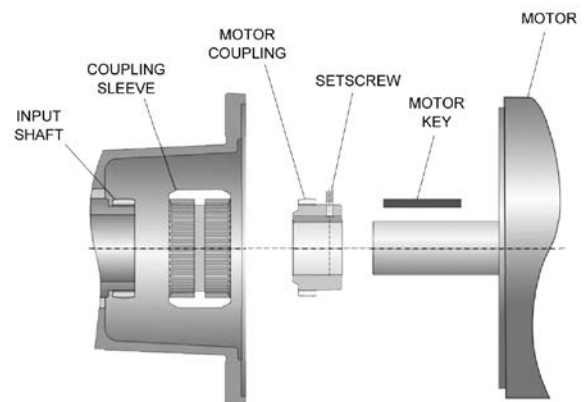
| Gear Frame (s) | Motor Frame (s) | Bearings   |            | Oil Seal (inches)    |
|----------------|-----------------|------------|------------|----------------------|
|                |                 | 5          | 8          | 9                    |
| 30             | 56C, 140TC      | 6006 2RS   | 6004 2RS   | 55 X 30 X 10 (mm)    |
| 31 to 36       | 56C, 140TC      | 6007 ZZ C3 | 6207 ZZ C3 | 2 X 1.375 X .312     |
| 31 to 37       | 180TC           | 6012 ZZ C3 | 6210 ZZ C3 | 4 X 2.250 X .468     |
| 32 to 37       | 210TC           | 6012 ZZ C3 | 6210 ZZ C3 | 4 X 2.250 X .468     |
| 38             | 210TC           | 6014 ZZ C3 | NJ210      | 4.438 X 2.625 X .437 |
| 34 to 38       | 250TC, 280TC    | 6014 ZZ C3 | NJ210      | 4.438 X 2.625 X .437 |
| 35 *           | 320TC           | 6216 ZZ C3 | NJ310      | 140 X 90 X 12 (mm)   |

\* For 36 through 38 frame with 320TC input, refer to opposing page

**C-Face Input Parts Lists (Quantity Per Unit)**  
**CbN 36 - 38**

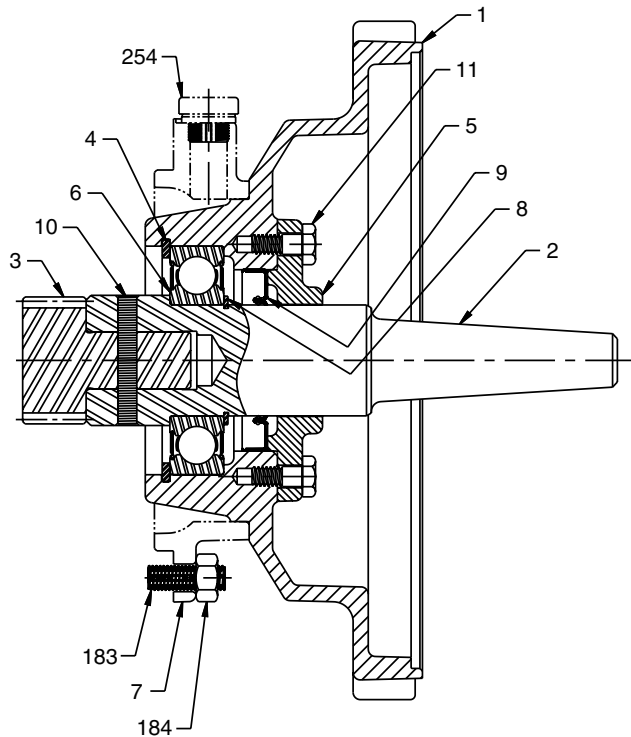


| No. | Description of Part | 320TC/360TC |
|-----|---------------------|-------------|
| 1   | Setscrew            | 1           |
| 2   | Motor Coupling      | 1           |
| 3   | Motor Adapter       | 1           |
| 4   | Coupling Sleeve     | 1           |
| 5   | Seal                | 1           |
| 6   | Internal Snap Ring  | 1           |
| 7   | Bearing             | 1           |
| 8   | External Snap Ring  | 1           |
| 9   | Adapter Flange      | 1           |
| 10  | Capscrew            | 8           |
| 11  | Backstop            | 1           |
| 12  | Capscrew            | 12          |
| 13  | Spacer              | 1           |
| 14  | Bearing             | 1           |
| 15  | Internal Snap Ring  | 1           |
| 16  | Bearing Seal        | 1           |
| 17  | Pinion              | 1           |
| 18  | Key                 | 1           |
| 19  | External Snap Ring  | 1           |
| 20  | Input Shaft         | 1           |



| Gear Frame | Bearings   |       | Oil Seal (inches)           |
|------------|------------|-------|-----------------------------|
|            | 7          | 14    | 9                           |
| 36 to 38   | 6216 ZZ C3 | NJ310 | 140 x 110 x 12 (mm) nitrile |

| Gearmotor Input Parts Lists (Quantity Per Unit) |  |
|-------------------------------------------------|--|
| CbN 30 - 38                                     |  |

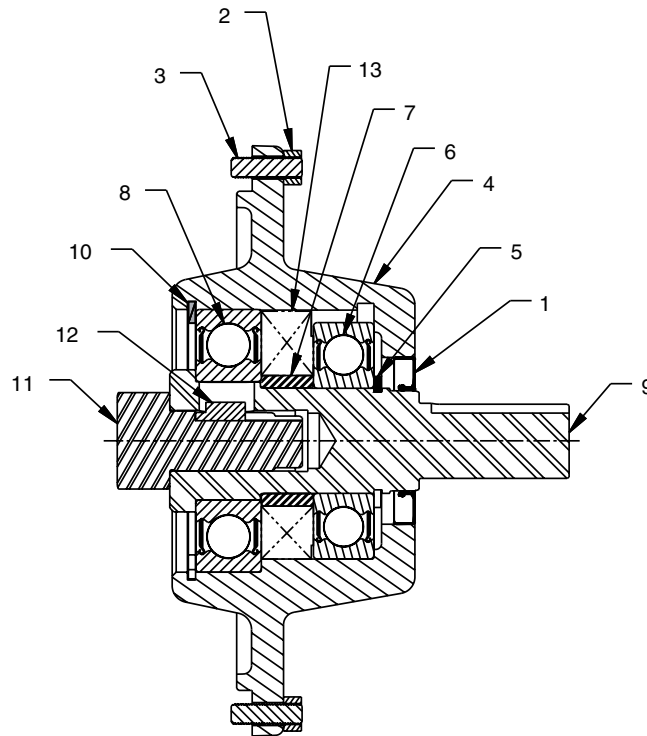


| No. | Description        | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|--------------------|----|----|----|----|----|----|
| 1   | Motor Adapter      | 1  | 1  | 1  | 1  | 1  | 1  |
| 2   | Input Shaft        | 1  | 1  | 1  | 1  | 1  | 1  |
| 3   | Pinion             | 1  | 1  | 1  | 1  | 1  | 1  |
| 4   | Internal Snap Ring | 1  | 1  | 1  | 1  | 1  | 1  |
| 5   | Bearing Cap**      | †  | 1  | 1  | 1  | 1  | 1  |
| 6   | Bearing            | 1  | 1  | 1  | 1  | 1  | 1  |
| 7   | Adapter Flange     | †  | 1  | 1  | 1  | 1  | 1  |
| 8   | External Snap Ring | 1  | 1  | 1  | 1  | 1  | 1  |
| 9   | Seal               | 1  | 1  | 1  | 1  | 1  | 1  |
| 10  | Pinion Pin         | 1  | 1  | 1* | 1* | 1* | 1* |
| 11  | Capscrew**         | †  | 2  | 2  | 2  | 2  | 2  |
| 183 | Stud               | 4  | 4  | 5  | 6  | 4  | 8  |
| 184 | Nut                | 4  | 4  | 5  | 6  | 4  | 8  |
| 254 | Plug (or Breather) | †  | 1  | 1  | 1  | 1  | 1  |

† Not applicable to size 30.

| Gear Frame | Motor Frame | Bearings   | Seal (inches)        |
|------------|-------------|------------|----------------------|
|            |             | 6          | 9                    |
| 30         | 56, 140T    | 6005 ZZ C3 | 47 x 25 x 7 (mm)     |
| 31         | 48          | 6005 ZZ C3 | 1.50 x .937 x .250   |
| 31 to 37   | 56, 140T    | 6007 ZZ C3 | 2.25 x 1.375 x .312  |
|            | 180T, 210T  | 6207 ZZ C3 | 2.25 x 1.375 x .312  |
| 38         | 210T        | 6310 ZZ C3 | 3.500 x 2.250 x .375 |
| 33         | 250T        | 6209 ZZ C3 | 2.875 x 1.750 X .375 |
| 34 to 38   | 250T , 280T | 6310 ZZ C3 | 3.500 x 2.250 x .375 |
| 35 to 38   | 320T        | 6311 ZZ C3 | 3.875 x 2.5 x .470   |

**AP Input Shaft Parts Lists (Quantity Per Unit)**  
**CbN 30 - 35**



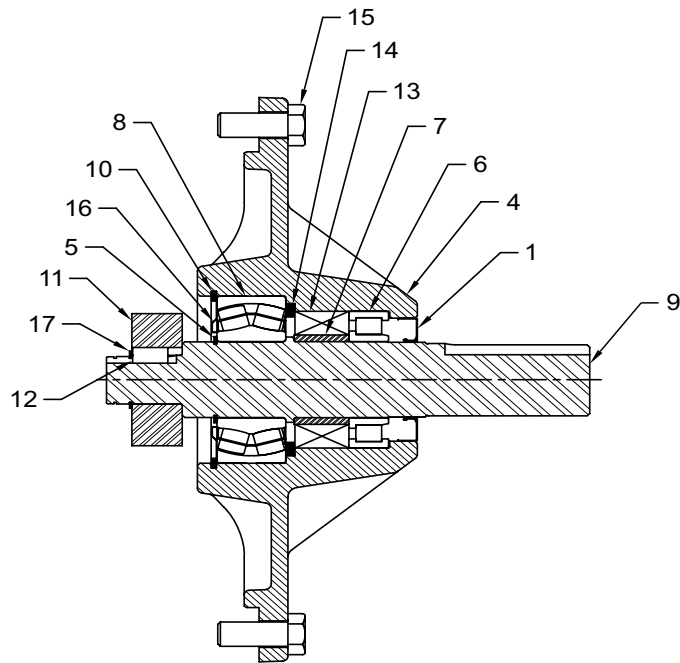
| No. | Description           | 30 | 31 | 32 | 33 | 34 | 35 |
|-----|-----------------------|----|----|----|----|----|----|
| 1   | Seal                  | 1  | 1  | 1  | 1  | 1  | 1  |
| 2   | Nuts                  | 1  | 4  | 5  | 6  | 4  | 8  |
| 3   | Studs                 | 4  | 4  | 5  | 6  | 4  | 8  |
| 4   | Housing               | 1  | 1  | 1  | 1  | 1  | 1  |
| 5   | External Snap Ring    | 1  | 1  | 1  | 1  | 1  | 1  |
| 6   | Bearing               | 1  | 1  | 1  | 1  | 1  | 1  |
| 7   | Spacer                | 0  | 1  | 1  | 1  | 1  | 1  |
| 8   | Bearing               | 1  | 1  | 1  | 1  | 1  | 1  |
| 9   | Input Shaft           | 1  | 1  | 1  | 1  | 1  | 1  |
| 10  | Internal Snap Ring    | 1  | 1  | 1  | 1  | 1  | 1  |
| 11  | Pinion                | 1  | 1  | 1  | 1  | 1  | 1  |
| 12  | Key*                  | 1  | 1  | 1  | 1  | 1  | 1  |
| 13  | Backstop Kit (Option) | †  | 1  | 1  | 1  | 1  | 1  |

\* Pin used with 9mm, 15mm and 18mm pinion.

† Not applicable to size 30.

| Gear Frame | Bearings   |            | Oil Seal (inches)                |
|------------|------------|------------|----------------------------------|
|            | 6          | 8          | 1                                |
| 30         | 6203 2RS   | 6204 2RS   | 28 x 17 x 7 (mm) DL, nitrile     |
| 31, 32     | 6206 ZZ C3 | 6207 ZZ C3 | 1.875 x 1.125 x .25 DL, nitrile  |
| 33         | 6308 ZZ C3 | 6309 ZZ C3 | 2.5 x 1.50 x .312 DL, nitrile    |
| 34         | NJ209      | 6311 ZZ C3 | 2.5 x 1.50 x .312 DL, nitrile    |
| 35         | NJ210      | 6312 ZZ C3 | 3.188 x 1.938 x .438 DL, nitrile |

**AP Input Shaft Parts Lists (Quantity Per Unit)**  
**CbN 36 - 38**

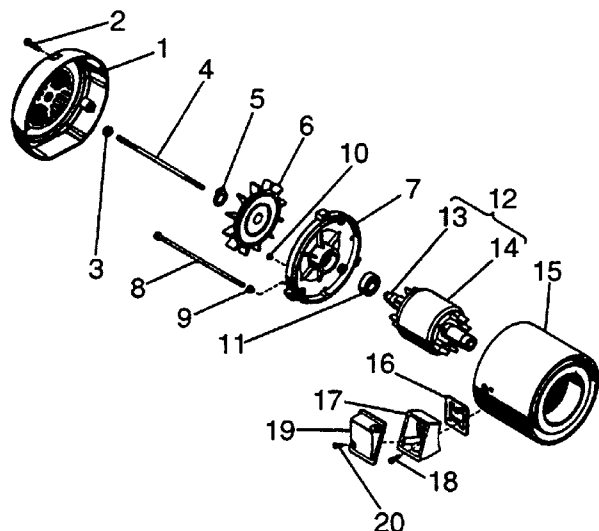


| No. | Description of Part     | All Reductions |
|-----|-------------------------|----------------|
| 1   | Seal                    | 1              |
| 2   | Nuts                    | 0              |
| 3   | Studs                   | 0              |
| 4   | Housing                 | 1              |
| 5   | External Snap Ring      | 1              |
| 6   | Bearing                 | 1              |
| 7   | Spacer                  | 1              |
| 8   | Bearing                 | 1              |
| 9   | Input Shaft             | 1              |
| 10  | Internal Snap Ring      | 1              |
| 11  | Pinion                  | 1              |
| 12  | Key                     | 1              |
| 13  | Backstop Kit (optional) | 1              |
| 14  | Spacer                  | 1              |
| 15  | Bolt                    | 8              |
| 16  | Bearing Seal            | 1              |
| 17  | External Snap Ring      | 1              |

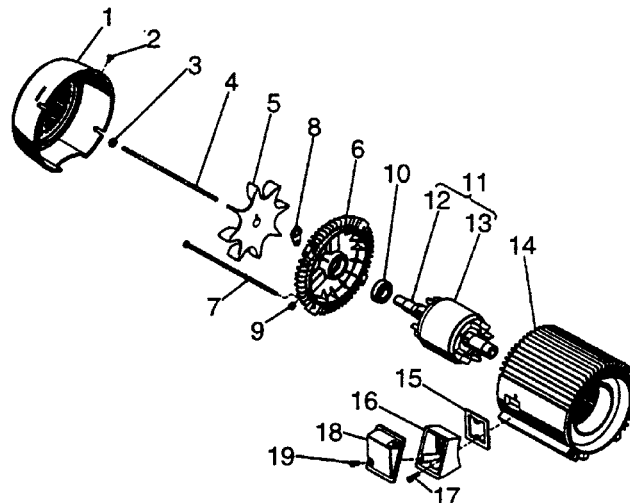
| Gear Frame | Bearings |       | Seal (inches)                     |
|------------|----------|-------|-----------------------------------|
|            | 6        | 8     | 1                                 |
| 36 & 37    | NJ2210   | 22310 | 3.188 x 1.938 x .438 DL, nitrile  |
| 38         | NU213E   | 22311 | 3.250 x 2.500 x .375, DL, nitrile |

## TEFC Intergral "Modular Motor" Parts List

Frames 56, 140T



Frames 180T, 210T, 250T, A280T



| Part # | Description                             | Qty. |
|--------|-----------------------------------------|------|
| 1      | Fan Cover                               | 1    |
| 2      | Self Tapping Screw                      | 3    |
| 3      | Hex Nut                                 | 1    |
| 4      | Stud                                    | 1    |
| 5      | Retaining Snap Ring                     | 1    |
| 6      | Fan                                     | 1    |
| 7      | Bracket                                 | 1    |
| 8      | Screw                                   | 4    |
| 9      | Bushing                                 | 4    |
| 10     | Plastic Plug                            | 4    |
| 11     | Ball Bearing                            | 1    |
| 12     | Rotor Assembly (includes items 13 & 14) | 1    |
| 13     | Shaft                                   | 1    |
| 14     | Rotor Core                              | 1    |
| 15     | Wound Stator Assembly                   | 1    |
| 16     | Gasket                                  | 1    |
| 17     | Outlet Box Base                         | 1    |
| 18     | Self Tapping Screw                      | 2    |
| 19     | Outlet Box Cover                        | 1    |
| 20     | Self Tapping Screw                      | 2    |

| Part # | Description                             | Qty. |
|--------|-----------------------------------------|------|
| 1      | Fan Cover                               | 1    |
| 2      | Self Tapping Screw                      | 4    |
| 3      | Hex Nut                                 | 1    |
| 4      | Stud                                    | 1    |
| 5      | Fan                                     | 1    |
| 6      | Bracket                                 | 1    |
| 7      | Hex Head Bolt                           | 4    |
| 8      | Lifting Lug                             | 1    |
| 9      | Hex Countersunk Pipe Plug               | 2    |
| 10     | Ball Bearing                            | 1    |
| 11     | Rotor Assembly (includes items 12 & 13) | 1    |
| 12     | Shaft                                   | 1    |
| 13     | Rotor Core                              | 1    |
| 14     | Wound Stator Assembly                   | 1    |
| 15     | Gasket                                  | 1    |
| 16     | Outlet Box Base                         | 1    |
| 17     | Self Tapping Screw                      | 2    |
| 18     | Outlet Box Cover                        | 1    |
| 19     | Self Tapping Screw                      | 2    |

Notes:

Lined area for notes.

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