VIKING PUMP
A Unit of IDEX Corporation

*Viking® Offset and In-Line Reducers*

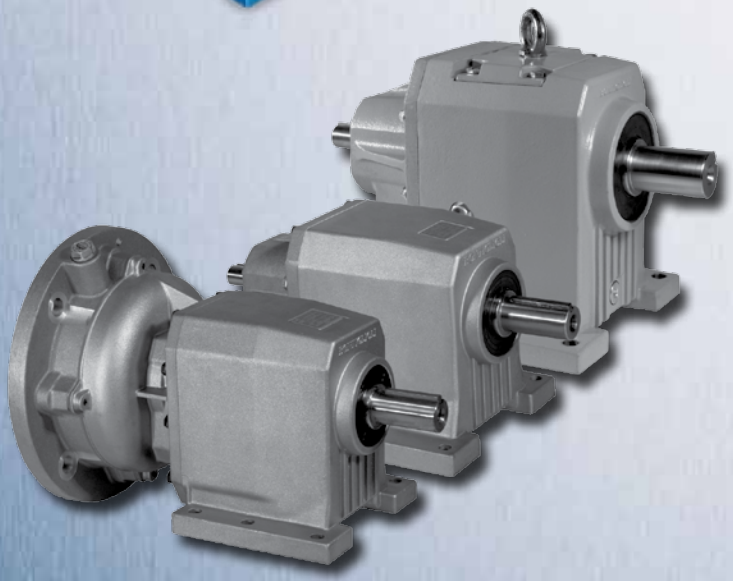
# Reliable Speed Reduction





## OFFSET Gear Reducers:

- Available in three sizes, each size offering several gear ratios.
- All three reducers contain a hardened steel pinion and gear supported by precision ball bearings.
- All ratios are fully interchangeable in each gearbox.
- Flexible - can adapt to a range of input shaft center heights. Output shaft heights match Viking pumps.



## IN-LINE Gear Reducers:

- Available in eleven sizes and a variety of ratios, all double reduction.
- Mounting Options
  - Solid input shaft
  - Hollow input shaft with NEMA C or IEC Flange Mount
- Compact inline design.
- High efficiency.
- Low noise levels.

IDEX CORPORATION

# Selection Detail | Selecting the Correct Viking® Offset or In-Line Gear Reducer

## Key Points To Keep In Mind When Selecting Your Gear Reducer

1. Determine the actual horsepower requirements of the application from the pump curve or specifications for other driven equipment.
2. Determine the "equivalent horsepower" for the application by multiplying the actual horsepower to be transmitted by the appropriate service factor, which can be obtained from the Service Factor Table below. This service factor takes into account the length of service per day, the load classification (uniform, moderate shock, heavy shock), and the type of drive. A table of driven load classifications is included to help you determine the service factor to use.
3. Find the reducer from the Horsepower Tables on pages 3-5 which most closely matches your speed requirements. Make sure the equivalent horsepower (kW) for a given input speed and ratio is less than or equal to the maximum recommended horsepower (kW) shown in the chart.
4. Select the correct reducer bracket that most closely matches the driven load's shaft height.
5. Check the Dimensions table to ensure that the shaft center height of your driver falls within the Input Shaft Center Height Min/Max range when using the standard Viking mounting bracket for the offset reducers.

## Service Factor Table

| Power Source [A,C] | Classification of Driven Load [B,C] | Intermittent Up to 3 Hours Per Day | 8 - 10 Hours Per Day | 24 Hours Per Day |
|---|---|---|---|---|
| Electric Motor, Steam Turbine, or Hydraulic Motor | Uniform | 0.8 | 1.0 | 1.25 |
| | Moderate Shock | 1.0 | 1.25 | 1.5 |
| | Heavy Shock | 1.5 | 1.75 | 2.0 |
| Multi-Cylinder Internal Combustion Engine | Uniform | 1.0 | 1.25 | 1.5 |
| | Moderate Shock | 1.25 | 1.5 | 1.75 |
| | Heavy Shock | 1.75 | 2.0 | 2.25 |

**A.** For applications driven by single cylinder engines, refer to factory for other service factors.
**B.** Rotary Pump applications are classified as Uniform Loads.
**C.** Use of belt or chain type drives to either reducer input or output shaft is not recommended.

## Driven Load Classifications

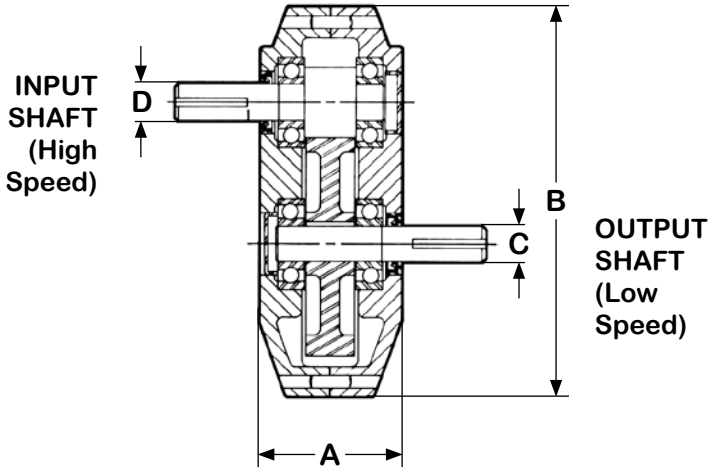
(Excerpted from AGMA Information Sheet 922-A96 ©1996)
Key: U = Uniform Load; M = Moderate Shock; H = Heavy Shock

| Application | Load Classification |
|---|---|
| Pumps, Rotary and Centrifugal | U |
| Pumps, Reciprocating | M |
| Agitators | U |
| Blowers | U |
| Compressors, Centrifugal & Lobe | U |
| Compressors, Reciprocating | M |
| Cranes and Hoists | M |
| Crushers, Ore and Stone | H |
| Elevators | M |
| Fans, Centrifugal, Forced Draft | U |

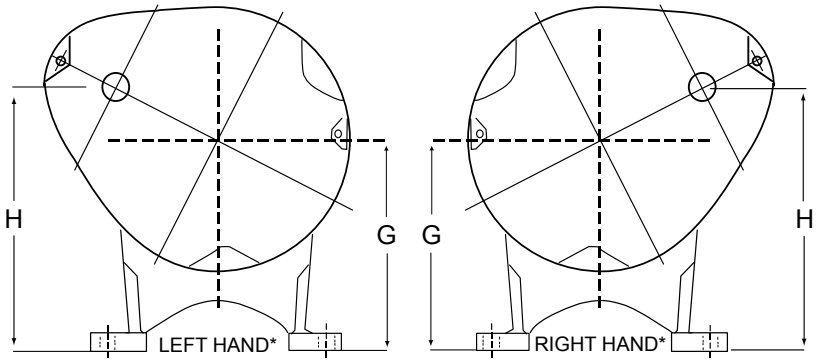
| Application | Load Classification |
|---|---|
| Fans, Cooling Tower | M |
| Feeders, Apron, Belt, Screw | U |
| Feeders, Reciprocating | M |
| Generators | U |
| Hammer Mills | M |
| Machine Tools | M |
| Mills, Rotary | M |
| Mixers, Concrete, Drum Type | M |
| Printing Presses | U |
| Sewage Disposal Bar Screens | U |

# Specifications & Dimensions - Offset Reducers

| | Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|---|
| | | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| Size A | 2.24:1 | 780 | 6.1 | 4.6 | 520 | 4.3 | 3.2 |
| | 2.76:1 | 640 | 4.9 | 3.7 | 420 | 3.4 | 2.5 |
| | 3.43:1 | 520 | 3.8 | 2.8 | 350 | 2.6 | 1.9 |
| | 4.17:1 | 420 | 3.1 | 2.3 | 280 | 2.2 | 1.6 |
| Size B | 1.87:1 | 950 | 19.0 | 14.2 | 640 | 16.5 | 12.3 |
| | 2.24:1 | 780 | 17.0 | 12.7 | 520 | 14.0 | 10.4 |
| | 2.76:1 | 640 | 15.0 | 11.2 | 420 | 11.6 | 8.7 |
| | 3.40:1 | 520 | 13.0 | 9.7 | 350 | 10.1 | 7.5 |
| | 4.19:1 | 420 | 11.0 | 8.2 | 280 | 8.5 | 6.3 |
| | 5.06:1 | 350 | 9.5 | 7.1 | 230 | 7.3 | 5.4 |
| | 6.27:1 | 280 | 7.6 | 5.7 | 190 | 5.3 | 4.0 |
| | 7.65:1 | 230 | 6.4 | 4.8 | 155 | 4.4 | 3.3 |
| Size C | 2.21:1 | 780 | 49.8 | 37.2 | 520 | 40.1 | 29.9 |
| | 2.80:1 | 640 | 43.5 | 32.5 | 420 | 30.0 | 22.4 |
| | 3.31:1 | 520 | 39.0 | 29.1 | 350 | 26.8 | 20.0 |
| | 4.21:1 | 420 | 32.4 | 24.2 | 280 | 22.2 | 16.6 |
| | 5.08:1 | 350 | 26.6 | 19.8 | 230 | 18.2 | 13.6 |
| | 6.24:1 | 280 | 19.7 | 14.7 | 190 | 13.8 | 10.3 |
| | 7.95:1 | 220 | 18.0 | 13.4 | 145 | 12.6 | 9.4 |




| Reducer Size | A in (mm) | B in (mm) | C in (mm) | D in (mm) |
|---|---|---|---|---|
| A | 6.50 (165.10) | 7.94 (207.68) | .75 (19.05) | .75 (19.05) |
| B | 10.50 (266.70) | 10.24 (260.10) | 1.00 (25.40) | 1.25 (31.83) |
| C | 13.00 (330.20) | 14.50 (368.30) | 1.37 (34.80) | 1.37 (34.80) |




*Viewed from input shaft end
G – Output shaft center height (Centerline of mounting bracket).
Sizes B and C have multiple mounting bracket options with different output shaft center heights.
H – Input shaft center height (adjustable by rotating reducer on slotted mounting bracket).

| Size | G | | H | | H | |
|---|---|---|---|---|---|---|
| | Output Shaft Center Height in (mm) | Viking Pumps with Matching Shaft Height * | Left Hand Input Shaft Center Height | | Right Hand Input Shaft Center Height | |
| | | | Max. in (mm) | Min. in (mm) | Max. in (mm) | Min. in (mm) |
| A | 3.50 (88.9) | HD sizes H, HJ, HL | 4.50 (114.3) | 2.375 (60.3) | 4.50 (114.3) | 2.375 (60.3) |
| B | 4.625 (117.5) | GP sizes J, K, KK | 6.125 (155.6) | 2.625 (66.7) | 6.625 (168.3) | 3.125 (79.4) |
| | 5.50 (139.7) | HD sizes K, KK | 7.125 (181) | 3.625 (92.1) | 7.375 (187.3) | 3.875 (98.4) |
| | 7.00 (177.8) | HD sizes L, LQ, LL, LS | 9.375 (238.1) | 6.00 (152.4) | 8.00 (203.2) | 4.625 (117.4) |
| C | 7.75 (196.8) | GP sizes Q, QS | 10.50 (266.7) | 5.50 (139.7) | 10.00 (254) | 5.00 (127) |
| | 9.50 (241.3) | GP sizes M, N; HD size N | 12.125 (308) | 7.25 (184.1) | 11.75 (298.4) | 6.75 (171.4) |

* HD = Heavy Duty Series 125, 4125, 225, 4225, 335, 4335, 123, 4123, 333, 4333, 127, 4127, 337, 4337, 724, 4724, 124A, 4124A, 8124A, 126A, 4126A, 8126A, 123A, 4123A, 8123A, 127A, 4127A, 8127A, 827, 823, 825.

GP = General Purpose Series 32, 432, 34, 434.

# Specifications - In-Line Reducers

## Size 11

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.77:1 | 632 | 3.4 | 2.5 | 415 | 2.5 | 1.8 |
| 3.65:1 | 479 | 2.9 | 2.1 | 315 | 2.1 | 1.6 |
| 4.87:1 | 359 | 2.5 | 1.8 | 236 | 1.8 | 1.3 |
| 6.23:1 | 281 | 2.2 | 1.6 | 185 | 1.6 | 1.2 |
| 6.87:1 | 255 | 2.0 | 1.5 | 167 | 1.5 | 1.1 |
| 7.62:1 | 230 | 1.9 | 1.4 | 151 | 1.4 | 1.0 |
| 9.06:1 | 193 | 1.7 | 1.3 | 127 | 1.3 | .97 |
| 10.10:1 | 174 | 1.6 | 1.2 | 114 | 1.2 | .90 |
| 12.10:1 | 145 | 1.4 | 1.0 | 95 | 1.0 | .74 |
| 13.40:1 | 131 | 1.4 | 1.0 | 86 | .99 | .74 |
| 15.50:1 | 113 | 1.2 | .89 | 74 | .90 | .67 |
| 17.20:1 | 102 | 1.1 | .82 | 67 | .83 | .62 |
| 18.60:1 | 94 | 1.1 | .82 | 62 | .80 | .60 |
| 20.60:1 | 85 | 1.0 | .75 | 56 | .70 | .52 |
| 22.90:1 | 76 | .96 | .75 | 50 | .70 | .52 |

**MOTOR MOUNTS:** **NEMA:** 56C, 145TC & 184TC **IEC:** 71, 90 & 112

## Size 21

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.72:1 | 643 | 7.7 | 5.7 | 423 | 5.7 | 4.2 |
| 3.71:1 | 472 | 6.3 | 4.7 | 310 | 4.6 | 3.4 |
| 4.77:1 | 367 | 5.4 | 4.0 | 241 | 3.6 | 2.7 |
| 6.09:1 | 287 | 4.5 | 3.4 | 189 | 2.9 | 2.1 |
| 6.38:1 | 274 | 5.1 | 3.8 | 180 | 3.7 | 2.7 |
| 7.08:1 | 247 | 4.7 | 3.5 | 162 | 3.4 | 2.5 |
| 8.68:1 | 202 | 4.2 | 3.1 | 132 | 3.1 | 2.3 |
| 9.65:1 | 181 | 3.9 | 2.9 | 119 | 2.8 | 2.1 |
| 11.20:1 | 157 | 3.6 | 2.7 | 103 | 2.6 | 1.9 |
| 12.40:1 | 141 | 3.3 | 2.5 | 93 | 2.4 | 1.8 |
| 14.30:1 | 122 | 3.1 | 2.3 | 80 | 2.2 | 1.6 |
| 15.80:1 | 111 | 2.9 | 2.1 | 73 | 2.1 | 1.5 |
| 18.00:1 | 97 | 2.7 | 2.0 | 64 | 1.8 | 1.3 |
| 20.00:1 | 88 | 2.5 | 1.8 | 57 | 1.6 | 1.2 |
| 21.90:1 | 80 | 2.4 | 1.8 | 52 | 1.5 | 1.1 |

**MOTOR MOUNTS:** **NEMA:** 56C, 145TC & 184TC **IEC:** 71, 90 & 112

## Size 31

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.88:1 | 608 | 11.6 | 8.6 | 399 | 8.4 | 6.2 |
| 3.74:1 | 468 | 10.5 | 7.8 | 307 | 6.8 | 5.0 |
| 4.95:1 | 354 | 8.0 | 5.9 | 232 | 5.3 | 3.9 |
| 6.26:1 | 280 | 6.4 | 4.7 | 184 | 4.6 | 3.4 |
| 6.45:1 | 271 | 7.8 | 5.8 | 178 | 5.6 | 4.1 |
| 7.16:1 | 244 | 7.2 | 5.4 | 161 | 5.3 | 3.9 |
| 8.37:1 | 209 | 6.6 | 4.9 | 137 | 4.8 | 3.6 |
| 9.30:1 | 188 | 6.1 | 4.5 | 124 | 4.5 | 3.3 |
| 11.10:1 | 158 | 5.6 | 4.2 | 104 | 4.1 | 3.0 |
| 12.30:1 | 142 | 5.2 | 3.8 | 93 | 3.8 | 2.8 |
| 14.00:1 | 125 | 4.8 | 3.6 | 82 | 3.5 | 2.6 |
| 15.60:1 | 112 | 4.5 | 3.3 | 74 | 3.1 | 2.3 |
| 18.10:1 | 97 | 4.1 | 3.0 | 64 | 2.7 | 2.0 |
| 20.10:1 | 87 | 3.8 | 2.8 | 87 | 2.4 | 1.8 |
| 22.60:1 | 77 | 3.4 | 2.5 | 57 | 2.2 | 1.6 |

**MOTOR MOUNTS:** **NEMA:** 145TC & 184TC **IEC:** 90 & 112

**NOTE:**
Solid input shaft standard (requires flexible coupling and guard).
Close-coupled motor mounts available on sizes indicated.

## Size 35

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.69:1 | 651 | 16.2 | 12.1 | 427 | 11.4 | 8.5 |
| 3.49:1 | 501 | 13.7 | 10.2 | 330 | 9.3 | 6.9 |
| 4.62:1 | 379 | 11.2 | 8.4 | 249 | 7.1 | 5.3 |
| 5.85:1 | 299 | 8.9 | 6.6 | 197 | 5.6 | 4.1 |
| 6.10:1 | 287 | 14.6 | 10.9 | 188 | 10.1 | 7.5 |
| 6.78:1 | 258 | 13.5 | 10.0 | 170 | 9.1 | 6.7 |
| 7.91:1 | 221 | 12.4 | 9.3 | 145 | 7.8 | 5.8 |
| 8.80:1 | 199 | 11.2 | 8.3 | 131 | 7.0 | 5.2 |
| 10.50:1 | 167 | 9.4 | 7.0 | 110 | 5.9 | 4.4 |
| 11.70:1 | 150 | 8.4 | 6.3 | 98 | 5.3 | 3.9 |
| 13.30:1 | 132 | 7.4 | 5.5 | 86 | 4.6 | 3.4 |
| 14.80:1 | 118 | 6.6 | 4.9 | 78 | 4.2 | 3.1 |
| 17.10:1 | 102 | 5.7 | 4.2 | 67 | 3.6 | 2.6 |
| 19.00:1 | 92 | 5.2 | 3.8 | 60 | 3.2 | 2.3 |

**MOTOR MOUNTS:** **NEMA:** 145TC, 184TC & 215TC **IEC:** 90, 112 & 132

## Size 41

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.69:1 | 651 | 23.5 | 17.5 | 427 | 14.8 | 11.0 |
| 3.61:1 | 485 | 18.3 | 13.6 | 319 | 11.5 | 8.5 |
| 4.66:1 | 375 | 14.3 | 10.6 | 247 | 9.0 | 6.7 |
| 5.95:1 | 294 | 11.2 | 8.3 | 193 | 7.0 | 5.2 |
| 6.36:1 | 275 | 13.9 | 10.3 | 181 | 10.0 | 7.4 |
| 7.07:1 | 247 | 12.9 | 9.6 | 163 | 9.5 | 7.0 |
| 8.64:1 | 202 | 11.6 | 8.6 | 133 | 8.4 | 6.2 |
| 9.60:1 | 182 | 10.5 | 7.8 | 120 | 7.6 | 5.6 |
| 11.20:1 | 157 | 9.7 | 7.2 | 103 | 7.1 | 5.3 |
| 12.40:1 | 141 | 8.9 | 6.6 | 93 | 6.5 | 4.8 |
| 14.20:1 | 123 | 8.1 | 6.0 | 81 | 5.7 | 4.2 |
| 15.80:1 | 111 | 7.4 | 5.5 | 73 | 5.2 | 3.8 |
| 17.80:1 | 98 | 7.0 | 5.2 | 65 | 4.6 | 3.4 |
| 19.80:1 | 88 | 6.3 | 4.7 | 58 | 4.1 | 3.0 |
| 22.60:1 | 77 | 5.7 | 4.2 | 51 | 3.6 | 2.6 |
| 25.00:1 | 70 | 5.2 | 3.8 | 46 | 3.3 | 2.4 |
| 28.30:1 | 62 | 4.6 | 3.4 | 41 | 2.9 | 2.1 |
| 31.40:1 | 56 | 4.1 | 3.0 | 37 | 2.6 | 1.9 |

**MOTOR MOUNTS:** **NEMA:** 145TC, 184TC & 215TC **IEC:** 90, 112 & 132

## Size 51

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.63:1 | 665 | 39.8 | 29.7 | 437 | 25.0 | 18.6 |
| 3.31:1 | 529 | 32.9 | 24.5 | 347 | 20.7 | 15.4 |
| 4.45:1 | 393 | 25.0 | 18.6 | 258 | 15.7 | 11.7 |
| 5.63:1 | 311 | 20.1 | 15.0 | 204 | 12.6 | 9.4 |
| 6.99:1 | 250 | 23.3 | 17.3 | 164 | 17.0 | 12.6 |
| 7.75:1 | 222 | 21.2 | 15.8 | 148 | 15.4 | 11.4 |
| 8.79:1 | 199 | 20.1 | 15.0 | 131 | 14.7 | 10.9 |
| 9.75:1 | 179 | 18.1 | 13.5 | 118 | 13.3 | 9.9 |
| 11.80:1 | 148 | 16.9 | 12.6 | 97 | 11.0 | 8.2 |
| 13.10:1 | 134 | 14.8 | 11.0 | 88 | 9.9 | 7.3 |
| 15.00:1 | 117 | 13.8 | 10.3 | 77 | 8.7 | 6.5 |
| 16.00:1 | 105 | 12.4 | 9.2 | 69 | 7.8 | 5.8 |
| 18.90:1 | 93 | 10.9 | 8.1 | 61 | 6.9 | 5.1 |
| 21.00:1 | 83 | 9.8 | 7.3 | 55 | 6.2 | 4.6 |
| 23.40:1 | 75 | 8.8 | 6.5 | 49 | 5.6 | 4.1 |
| 25.90:1 | 68 | 7.9 | 5.9 | 44 | 5.0 | 3.7 |
| 29.80:1 | 59 | 6.9 | 5.1 | 39 | 4.4 | 3.2 |
| 33.00:1 | 53 | 6.2 | 4.6 | 35 | 3.9 | 2.9 |

**MOTOR MOUNTS:** **NEMA:** 184TC, 215TC, 256TC & 286TC **IEC:** 112, 132, 160 & 180

# Specifications - In-Line Reducers

## Size 61

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 2.82:1 | 621 | 50.8 | 37.9 | 408 | 32.8 | 24.4 |
| 3.70:1 | 473 | 40.2 | 30.0 | 311 | 27.4 | 20.4 |
| 4.56:1 | 384 | 33.7 | 25.1 | 252 | 23.5 | 17.5 |
| 6.00:1 | 292 | 26.9 | 20.0 | 192 | 18.0 | 13.4 |
| 6.74:1 | 260 | 43.6 | 32.5 | 171 | 33.6 | 25.0 |
| 7.48:1 | 234 | 43.3 | 32.3 | 154 | 29.1 | 21.7 |
| 8.84:1 | 198 | 36.9 | 27.5 | 130 | 24.8 | 18.5 |
| 9.82:1 | 178 | 35.5 | 26.4 | 117 | 22.3 | 16.6 |
| 10.90:1 | 161 | 31.9 | 23.8 | 106 | 20.1 | 15.0 |
| 12.10:1 | 145 | 28.7 | 21.4 | 95 | 18.1 | 13.5 |
| 14.30:1 | 122 | 24.3 | 18.1 | 80 | 15.3 | 11.4 |
| 15.90:1 | 110 | 21.9 | 16.3 | 72 | 13.7 | 10.2 |
| 17.70:1 | 99 | 19.6 | 14.6 | 65 | 12.4 | 9.2 |
| 19.60:1 | 89 | 17.7 | 13.2 | 59 | 11.2 | 8.3 |
| 22.40:1 | 78 | 15.5 | 11.5 | 51 | 9.8 | 7.3 |
| 24.80:1 | 71 | 14.0 | 10.4 | 46 | 8.8 | 6.5 |
| 27.40:1 | 64 | 12.7 | 9.4 | 42 | 8.0 | 5.9 |
| 30.40:1 | 58 | 11.4 | 8.5 | 38 | 7.2 | 5.3 |
| 34.20:1 | 51 | 9.2 | 6.8 | 34 | 6.0 | 4.4 |
| 38.00:1 | 46 | 9.2 | 6.8 | 30 | 5.8 | 4.3 |

**MOTOR MOUNTS:** **NEMA:** 184TC, 215TC, 256TC & 286TC **IEC:** 112, 132, 160 & 180

## Size 70

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 4.57:1 | 383 | 95.3 | 71.0 | 252 | 63.5 | 47.3 |
| 5.85:1 | 299 | 83.2 | 62.0 | 197 | 53.9 | 40.2 |
| 6.25:1 | 280 | 80.3 | 59.9 | 184 | 54.2 | 40.4 |
| 7.46:1 | 235 | 67.4 | 50.2 | 154 | 45.6 | 34.0 |
| 8.00:1 | 219 | 68.0 | 50.7 | 144 | 42.7 | 31.8 |
| 9.52:1 | 184 | 54.5 | 40.6 | 121 | 36.7 | 27.3 |
| 10.20:1 | 171 | 53.3 | 39.8 | 113 | 33.5 | 25.0 |
| 11.20:1 | 156 | 46.2 | 34.4 | 103 | 31.2 | 23.2 |
| 13.00:1 | 135 | 41.8 | 31.1 | 88 | 26.3 | 19.6 |
| 14.10:1 | 124 | 38.6 | 28.8 | 82 | 24.8 | 18.5 |
| 15.30:1 | 114 | 35.5 | 26.4 | 75 | 22.3 | 16.6 |
| 16.70:1 | 105 | 31.7 | 23.6 | 69 | 19.9 | 14.8 |
| 19.30:1 | 91 | 28.2 | 21.0 | 60 | 17.7 | 13.2 |
| 22.90:1 | 76 | 23.7 | 17.6 | 50 | 14.9 | 11.1 |
| 27.70:1 | 63 | 19.6 | 14.6 | 42 | 12.3 | 9.1 |
| 34.70:1 | 50 | 15.7 | 11.7 | 33 | 9.8 | 7.3 |

## Size 80

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 5.64:1 | 310 | 143 | 107 | 204 | 101 | 75.3 |
| 6.11:1 | 286 | 134 | 100 | 188 | 96.1 | 71.7 |
| 7.04:1 | 249 | 124 | 92.5 | 163 | 81.4 | 60.7 |
| 7.63:1 | 229 | 116 | 86.5 | 150 | 78.1 | 58.2 |
| 8.86:1 | 197 | 102 | 76.1 | 130 | 64.0 | 47.7 |
| 9.60:1 | 182 | 100 | 74.6 | 120 | 62.6 | 46.7 |
| 11.10:1 | 158 | 81.6 | 61.8 | 104 | 51.3 | 38.2 |
| 12.00:1 | 146 | 79.6 | 59.3 | 96 | 50.1 | 37.3 |
| 13.80:1 | 127 | 65.7 | 49.0 | 83 | 41.3 | 30.8 |
| 14.90:1 | 117 | 64.1 | 47.8 | 77 | 40.3 | 30.0 |
| 16.70:1 | 105 | 54.3 | 40.5 | 68 | 34.1 | 25.4 |
| 18.10:1 | 97 | 52.8 | 39.3 | 64 | 33.3 | 24.8 |
| 20.50:1 | 85 | 44.8 | 33.4 | 56 | 28.1 | 21.0 |
| 22.20:1 | 79 | 43.0 | 32.0 | 52 | 27.1 | 20.2 |
| 24.00:1 | 73 | 38.2 | 28.5 | 48 | 24.0 | 17.9 |
| 25.90:1 | 68 | 36.9 | 27.5 | 44 | 23.2 | 17.3 |
| 31.30:1 | 56 | 30.5 | 22.7 | 37 | 19.2 | 14.3 |

## Size 90

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 5.17:1 | 338 | 214 | 159 | 222 | 153 | 114 |
| 5.60:1 | 312 | 203 | 151 | 205 | 147 | 110 |
| 6.76:1 | 259 | 180 | 134 | 170 | 130 | 97.0 |
| 7.32:1 | 239 | 172 | 128 | 157 | 124 | 92.5 |
| 8.33:1 | 210 | 159 | 118 | 138 | 115 | 85.8 |
| 9.02:1 | 194 | 149 | 111 | 127 | 108 | 80.5 |
| 10.40:1 | 169 | 138 | 103 | 111 | 97.4 | 72.6 |
| 11.20:1 | 156 | 130 | 97 | 103 | 93.7 | 69.9 |
| 12.80:1 | 137 | 120 | 89 | 90 | 79.4 | 59.2 |
| 13.90:1 | 126 | 112 | 83 | 83 | 76.7 | 57.2 |
| 16.00:1 | 109 | 100 | 74 | 72 | 63.0 | 47.0 |
| 17.30:1 | 101 | 97.1 | 72.4 | 66 | 61.6 | 45.9 |
| 18.70:1 | 94 | 85.8 | 64.0 | 61 | 53.9 | 40.2 |
| 20.20:1 | 87 | 84.5 | 63.0 | 57 | 53.1 | 39.6 |
| 22.90:1 | 76 | 70.1 | 52.3 | 50 | 44.0 | 32.8 |
| 24.80:1 | 71 | 68.8 | 51.3 | 46 | 43.3 | 32.3 |
| 27.20:1 | 64 | 52.3 | 39.0 | 42 | 32.9 | 24.5 |
| 29.40:1 | 60 | 51.9 | 38.7 | 39 | 32.6 | 24.3 |
| 35.10:1 | 50 | 39.8 | 29.6 | 33 | 25.0 | 18.6 |

## Size 100

| Gear Ratio | 1750 RPM Input | | | 1150 RPM Input | | |
|---|---|---|---|---|---|---|
| | Output RPM | Max HP | Max kW | Output RPM | Max HP | Max kW |
| 4.92:1 | 356 | 359 | 267 | 234 | 259 | 193 |
| 5.33:1 | 328 | 339 | 252 | 216 | 244 | 182 |
| 6.52:1 | 268 | 300 | 223 | 176 | 215 | 160 |
| 7.07:1 | 247 | 279 | 208 | 163 | 200 | 149 |
| 8.35:1 | 210 | 253 | 188 | 138 | 181 | 135 |
| 9.05:1 | 193 | 240 | 179 | 127 | 172 | 128 |
| 10.10:1 | 173 | 220 | 167 | 114 | 161 | 120 |
| 10.90:1 | 160 | 207 | 154 | 105 | 151 | 112 |
| 12.50:1 | 140 | 194 | 144 | 92 | 139 | 103 |
| 13.50:1 | 130 | 182 | 135 | 85 | 130 | 97.0 |
| 15.20:1 | 115 | 170 | 126 | 76 | 115 | 85.8 |
| 16.50:1 | 106 | 159 | 118 | 70 | 113 | 84.3 |
| 18.70:1 | 94 | 138 | 103 | 61 | 94.8 | 70.7 |
| 20.20:1 | 87 | 128 | 95.5 | 57 | 92.6 | 69.0 |
| 22.20:1 | 79 | 107 | 79.8 | 52 | 72.2 | 53.8 |
| 24.10:1 | 73 | 107 | 79.8 | 48 | 72.9 | 54.3 |
| 29.60:1 | 59 | 74 | 55.2 | 39 | 50.0 | 37.3 |

## Motor Shaft Height Reference Tables

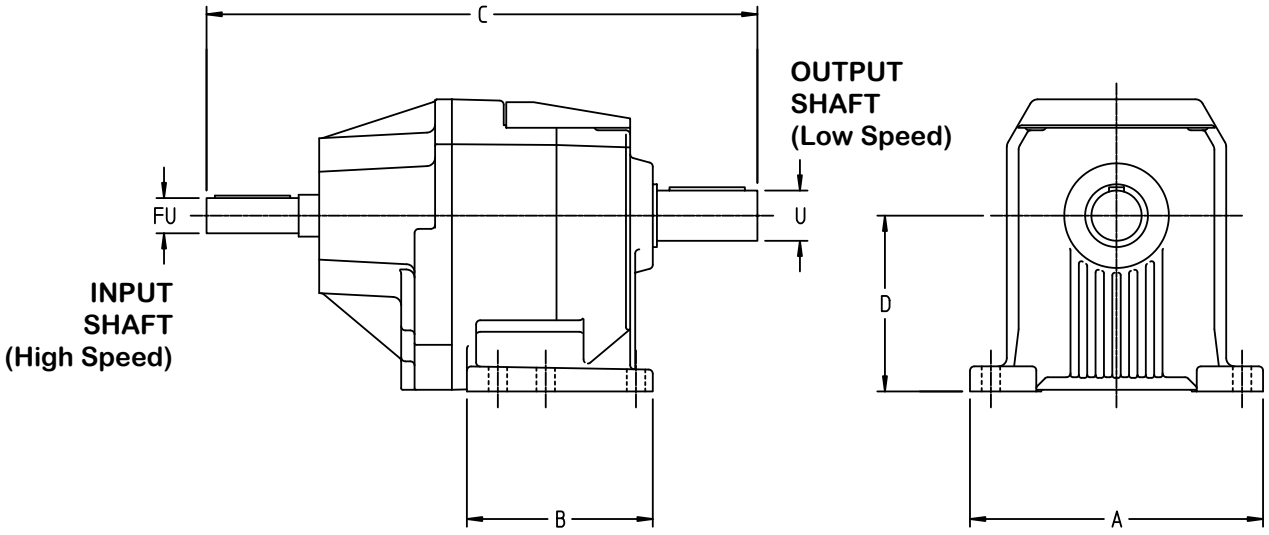
| NEMA Motors | | |
|---|---|---|
| Frame | In | mm |
| 42 | 2.625 | 64.3 |
| 48 | 3 | 73.5 |
| 56 | 3.5 | 85.8 |
| 143/145T | 3.5 | 85.8 |
| 182/184T | 4.5 | 110.3 |
| 213/215T | 5.25 | 128.6 |
| 254/256T | 6.25 | 153.1 |
| 284/286T | 7 | 171.5 |
| 324/326T | 8 | 196.0 |
| 364/365T | 9 | 220.5 |
| 404/405T | 10 | 245.0 |
| 444/5/7/9T | 11 | 269.5 |

| IEC Motors | | |
|---|---|---|
| Frame | in | mm |
| 63 | 2.480 | 63 |
| 71 | 2.800 | 71 |
| 80 | 3.150 | 80 |
| 90 | 3.543 | 90 |
| 100 | 3.937 | 100 |
| 112 | 4.409 | 112 |
| 132 | 5.197 | 132 |
| 160 | 6.299 | 160 |
| 180 | 7.087 | 180 |
| 200 | 7.874 | 200 |
| 225 | 8.858 | 225 |
| 250 | 9.843 | 250 |
| 280 | 11.025 | 280 |
| 315 | 12.400 | 315 |
| 355 | 13.980 | 355 |

**NOTE:**
Solid input shaft standard (requires flexible coupling and guard).
Close-coupled motor mounts available on sizes indicated.

# Dimensions - In-Line Reducers - Solid Input Shaft

Dimensions are based on mm, estimated inches are provided for your reference.




| Size | | A | B | C | D |
|---|---|---|---|---|---|
| 11 | in | 5.12 | 4.21 | 9.90 | 3.35 |
| | mm | 130 | 107 | 251 | 85 |
| 21 | in | 6.10 | 5.39 | 12.75 | 3.94 |
| | mm | 155 | 137 | 324 | 100 |
| 31 | in | 7.48 | 6.14 | 14.09 | 4.33 |
| | mm | 190 | 156 | 358 | 110 |
| 35 | in | 8.07 | 6.61 | 16.32 | 4.53 |
| | mm | 205 | 168 | 414.5 | 115 |
| 41 | in | 8.50 | 7.30 | 16.71 | 5.12 |
| | mm | 216 | 185.5 | 424.5 | 130 |
| 51 | in | 10.63 | 7.87 | 17.75 | 6.10 |
| | mm | 270 | 200 | 450.9 | 155 |
| 61 | in | 11.81 | 9.13 | 20.37 | 7.68 |
| | mm | 300 | 232 | 517 | 195 |
| 70 | in | 13.78 | 8.74 | 25.89 | 8.27 |
| | mm | 350 | 222 | 657.5 | 210 |
| 80 | in | 17.32 | 10.91 | 28.29 | 9.84 |
| | mm | 440 | 277 | 718.5 | 250 |
| 90 | in | 20.47 | 13.35 | 36.63 | 11.81 |
| | mm | 520 | 339 | 930.5 | 300 |
| 100 | in | 22.05 | 15.31 | 40.37 | 13.58 |
| | mm | 560 | 389 | 1025 | 345 |

| Size | | U | FU |
|---|---|---|---|
| 11 | in | ¾ | ⅝ |
| 21 | in | 1 | ¾ |
| 31 | in | 1-⅛ | ¾ |
| 35 | in | 1-⅜ | 1 |
| 41 | in | 1-⅜ | 1 |
| 51 | in | 1-9/16 | 1 |
| 61 | in | 2 | 1-⅛ |
| 70 | in | 2-⅜ | 1-⅝ |
| 80 | in | 3-⅛ | 1-⅝ |
| 90 | in | 3-⅝ | 2-⅛ |
| 100 | in | 4-⅜ | 2-⅛ |

**NOTE:**

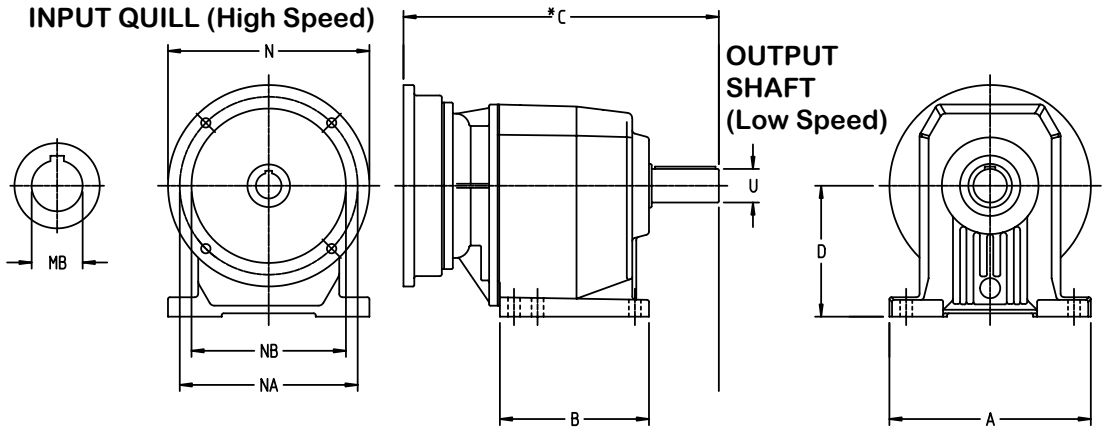
Sizes 11 - 41 come factory filled with synthetic lubricant and are “lubed for life.”

Sizes 11, 21, and 31 with unpainted aluminum housings.

Sizes 35 - 100 with painted cast iron housings.

# Dimensions - In-Line Reducers - Close-Coupled

Dimensions are based on mm, estimated inches are provided for your reference.




| Size | | A | B | D | U |
|---|---|---|---|---|---|
| 11 | in | 5.12 | 4.21 | 3.35 | 0.750 |
| | mm | 130 | 107 | 85 | n.a. |
| 21 | in | 6.10 | 5.39 | 3.94 | 1.000 |
| | mm | 155 | 137 | 100 | n.a. |
| 31 | in | 7.48 | 6.14 | 4.33 | 1.125 |
| | mm | 190 | 156 | 110 | n.a. |
| 35 | in | 8.07 | 6.61 | 4.53 | 1.375 |
| | mm | 205 | 168 | 115 | n.a. |
| 41 | in | 8.50 | 7.30 | 5.12 | 1.375 |
| | mm | 216 | 185.5 | 130 | n.a. |
| 51 | in | 10.63 | 7.87 | 6.10 | 1.562 |
| | mm | 270 | 200 | 155 | n.a. |
| 61 | in | 11.81 | 9.13 | 7.68 | 2.000 |
| | mm | 300 | 232 | 195 | n.a. |

| NEMA FRAME | | N | NA | NB | MB |
|---|---|---|---|---|---|
| 56C | in | 6.496 | 5.875 | 4.50 | .625 |
| 143TC, 145TC | in | 6.496 | 5.875 | 4.50 | .875 |
| 182TC, 184TC | in | 8.996 | 7.250 | 8.50 | 1.125 |
| 213TC, 215TC | in | 8.996 | 7.250 | 8.50 | 1.375 |
| 254TC, 256TC | in | 13.780 | 7.250 | 8.500 | 1.625 |
| 284TC, 286TC | in | 13.780 | 9.000 | 10.500 | 1.875 |

| IEC FRAME | | N | NA | NB | MB |
|---|---|---|---|---|---|
| 63 | mm | 140 | 115 | 95 | 11 |
| 71 | mm | 160 | 130 | 110 | 14 |
| 80 | mm | 200 | 165 | 130 | 19 |
| 90 | mm | 200 | 165 | 130 | 24 |
| 100/112 | mm | 250 | 215 | 180 | 28 |
| 132 | mm | 300 | 265 | 230 | 38 |
| 160 | mm | 350 | 300 | 250 | 42 |
| 180 | mm | 350 | 300 | 250 | 48 |

## "C" Dimension "NEMA C" Frame

| Size | | 56C/ 143TC/ 145TC | 182/ 184TC | 213/ 215TC | 254/ 256 TC | 284/ 286 TC |
|---|---|---|---|---|---|---|
| 11 | in | 10.41 | 10.95 | n.a | n.a. | n.a. |
| | mm | 264.5 | 278 | | | |
| 21 | in | 11.57 | 12.10 | n.a. | n.a. | n.a. |
| | mm | 293.8 | 307.3 | | | |
| 31 | in | 12.89 | 13.39 | n.a. | n.a. | n.a. |
| | mm | 327.5 | 340 | | | |
| 35 | in | 13.62 | 14.15 | n.a. | n.a. | n.a. |
| | mm | 346 | 359.5 | | | |
| 41 | in | 14.04 | 14.57 | 16.02 | n.a. | n.a. |
| | mm | 356.5 | 370 | 407 | | |
| 51 | in | 15.03 | 15.56 | 16.80 | 19.83 | 20.01 |
| | mm | 381.8 | 395.3 | 426.8 | 503.8 | 508.3 |
| 61 | in | 17.11 | 17.65 | 18.89 | 21.37 | 21.56 |
| | mm | 434.7 | 448.2 | 479.7 | 542.8 | 547.6 |

## "C" Dimension IEC Frame

| Size | | 63 | 71 | 80 | 90 | 100 | 112 | 132 | 160 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | in | 9.63 | 9.63 | 10.39 | 10.39 | 10.79 | 10.79 | n.a. | n.a. | n.a. |
| | mm | 244.5 | 244.5 | 264 | 264 | 274 | 274 | | | |
| 21 | in | 10.75 | 10.75 | 11.52 | 11.52 | 11.91 | 11.91 | n.a. | n.a. | n.a. |
| | mm | 273 | 273 | 292.5 | 292.5 | 302.5 | 302.5 | | | |
| 31 | in | 12.11 | 12.11 | 12.88 | 12.88 | 13.27 | 13.27 | n.a. | n.a. | n.a. |
| | mm | 307.5 | 307.5 | 327 | 327 | 337 | 337 | | | |
| 35 | in | 12.84 | 12.84 | 13.60 | 13.60 | 14.00 | 14.00 | n.a. | n.a. | n.a. |
| | mm | 326 | 326 | 345.5 | 345.5 | 355.5 | 355.5 | | | |
| 41 | in | n.a. | 13.25 | 14.02 | 14.02 | 14.41 | 14.41 | 15.85 | n.a. | n.a. |
| | mm | | 336.5 | 356 | 356 | 366 | 366 | 402.5 | | |
| 51 | in | n.a. | 14.27 | 15.04 | 15.04 | 15.43 | 15.43 | 16.87 | 18.86 | 18.86 |
| | mm | | 362.5 | 382 | 382 | 392 | 392 | 428.5 | 479 | 479 |
| 61 | in | n.a. | n.a. | 16.54 | 16.54 | 16.89 | 16.89 | 18.37 | 20.35 | 20.35 |
| | mm | | | 420 | 420 | 429 | 429 | 466.5 | 517 | 517 |

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