

Gearmotors

Quick Reference – Stock Sub-FHP Gearmotors

AC Single & Three Phase

DC SCR & Low Voltage



Parallel Shaft
PZ Series
Gearmotors

Single Phase 115V
12-100 In-Lbs
Output Torque
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BODINE/BISON/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
10-100 In-Lbs
Output Torque
Low Voltage (12V)
36-100 In-Lbs torque
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P240 & P300 Series
Gearmotors

Single Phase 115/230V
43-391 In-Lbs
Output Torque
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BISON/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
27-353 In-Lbs
Output Torque
Low Voltage (12V)
113-353 In-Lbs torque
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OS300 Series
Gearmotors

Single Phase 115/230V
25-341 In-Lbs
Output Torque
Three Phase 230/460V
55-320 In-Lbs
Output Torque
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BODINE
DIRECT
INTERCHANGE

DC SCR 90V
and
Low Voltage (12V)
Output Torque
130-268 In-Lbs
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PE350 Series
Gearmotors

Single Phase 115/230V
70-1105 In-Lbs
Output Torque
Three Phase 230/460V
70-1105 In-Lbs
Output Torque
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BISON/DAYTON
DIRECT INTERCHANGE

DC SCR 90V
105-1112 In-Lbs
Output Torque
Low Voltage (12V)
320-1087 In-Lbs torque
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P1100 Series
Gearmotors

Single Phase 115/230V
14-113 In-Lbs
Output Torque
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BODINE/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
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Output Torque
Low Voltage (12V)
25-135 In-Lbs torque
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Right-Angle
Worm Type
10 & 13 Series
Gearmotors



Bravo Right Angle
Worm Type
12 Series
Gearmotors

DC SCR 90V
and
Low Voltage (12V)
Output Torque
46-134 In-Lbs
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Quick Reference – Stock Sub-FHP Washguard Gearmotors



P300 Series Gearmotors

DC SCR 90V
and
Low Voltage (12V)
Output Torque
44-353 In-Lbs
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PE350 Series Gearmotors

DC SCR 90V
and
Low Voltage (12V)
Output Torque
25-341 In-Lbs
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Right-Angle 13 Series Gearmotors

DC SCR 90V
and
Low Voltage (12V)
Output Torque
50-135 In-Lbs
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P240 Series Gearmotors

AC – Single Phase &
Three Phase
Washdown Duty
60-391 In-Lbs
Output Torque
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**BISON/DAYTON
DIRECT INTERCHANGE**



Right-Angle Worm Type 10 & 13 Series Gearmotors

AC – Single Phase &
Three Phase
Washdown Duty
23-220 In-Lbs
Output Torque
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**BODINE/DAYTON
DIRECT INTERCHANGE**

Stock Sub-FHP Three Phase Inverter Rated Gearmotors



Includes gearmotor series PZ, P240, PE350 and 13 series right-angle

Three Phase 230V
12-391 In-Lbs
Output Torque
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View On-line Technical Information



Gearmotors

Parallel Shaft - PZ Series - DC

SCR Rated - 10-100 In-Lbs Torque Low Voltage - 36-100 In-Lbs Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Precision machined in-line steel gears
- First stage steel helical gear followed by spur-type gears
- Lubrication is permanent semi-fluid grease, reducing possibility of leakage
- Output shafts have needle bearings for high load capacities
- Shafts are hardened steel
- Optional conduit box and PZ gearmotor mounting bracket available below

Application Notes:

- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- Overhung load capacities shown are at center of output shaft
- Model PZ gearmotors have the same mounting dimensions as Bodine model D and Z, Baldor/Boehm, Bison 100 gearmotors, and a number of Dayton gearmotors
- For additional information, see Bulletin 1830
- **Bodine/Baldor/Boehm/Bison/Dayton direct interchange**

SCR Rated - 10-100 In-Lbs Torque
Low Voltage - 36-100 In-Lbs Torque

90 & 180 Volts - TENV - PZ Series

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|------|------|--------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 4 | 40 | 1/40 | M1115002.00 | ✓ | 496 | 985.620 | PZ5-30A | 450 | 90 | 0.46 | 155 | 3.00 | 3.25 | 9.28 | 7.72 | S, US |
| | 40 | 1/40 | M1125046.00 | ✓ | 496 | 985.623 | PZ5-30A | 450 | 180 | 0.19 | 155 | 3.00 | 3.25 | 9.3 | 7.74 | S, US |
| 10 | 100 | 1/20 | M1115001.00 | ✓ | 496 | 985.621 | PZ4-30E | 180 | 90 | 0.54 | 155 | 3.00 | 3.25 | 9.28 | 7.72 | S, US |
| | 100 | 1/20 | M1125047.00 | ✓ | 496 | 985.624 | PZ4-30A | 180 | 180 | 0.31 | 155 | 3.00 | 3.25 | 9.3 | 7.74 | S, US |
| 20 | 100 | 1/20 | M1115000.00 | ✓ | 496 | 985.622 | PZ4-30E | 90 | 90 | 0.54 | 155 | 3.00 | 3.25 | 9.28 | 7.72 | S, US |
| | 100 | 1/20 | M1125048.00 | ✓ | 496 | 985.625 | PZ4-30A | 90 | 180 | 0.31 | 155 | 3.00 | 3.25 | 9.3 | 7.74 | S, US |
| 30 | 100 | 1/17 | M1125002.00 | ✓ | 539 | 985.627 | PZ3-30B | 60 | 90 | 0.8 | 155 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| | 100 | 1/17 | M1125037.00 | ✓ | 539 | 985.635 | PZ3-30B | 60 | 180 | 0.36 | 155 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| 60 | 56 | 1/17 | M1125003.00 | ✓ | 539 | 985.628 | PZ3-30B | 30 | 90 | 0.8 | 171 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| | 56 | 1/17 | M1125036.00 | ✓ | 539 | 985.634 | PZ3-30B | 30 | 180 | 0.36 | 171 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| 100 | 36 | 1/17 | M1125004.00 | ✓ | 539 | 985.626 | PZ3-30B | 18 | 90 | 0.8 | 171 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| | 36 | 1/17 | M1125035.00 | ✓ | 539 | 985.631 | PZ3-30B | 18 | 180 | 0.36 | 171 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| 150 | 24 | 1/17 | M1125005.00 | ✓ | 512 | 985.629 | PZ2-30B | 12 | 90 | 0.8 | 180 | 3.00 | 2.40 | 8.46 | 6.90 | S, US |
| | 24 | 1/17 | M1125034.00 | ✓ | 512 | 985.633 | PZ2-30B | 12 | 180 | 0.36 | 180 | 3.00 | 2.40 | 8.46 | 6.90 | S, US |
| 300 | 10 | 1/17 | M1125006.00 | ✓ | 512 | 985.630 | PZ2-30B | 6 | 90 | 0.8 | 180 | 3.00 | 2.40 | 8.46 | 6.90 | S, US |
| | 10 | 1/17 | M1125033.00 | ✓ | 512 | 985.632 | PZ2-30B | 6 | 180 | 0.36 | 180 | 3.00 | 2.40 | 8.46 | 6.90 | S, US |

Specifications are subject to change without notice

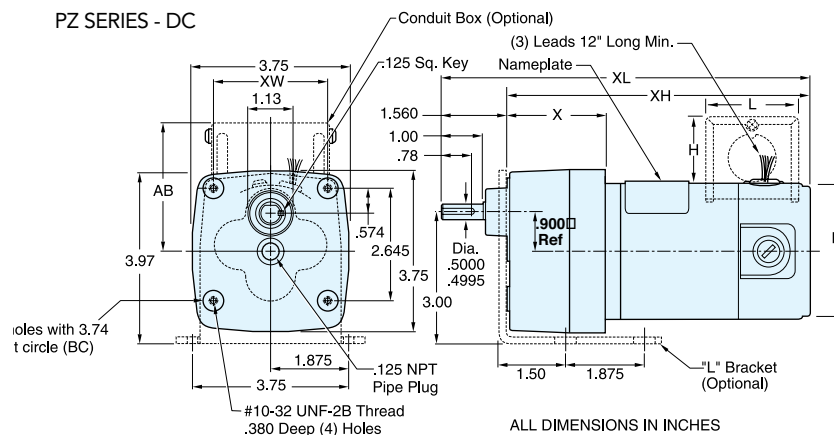
♥ Note listing on inside back flap

12 Volts - TENV - PZ Series

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|------|------|--------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 10 | 100 | 1/20 | M1125213.00 | ✓ | 549 | 985.653 | PZ4-30 | 180 | 12 | 2.7 | 155 | 3.00 | 3.25 | 9.28 | 7.72 | S, US |
| 30 | 100 | 1/17 | M1125214.00 | ✓ | 583 | 985.654 | PZ3-30 | 60 | 12 | 5.2 | 155 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |
| 55 | 56 | 1/17 | M1125215.00 | ✓ | 583 | 985.655 | PZ3-30 | 30 | 12 | 5.6 | 171 | 3.00 | 2.68 | 8.74 | 7.18 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap



Conduit Box Dimensions (IN)

| Frame | XW | AB | H | L |
|-------|------|------|------|------|
| 30/31 | 2.63 | 3.47 | 1.90 | 3.13 |

View On-line Technical Information



Gearmotors

Parallel Shaft - P300 Series - DC

SCR Rated - 27-353 In-Lbs. Torque

Low Voltage - 113-353 In-Lbs Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Precision machined in-line steel gears
- First stage steel helical gear followed by spur-type gears
- Lubrication is permanent semi-fluid grease, reducing possibility of leakage
- Output shafts have needle bearings for high load capacities
- Shafts are hardened steel
- Optional conduit box available

Application Notes:

- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- Overhung load capacities shown are at center of output shaft
- For additional information, see Bulletin 1830
- **Bison/Dayton direct interchange**

SCR Rated - 27-353 In-Lbs. Torque
Low Voltage - 113-353 In-Lbs Torque

90 & 180 Volts - TENV - P300 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|-------|-------|--------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 5 | 353 | 1/20 | M1115024.00 | ✓ | 710 | 985.602 | P303-30E | 336 | 90 | 0.54 | 565 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 9 | 268 | 1/20 | M1115025.00 | ✓ | 710 | 985.603 | P303-30E | 216 | 90 | 0.54 | 474 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 18 | 150 | 1/20 | M1115026.00 | ✓ | 710 | 985.604 | P303-30E | 103 | 90 | 0.54 | 385 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 20 | 140 | 1/20 | M1125092.00 | ✓ | 729 | 985.607 | P303-31E | 90 | 180 | 0.31 | 370 | 3.11 | 3.54 | 10.07 | 8.57 | S, US |
| 24 | 280 | 1/8 | M1125069.00 | ✓ | 729 | 985.611 | P303-30E | 76 | 90 | 1.3 | 353 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 31 | 220 | 1/8 | M1125070.00 | ✓ | 729 | 985.612 | P303-30E | 58 | 90 | 1.3 | 327 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 31 | 220 | 1/8 | M1125038.00 | ✓ | 729 | 985.617 | P303-30E | 58 | 180 | 0.66 | 327 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 34 | 82 | 1/20 | M1115027.00 | ✓ | 710 | 985.605 | P303-30E | 52 | 90 | 0.54 | 318 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 51 | 130 | 1/8 | M1125071.00 | ✓ | 670 | 985.615 | P302-30E | 35 | 90 | 1.3 | 277 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 51 | 130 | 1/8 | M1125039.00 | ✓ | 670 | 985.614 | P302-30E | 35 | 180 | 0.66 | 277 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 51 | 55 | 1/20 | M1115028.00 | ✓ | 654 | 985.606 | P302-30E | 35 | 90 | 0.54 | 281 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 61 | 113 | 1/8 | M1125072.00 | ✓ | 670 | 985.610 | P302-30E | 29 | 90 | 1.3 | 267 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 60 | 45 | 1/20 | M1125093.00 | ✓ | 670 | 985.609 | P302-31E | 29 | 180 | 0.31 | 267 | 3.11 | 3.54 | 10.07 | 8.57 | S, US |
| 94 | 77 | 1/8 | M1125073.00 | ✓ | 670 | 985.613 | P302-30E | 19 | 90 | 1.3 | 236 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 94 | 77 | 1/8 | M1125040.00 | ✓ | 670 | 985.618 | P302-30E | 19 | 180 | 0.66 | 236 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 109 | 27 | 1/20 | M1115029.00 | ✓ | 654 | 985.601 | P302-30E | 16 | 90 | 0.54 | 224 | 3.00 | 3.54 | 10.07 | 8.57 | S, US |
| 106 | 26 | 1/20 | M1125094.00 | C/A | 654 | 985.608 | P302-31E | 16 | 180 | 0.31 | 222 | 3.11 | 3.54 | 10.07 | 8.57 | S, US |
| 167 | 43 | 1/8 | M1125074.00 | ✓ | 670 | 985.616 | P302-30E | 11 | 90 | 1.3 | 197 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 170 | 43 | 1/8 | M1125041.00 | ✓ | 670 | 985.619 | P302-30E | 11 | 180 | 0.66 | 196 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |

C/A - Check Availability

♥ Note listing on inside back flap

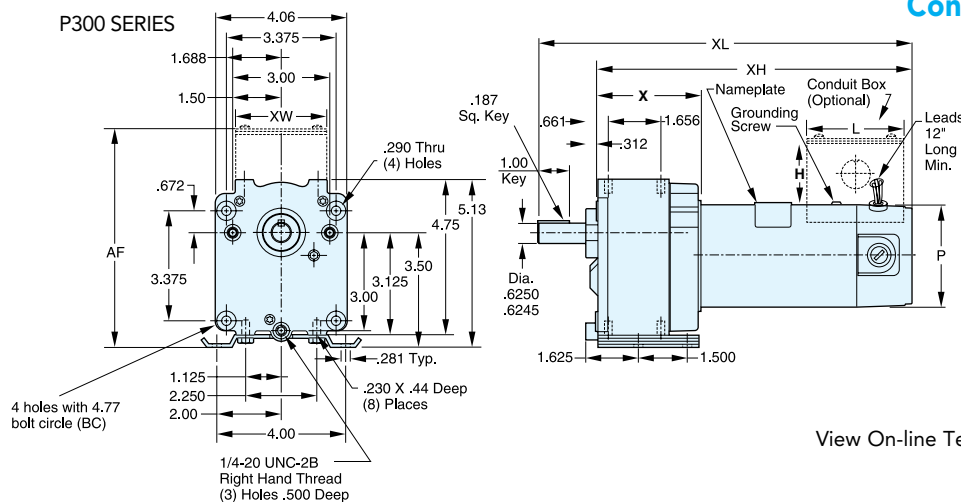
Specifications are subject to change without notice

12 Volt - TENV - P300 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|-------|-------|--------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 5 | 353 | 1/20 | M1125217.00 | ✓ | 729 | 985.657 | P303-30 | 336 | 12 | 5.6 | 565 | 3.00 | 3.85 | 10.07 | 8.57 | S, US |
| 31 | 220 | 1/8 | M1125218.00 | ✓ | 746 | 985.658 | P303-30 | 58 | 12 | 10.6 | 327 | 3.00 | 3.54 | 11.54 | 10.04 | S, US |
| 51 | 130 | 1/8 | M1125219.00 | ✓ | 686 | 985.659 | P302-30 | 35 | 12 | 10.3 | 277 | 3.00 | 3.23 | 11.54 | 10.04 | S, US |
| 61 | 113 | 1/8 | M1125220.00 | ✓ | 686 | 985.660 | P302-30 | 29 | 12 | 10.4 | 267 | 3.00 | 3.23 | 11.54 | 10.04 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap



Conduit Box Dimensions (IN.)

| Frame | AF | XW | H | L |
|-------|------|------|------|------|
| 30/31 | 6.26 | 2.63 | 1.90 | 3.13 |

View On-line Technical Information



Gearmotors

Off-Set Shaft Gearmotors - OS300 Series - DC

SCR Rated - 130-268 In-Lbs. Torque
Low Voltage - 130-268 In-Lbs. Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Precision machined in-line steel gears
- First stage steel helical gear followed by spur-type gears
- Lubrication is permanent semi-fluid grease, reducing possibility of leakage
- Output shafts have needle bearings for high load capacities
- Shafts are hardened steel
- Optional conduit box available

Application Notes:

- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- Overhung load capacities shown are at center of output shaft

Off-Set Shaft Gearmotors - OS300 Series - DC

SCR Rated - 130-268 In-Lbs. Torque
Low Voltage - 130-268 In-Lbs. Torque

90 Volts - TENV - OS300 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | | | ♥ Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|------|------|-------|---------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 9 | 268 | 1/20 | M1125251.00 | √ | 599 | 985.692 | OS303-30 | 210 | 90 | 0.54 | 474 | 3.00 | 2.81 | 4.50 | 8.52 | S, US |
| 19 | 150 | 1/20 | M1125250.00 | √ | 599 | 985.691 | OS303-30 | 103 | 90 | 0.56 | 385 | 3.00 | 2.81 | 4.50 | 8.52 | S, US |
| 24 | 280 | 1/8 | M1125249.00 | √ | 615 | 985.690 | OS303-30 | 76 | 90 | 1.3 | 353 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |
| 31 | 220 | 1/8 | M1125248.00 | √ | 615 | 985.689 | OS303-30 | 58 | 90 | 1.4 | 327 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |
| 51 | 130 | 1/8 | M1125247.00 | √ | 615 | 985.688 | OS303-30 | 35 | 90 | 1.4 | 277 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap

12 Volts - TENV - OS300 Series

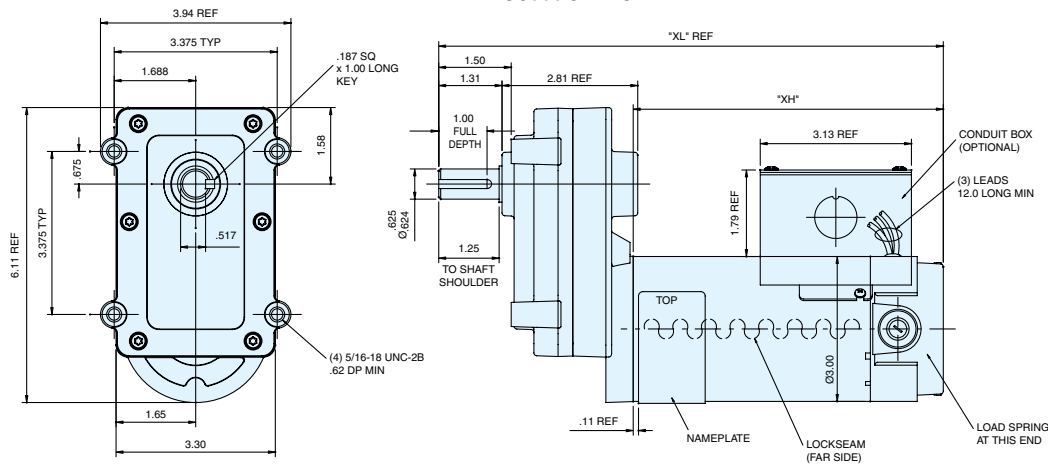
| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | | | ♥ Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|------|------|-------|---------|
| | | | | | | | | | | | | P | X | XL | XH | |
| 9 | 268 | 1/20 | M1125256.00 | √ | 615 | 985.697 | OS303-30 | 210 | 12 | 4.5 | 474 | 3.00 | 2.81 | 4.50 | 8.52 | S, US |
| 18 | 150 | 1/20 | M1125255.00 | √ | 615 | 985.696 | OS303-30 | 103 | 12 | 5 | 385 | 3.00 | 2.08 | 4.50 | 8.52 | S, US |
| 24 | 280 | 1/8 | M1125254.00 | √ | 629 | 985.695 | OS303-30 | 76 | 12 | 10.6 | 353 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |
| 31 | 220 | 1/8 | M1125253.00 | √ | 629 | 985.694 | OS303-30 | 58 | 12 | 10.6 | 327 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |
| 51 | 130 | 1/8 | M1125252.00 | C/A | 629 | 985.693 | OS303-30 | 35 | 12 | 10.3 | 277 | 3.00 | 2.81 | 6.42 | 10.45 | S, US |

C/A - Check Availability

♥ Note listing on inside back flap

Specifications are subject to change without notice

OS300 SERIES



ALL DIMENSIONS IN INCHES

View On-line Technical Information



DC Motors

Gearmotors

Ac / DC Controls

Accessories / Kits

Mods / Factory Options

X-Ref / Index

Tech Information

Terms / Warnings

Other Products

Gearmotors

PE350 Series - Parallel Shaft - DC

SCR Rated - 25-371 In-Lbs. Torque Low Voltage - 155-341 In-Lbs Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Rugged die cast aluminum gear housing for maximum gear and bearing support
- Precision machined gearing, hardened for maximum load capability
- All gearing designed and rated to AGMA class 9 standards, and to withstand momentary shock overload of 200%
- Oversized output bearings for greater overhung load capacity and long life
- High carbon alloy output shaft provides maximum strength and rigidity
- All needle bearing journals are precision ground after heat treating to provide maximum fit and finish
- Heavy duty industrial oil seals keep lubricant in and dirt out
- Gears and bearings are splash lubricated with permanent, heavy duty gear oil
- Optional conduit box available

Application Notes:

- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- Overhung load capacities shown are at center of output shaft
- **Bodine/Baldor direct interchange**

SCR Rated - 25-371 In-Lbs. Torque
Low Voltage - 155-341 In-Lbs Torque

90 & 180 Volts - TENV - PE350 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|-------|--------|
| | | | | | | | | | | | | XL | XH | |
| 7 | 330 | 1/8 | M1135106.00 | ✓ | 718 | M34D25NZ62 | P353-34 | 336 | 90 | 0.7 | 565 | 11.31 | 9.31 | S, US |
| | 330 | 1/8 | M1135139.00 | ✓ | 718 | M34D25NZ71 | P353-34 | 336 | 180 | 0.35 | 565 | 11.31 | 9.31 | S, US |
| 14 | 341 | 1/8 | M1135107.00 | ✓ | 718 | M34D25NZ61 | P353-34 | 180 | 90 | 1 | 465 | 11.31 | 9.31 | S, US |
| | 341 | 1/8 | M1135140.00 | ✓ | 718 | M34D25NZ72 | P353-34 | 180 | 180 | 0.5 | 465 | 11.31 | 9.31 | S, US |
| 21 | 371 | 1/4 | M1135117.00 | ✓ | 752 | M34D25NZ52 | P353-34 | 124 | 90 | 1.1 | 413 | 13.31 | 11.31 | S, US |
| | 371 | 1/4 | M1135141.00 | ✓ | 752 | M34D25NZ73 | P353-34 | 124 | 180 | 0.55 | 413 | 13.31 | 11.31 | S, US |
| 27 | 305 | 1/4 | M1135115.00 | ✓ | 752 | M34D25NZ51 | P353-34 | 91 | 90 | 1.5 | 374 | 13.31 | 11.31 | S, US |
| | 305 | 1/4 | M1135142.00 | ✓ | 752 | M34D25NZ74 | P353-34 | 91 | 180 | 0.75 | 374 | 13.31 | 11.31 | S, US |
| 42 | 280 | 1/4 | M1135108.00 | ✓ | 752 | M34D25NZ53 | P353-34 | 58 | 90 | 2.3 | 327 | 13.31 | 11.31 | S, US |
| | 280 | 1/4 | M1135143.00 | ✓ | 752 | M34D25NZ75 | P353-34 | 58 | 180 | 1.2 | 327 | 13.31 | 11.31 | S, US |
| 50 | 250 | 1/4 | M1135109.00 | ✓ | 752 | M34D25NZ54 | P353-34 | 50 | 90 | 2.3 | 315 | 13.31 | 11.31 | S, US |
| | 250 | 1/4 | M1135144.00 | ✓ | 752 | M34D25NZ76 | P353-34 | 50 | 180 | 1.2 | 315 | 13.31 | 11.31 | S, US |
| 62 | 220 | 1/4 | M1135110.00 | ✓ | 752 | M34D25NZ55 | P353-34 | 43 | 90 | 2.3 | 303 | 13.31 | 11.31 | S, US |
| | 220 | 1/4 | M1135145.00 | ✓ | 752 | M34D25NZ77 | P353-34 | 43 | 180 | 1.2 | 303 | 13.31 | 11.31 | S, US |
| 83 | 155 | 1/4 | M1135114.00 | ✓ | 710 | M34D25NZ57 | P352-34 | 29 | 90 | 2.3 | 267 | 13.31 | 11.31 | S, US |
| | 155 | 1/4 | M1135146.00 | ✓ | 710 | M34D25NZ78 | P352-34 | 29 | 180 | 1.2 | 267 | 13.31 | 11.31 | S, US |
| 125 | 100 | 1/4 | M1135111.00 | ✓ | 710 | M34D25NZ56 | P352-34 | 23 | 90 | 2 | 256 | 13.31 | 11.31 | S, US |
| | 100 | 1/4 | M1135147.00 | ✓ | 710 | M34D25NZ79 | P352-34 | 23 | 180 | 1 | 256 | 13.31 | 11.31 | S, US |
| 165 | 70 | 1/4 | M1135112.00 | ✓ | 710 | M34D25NZ58 | P352-34 | 15 | 90 | 2 | 232 | 13.31 | 11.31 | S, US |
| | 70 | 1/4 | M1135148.00 | ✓ | 710 | M34D25NZ80 | P352-34 | 15 | 180 | 1 | 232 | 13.31 | 11.31 | S, US |
| 250 | 45 | 1/4 | M1135116.00 | ✓ | 710 | M34D25NZ60 | P352-34 | 10 | 90 | 2 | 201 | 13.31 | 11.31 | S, US |
| | 45 | 1/4 | M1135149.00 | ✓ | 710 | M34D25NZ81 | P352-34 | 10 | 180 | 1 | 201 | 13.31 | 11.31 | S, US |
| 500 | 25 | 1/4 | M1135113.00 | ✓ | 710 | M34D25NZ59 | P352-34 | 5 | 90 | 2 | 194 | 13.31 | 11.31 | S, US |
| | 25 | 1/4 | M1135150.00 | ✓ | 710 | M34D25NZ82 | P352-34 | 5 | 180 | 1 | 194 | 13.31 | 11.31 | S, US |

Specifications are subject to change without notice

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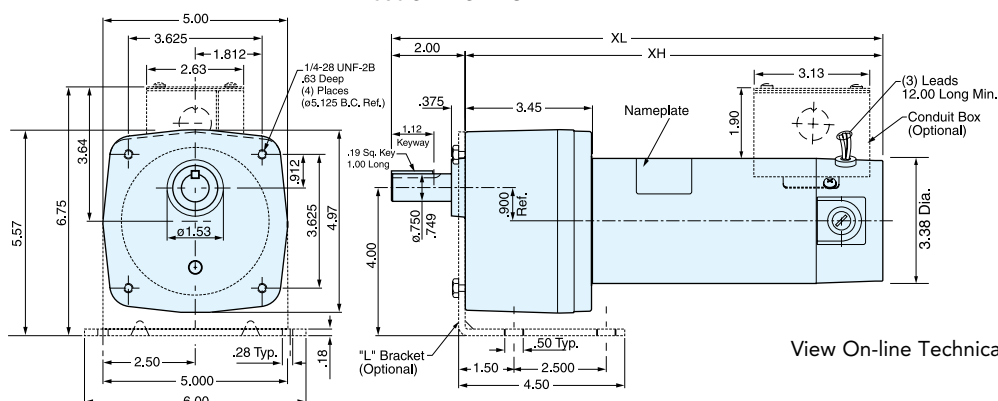
12 Volts - TENV - PE350 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|-------|--------|
| | | | | | | | | | | | | XL | XH | |
| 14 | 341 | 1/8 | M1135243.00 | ✓ | 733 | M34D25NZ154 | P353-34 | 180 | 12 | 8.7 | 465 | 11.05 | 9.05 | S, US |
| 42 | 325 | 1/4 | M1135244.00 | ✓ | 768 | M34D25NZ155 | P353-34 | 58 | 12 | 21 | 327 | 13.31 | 11.31 | S, US |
| 62 | 220 | 1/4 | M1135245.00 | ✓ | 768 | M34D25NZ156 | P353-34 | 43 | 12 | 21 | 303 | 13.31 | 11.31 | S, US |
| 83 | 155 | 1/4 | M1135246.00 | ✓ | 729 | M34D25NZ157 | P352-34 | 29 | 12 | 21 | 267 | 13.31 | 11.31 | S, US |

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Parallel Shaft - P1100 Series - DC

SCR Rated - 105-1112 In-Lbs. Torque
Low Voltage - 320-1087 In-Lbs. Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Rugged die cast aluminum gear housing for maximum gear and bearing support
- Precision machined gearing, hardened for maximum load capability
- All gearing designed and rated to AGMA class 9 standards, and to withstand momentary shock overload of 200%
- Oversized output bearings for greater overhung load capacity and long life
- High carbon alloy output shaft provides maximum strength and rigidity
- All needle bearing journals are precision ground after heat treating to provide maximum fit and finish
- Heavy duty industrial oil seals keep lubricant in and dirt out
- Gears and bearings are splash lubricated with permanent, heavy duty gear oil
- Conduit box included as standard

Application Notes:

- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- Overhung load capacities shown are at center of output shaft
- For additional information, see Bulletin 1830
- **Bison/Dayton direct interchange**

SCR Rated - 105-1112 In-Lbs. Torque
Low Voltage - 320-1087 In-Lbs. Torque

90 Volts - Totally Enclosed - Rigid Base - P1100 Series

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|-------|--------|
| | | | | | | | | | | | | XL | XH | |
| 8 | 1087 | 1/4 | 108700.00 | ✓ | 1224 | 4D17NZ17 | P1103-48 | 212 | 90 | 2.7 | 700 | 14.24 | 12.74 | S, US |
| 12 | 1030 | 1/4 | 108701.00 | ✓ | 1224 | 4D17NZ18 | P1103-48 | 143 | 90 | 2.7 | 700 | 14.24 | 12.74 | S, US |
| 18 | 750 | 1/4 | 108702.00 | ✓ | 1224 | 4D17NZ19 | P1103-48 | 95 | 90 | 2.7 | 700 | 14.24 | 12.74 | S, US |
| 42 | 353 | 1/4 | 108703.00 | ✓ | 1194 | 4D17NZ20 | P1102-48 | 42 | 90 | 2.7 | 650 | 14.24 | 12.74 | S, US |
| 60 | 238 | 1/4 | 108704.00 | ✓ | 1194 | 4D17NZ21 | P1102-48 | 29 | 90 | 2.7 | 625 | 14.24 | 12.74 | S, US |
| 92 | 160 | 1/4 | 108705.00 | ✓ | 1194 | 4D17NZ22 | P1102-48 | 19 | 90 | 2.7 | 575 | 14.24 | 12.74 | S, US |
| 135 | 105 | 1/4 | 108706.00 | ✓ | 1194 | 4D17NZ23 | P1102-48 | 13 | 90 | 2.7 | 525 | 14.24 | 12.74 | S, US |
| 18 | 1112 | 1/2 | 108707.00 | ✓ | 1323 | 4D17FZ23 | P1103-48 | 95 | 90 | 5 | 700 | 16.49 | 14.99 | S, US |
| 33 | 822 | 1/2 | 108708.00 | ✓ | 1323 | 4D17FZ24 | P1103-48 | 53 | 90 | 5 | 650 | 16.49 | 14.99 | S, US |
| 42 | 705 | 1/2 | 108709.00 | ✓ | 1298 | 4D17FZ25 | P1102-48 | 42 | 90 | 5 | 650 | 16.49 | 14.99 | S, US |
| 60 | 476 | 1/2 | 108710.00 | ✓ | 1298 | 4D17FZ26 | P1102-48 | 29 | 90 | 5 | 625 | 16.49 | 14.99 | S, US |
| 92 | 320 | 1/2 | 108711.00 | ✓ | 1298 | 4D17FZ27 | P1102-48 | 19 | 90 | 5 | 575 | 16.49 | 14.99 | S, US |
| 135 | 210 | 1/2 | 108712.00 | ✓ | 1298 | 4D17FZ28 | P1102-48 | 13 | 90 | 5 | 525 | 16.49 | 14.99 | S, US |

Specifications are subject to change without notice

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12 Volts - Totally Enclosed - Rigid Base - P1100 Series

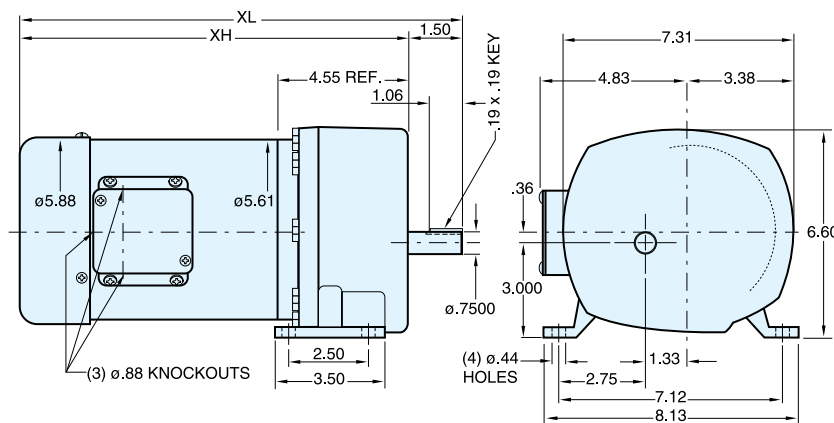
| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|-------|--------|
| | | | | | | | | | | | | XL | XH | |
| 8 | 1087 | 1/4 | 108729.00 | C/A | 1250 | 4D17NZ43 | P1103-48 | 212 | 12 | 21 | 700 | 13.74 | 12.24 | S, US |
| 60 | 238 | 1/4 | 108730.00 | ✓ | 1223 | 4D17NZ44 | P1102-48 | 29 | 12 | 21 | 625 | 13.74 | 12.24 | S, US |
| 42 | 705 | 1/2 | 108731.00 | ✓ | 1323 | 4D17FZ52 | P1102-48 | 42 | 12 | 40 | 650 | 15.99 | 14.49 | S, US |
| 92 | 320 | 1/2 | 108732.00 | C/A | 1323 | 4D17FZ53 | P1102-48 | 19 | 12 | 40 | 575 | 15.99 | 14.49 | S, US |

C/A - Check Availability

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P1100 SERIES - DC



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Right-Angle DC Gearmotors

SCR Rated - 5-135 In-Lbs. Torque
Low Voltage - 25-135 In-Lbs. Torque



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

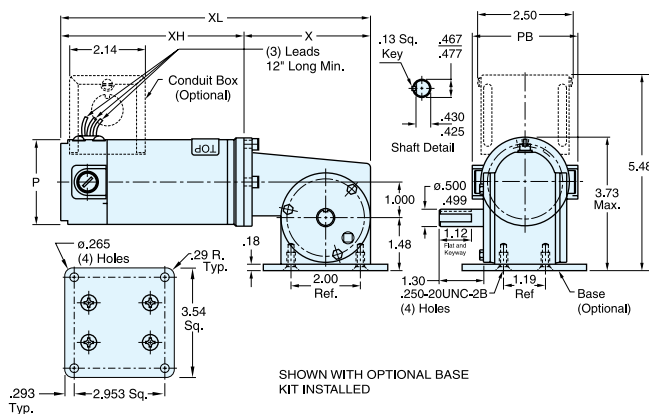
Features:

- Worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation
- Precision machined aluminum gear housing
- Lubrication is permanent with an oil bath
- Gearbox has all ball bearings
- Output shaft is field interchangeable from left hand to right hand style by reassembly
- Double output shaft available as a factory option
- Optional conduit box available
- Optional gearbox base available (10 Series only)

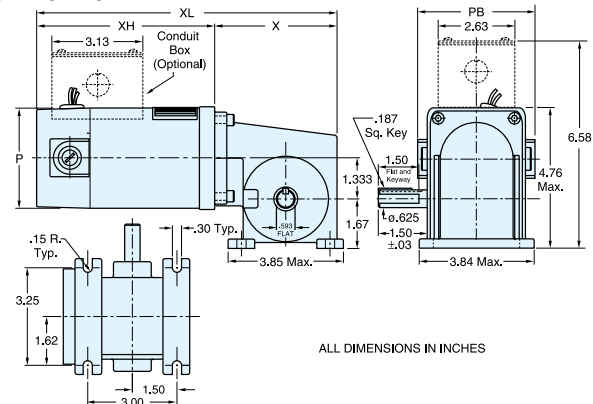
Application Notes:

- These right-angle gearmotors have a lubrication breather positioned for horizontal mounting. For other mountings, the breather plug must be reoriented by using a 90 deg 1/8" NPT taper pipe elbow (See drawing). Elbow not available from LEESON
- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Overhung load capacities shown are at center of output shaft
- For additional information, see Bulletin 1830

10 SERIES - DC



13 SERIES - DC



Right-Angle DC Gearmotors

SCR Rated - 5-135 In-Lbs. Torque & Low Voltage - 25-135 In-Lbs. Torque

90 & 180 Volts - TENV - Right-Angle

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|----|-----|-------|------|-------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 42 | 22 | 1/17 | M1115018.00 | ✓ | 556 | 985.504 | 10F60-25D | 60 | 90 | 0.9 | 185 | 2.5 | 3 | 3.6 | 8.79 | 5.19 | S, US |
| 62 | 19 | 1/17 | M1115019.00 | ✓ | 556 | 985.505 | 10F40-25D | 40 | 90 | .87 | 185 | 2.5 | 3 | 3.6 | 8.79 | 5.19 | S, US |
| 125 | 16 | 1/17 | M1115020.00 | ✓ | 556 | 985.506 | 10F20-25D | 20 | 90 | .85 | 185 | 2.5 | 3 | 3.6 | 8.79 | 5.19 | S, US |
| 250 | 10 | 1/17 | M1115021.00 | ✓ | 556 | 985.509 | 10F10-25D | 10 | 90 | 1.0 | 185 | 2.5 | 3 | 3.6 | 8.79 | 5.19 | S, US |
| 500 | 5 | 1/17 | M1115022.00 | ✓ | 556 | 985.507 | 10F05-25D | 5 | 90 | 1.0 | 185 | 2.5 | 3 | 3.6 | 8.79 | 5.19 | S, US |
| 42 | 30 | 1/12 | M1135053.00 | ✓ | 556 | M34D25NZ30 | 13F60-34A | 60 | 180 | 0.53 | 235 | 3.38 | 4 | 4.5 | 9.64 | 5.14 | S, US |
| 62 | 35 | 1/12 | M1135054.00 | ✓ | 556 | M34D25NZ31 | 13F40-34A | 40 | 180 | 0.53 | 235 | 3.38 | 4 | 4.5 | 9.64 | 5.14 | S, US |
| 125 | 18 | 1/12 | M1135055.00 | C/A | 556 | CM34D25NZ32 | 13F20-34A | 20 | 180 | 0.53 | 235 | 3.38 | 4 | 4.5 | 9.64 | 5.14 | S, US |
| 250 | 10 | 1/12 | M1135056.00 | C/A | 556 | M34D25NZ47 | 13F10-34A | 10 | 180 | 0.53 | 235 | 3.38 | 4 | 4.5 | 9.64 | 5.14 | S, US |
| 500 | 5 | 1/12 | M1135057.00 | C/A | 556 | M34D25NZ48 | 13F05-34A | 5 | 180 | 0.53 | 235 | 3.38 | 4 | 4.5 | 9.64 | 5.14 | S, US |
| 42 | 80 | 1/8 | M1135069.00 | ✓ | 641 | M34D25NZ18 | 13F60-34C | 60 | 90 | 1.4 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 62 | 70 | 1/8 | M1135038.00 | ✓ | 641 | M34D25NZ26 | 13F40-34C | 40 | 90 | 1.4 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 62 | 70 | 1/8 | M1135058.00 | ✓ | 641 | M34D25NZ26 | 13F40-34C | 40 | 180 | 0.7 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 125 | 45 | 1/8 | M1135039.00 | ✓ | 641 | M34D25NZ7 | 13F20-34C | 20 | 90 | 1.4 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 125 | 45 | 1/8 | M1135059.00 | ✓ | 641 | M34D25NZ27 | 13F20-34C | 20 | 180 | 0.7 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 250 | 25 | 1/8 | M1135040.00 | ✓ | 641 | M34D25NZ8 | 13F10-34C | 10 | 90 | 1.4 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 250 | 25 | 1/8 | M1135060.00 | ✓ | 641 | M34D25NZ28 | 13F10-34C | 10 | 180 | 0.7 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 500 | 13 | 1/8 | M1135041.00 | ✓ | 641 | M34D25NZ9 | 13F05-34C | 5 | 90 | 1.4 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 500 | 13 | 1/8 | M1135061.00 | C/A | 641 | M34D25NZ29 | 13F05-34C | 5 | 180 | 0.7 | 235 | 3.38 | 4 | 4.5 | 10.64 | 6.14 | S, US |
| 62 | 135 | 1/4 | M1135042.00 | ✓ | 691 | M34D25NZ10 | 13F40-34G | 40 | 90 | 2.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 62 | 135 | 1/4 | M1135062.00 | ✓ | 691 | M34D25NZ33 | 13F40-34G | 40 | 180 | 1.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 83 | 125 | 1/4 | M1135043.00 | ✓ | 691 | M34D25NZ11 | 13F30-34G | 30 | 90 | 2.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 83 | 125 | 1/4 | M1135063.00 | ✓ | 691 | M34D25NZ34 | 13F30-34G | 30 | 180 | 1.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 125 | 90 | 1/4 | M1135044.00 | ✓ | 691 | M34D25NZ12 | 13F20-34G | 20 | 90 | 2.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 125 | 90 | 1/4 | M1135064.00 | ✓ | 691 | M34D25NZ35 | 13F20-34G | 20 | 180 | 1.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 250 | 50 | 1/4 | M1135045.00 | ✓ | 691 | M34D25NZ13 | 13F10-34G | 10 | 90 | 2.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 250 | 50 | 1/4 | M1135065.00 | ✓ | 691 | M34D25NZ36 | 13F10-34G | 10 | 180 | 1.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 500 | 30 | 1/4 | M1135046.00 | ✓ | 691 | M34D25NZ14 | 13F05-34G | 5 | 90 | 2.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |
| 500 | 30 | 1/4 | M1135066.00 | ✓ | 691 | M34D25NZ37 | 13F05-34G | 5 | 180 | 1.3 | 235 | 3.38 | 4 | 4.5 | 12.64 | 8.14 | S, US |

C/A - Check Availability

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Specifications are subject to change without notice

12 Volts - TENV - Right-Angle Series

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|-----|-------|------|-------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 42 | 80 | 1/8 | M1135249.00 | C/A | 654 | M34D25NZ158 | 13F60-34 | 60 | 12 | 11 | 235 | 3.38 | 4.21 | 4.5 | 10.39 | 5.89 | S, US |
| 250 | 25 | 1/8 | M1135250.00 | ✓ | 654 | M34D25NZ159 | 13F10-34 | 10 | 12 | 11 | 235 | 3.38 | 4.21 | 4.5 | 10.39 | 5.89 | S, US |
| 62 | 135 | 1/4 | M1135251.00 | ✓ | 700 | M34D25NZ160 | 13F40-34 | 40 | 12 | 21 | 235 | 3.38 | 4.21 | 4.5 | 12.64 | 8.14 | S, US |
| 125 | 90 | 1/4 | M1135252.00 | ✓ | 700 | M34D25NZ161 | 13F20-34 | 20 | 12 | 21 | 235 | 3.38 | 4.21 | 4.5 | 12.64 | 8.14 | S, US |

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Bravo™ Series 12 SUB-FHP - DC Right-Angle Gearmotors



General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation
- Single piece die cast aluminum alloy housing is vacuum impregnated with Resinon RT for protection and sealing
- Light weight gearbox combines high tensile strength along with being precision machined for alignment of bearings and gearing
- High temperature Nitrile seals for optimum seal life
- Gearbox provided with solid output shaft, but can be converted to a hollow output shaft. Simply remove the solid shaft by removing the Snap rings
- T-base feet provided are removable to convert to face mounting
- Optional conduit box available

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**Bravo™ Series 12 SUB-FHP - DC
Right-Angle Gearmotors**

90 Volts - Totally Enclosed - Right-Angle

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Enclosure | Gearmotor Type & Frame | Ratio to 1 | Full Arm. Volts DC | Load Amps. DC | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|-----------|------------------------|------------|--------------------|---------------|-----------|
| 28 | 125 | 1/8 | M1135292.00 | ✓ | 655 | M34D17NZ31 | TENV | 12B60-34D | 61 | 90 | 1.6 | S, US, 12 |
| 45 | 87 | 1/8 | M1135291.00 | C/A | 655 | M34D17NZ30 | TENV | 12B39-34D | 39 | 90 | 1.6 | S, US, 12 |
| 58 | 158 | 1/4 | M1135290.00 | ✓ | 692 | M34D17FZ7 | TEFC | 12B30-34G | 30 | 90 | 2.8 | S, US, 13 |
| 90 | 100 | 1/4 | M1135289.00 | ✓ | 692 | M34D17FZ6 | TEFC | 12B19-34G | 19 | 90 | 2.6 | S, US, 13 |
| 115 | 85 | 1/4 | M1135288.00 | C/A | 692 | M34D17FZ5 | TEFC | 12B15-34G | 15 | 90 | 2.6 | S, US, 13 |
| 167 | 61 | 1/4 | M1135287.00 | ✓ | 692 | M34D17FZ4 | TEFC | 12B11-34G | 10.6 | 90 | 2.6 | S, US, 13 |
| 250 | 46 | 1/4 | M1135286.00 | ✓ | 692 | M34D17FZ3 | TEFC | 12B7-34G | 7 | 90 | 2.6 | S, US, 13 |

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12 Volt - TENV - Right-Angle

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Enclosure | Gearmotor Type & Frame | Ratio to 1 | Full Arm. Volts DC | Load Amps. DC | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|-----------|------------------------|------------|--------------------|---------------|--------|
| 27 | 134 | 1/8 | M1135285.00 | C/A | 681 | M34D17NZ29 | TENV | 12B60-34C | 61 | 12 | 14 | S, US |
| 45 | 94 | 1/8 | M1135284.00 | ✓ | 681 | M34D17NZ28 | TENV | 12B39-34C | 39 | 12 | 15 | S, US |
| 58 | 158 | 1/4 | M1135297.00 | C/A | 713 | M34D17NZ36 | TENV | 12B30-34F | 30 | 12 | 24 | S, US |
| 90 | 100 | 1/4 | M1135296.00 | C/A | 713 | M34D17NZ35 | TENV | 12B19-34F | 19 | 12 | 24 | S, US |
| 115 | 85 | 1/4 | M1135295.00 | ✓ | 713 | M34D17NZ34 | TENV | 12B15-34F | 15 | 12 | 23 | S, US |
| 167 | 61 | 1/4 | M1135294.00 | C/A | 713 | M34D17NZ33 | TENV | 12B11-34F | 10.6 | 12 | 21 | S, US |
| 250 | 46 | 1/4 | M1135293.00 | C/A | 713 | M34D17NZ32 | TENV | 12B7-34F | 7 | 12 | 23 | S, US |

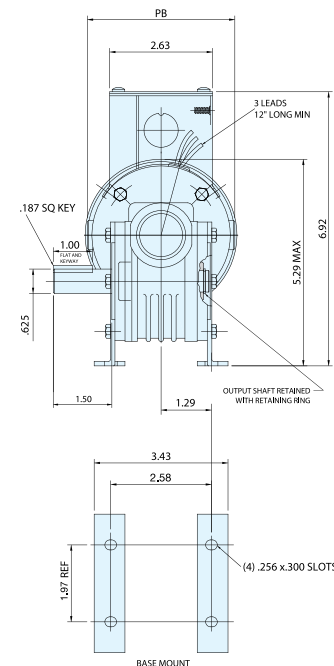
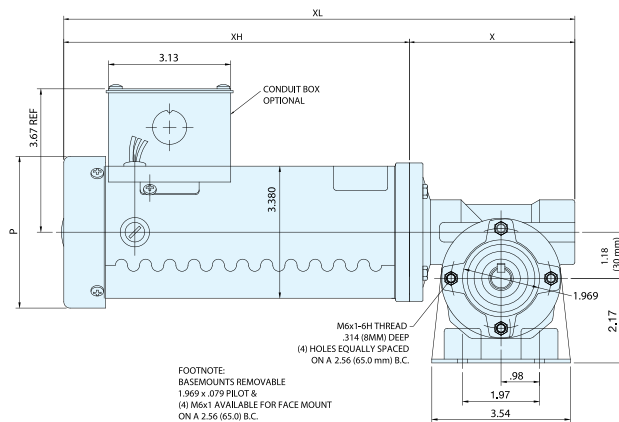
C/A - Check Availability

♥ Note listing on inside back flap

Specifications are subject to change without notice

Notes:

- 1 Conduit box not supplied with the gearmotor. Mounting provisions are provided and can use conduit box kit catalog number M1760007 found on page 179.
- 2 For solid double output shaft, consult factory.



SCR 90 Volt Rated (IN)

| P | X | XL | XH | PB |
|------|------|-------|------|------|
| 3.38 | 4.32 | 11.07 | 6.75 | 4.00 |
| 3.38 | 4.32 | 11.07 | 6.75 | 4.00 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |
| 3.88 | 4.32 | 13.16 | 8.84 | 3.76 |

Low Voltage 12V (IN)

| P | X | XL | XH | PB |
|------|------|-------|------|------|
| 3.38 | 4.32 | 10.57 | 6.25 | 4.21 |
| 3.38 | 4.32 | 10.57 | 6.25 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |
| 3.38 | 4.32 | 11.82 | 7.5 | 4.21 |

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Gearmotors

IP55 Washguard Gearmotors - P300 Series - DC

General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Gearbox output shafts are coated with Mirolon 3300 fortified Teflon for superior corrosion resistance
- Frame, endshields, armature and interior components protected by enamel and polyester compounds for resistance to moisture, acids, alkalies and oil
- Precision machined in-line steel gears
- First stage steel helical gear followed by spur-type gears
- Lubrication is permanent semi-fluid grease, reducing possibility of leakage
- Output shafts have needle bearings for high load capacities
- Gearbox Shafts are hardened steel
- Cast conduit box with threaded conduit holes and Nitrile gaskets keep water out
- Conduit box cover is made from 304 stainless steel
- For any condensation that may accumulate inside the motor, a one-way stainless steel vapor vent is provided
- All hardware is stainless steel
- Painted with white epoxy for superior corrosion resistance and protection
- Machined fits between the endbells and motor frame are sealed with gaskets
- Thru-bolt heads and nuts sealed with fiber washers
- O-rings under each threaded brush cover

Application Notes:

- Extended life in wet, high humidity applications
- Design repels water from entering motor
- Internal components protected against rust and corrosion
- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Overhung load capacities shown are at center of output shaft
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- USDA Approved white epoxy finish
- **Bison/Dayton direct interchange**

IP55 Washguard Gearmotors - P300 Series - DC



90 Volts - TENV - P300 Series

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|-----|------|-------|-------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 5 | 353 | 1/20 | M1125261.00 | ✓ | 825 | M31D17VZ5 | P303-31 | 336 | 90 | 0.81 | 565 | 3.13 | 3.8 | 3.54 | 10.44 | 8.94 | S, US |
| 31 | 220 | 1/8 | M1125262.00 | ✓ | 848 | M31D17VZ6 | P303-31 | 58 | 90 | 1.6 | 327 | 3.13 | 3.8 | 3.54 | 11.94 | 10.44 | S, US |
| 51 | 130 | 1/8 | M1125263.00 | ✓ | 784 | M31D17VZ7 | P302-31 | 35 | 90 | 1.6 | 277 | 3.13 | 3.8 | 3.54 | 11.94 | 10.44 | S, US |
| 94 | 77 | 1/8 | M1125264.00 | ✓ | 784 | M31D17VZ8 | P302-31 | 19 | 90 | 1.6 | 236 | 3.13 | 3.8 | 3.54 | 11.94 | 10.44 | S, US |
| 167 | 43 | 1/8 | M1125265.00 | ✓ | 784 | M31D17VZ9 | P302-31 | 11 | 90 | 1.6 | 197 | 3.13 | 3.8 | 3.54 | 11.94 | 10.44 | S, US |

C/A - Check Availability

♥ Note listing on inside back flap

Specifications are subject to change without notice

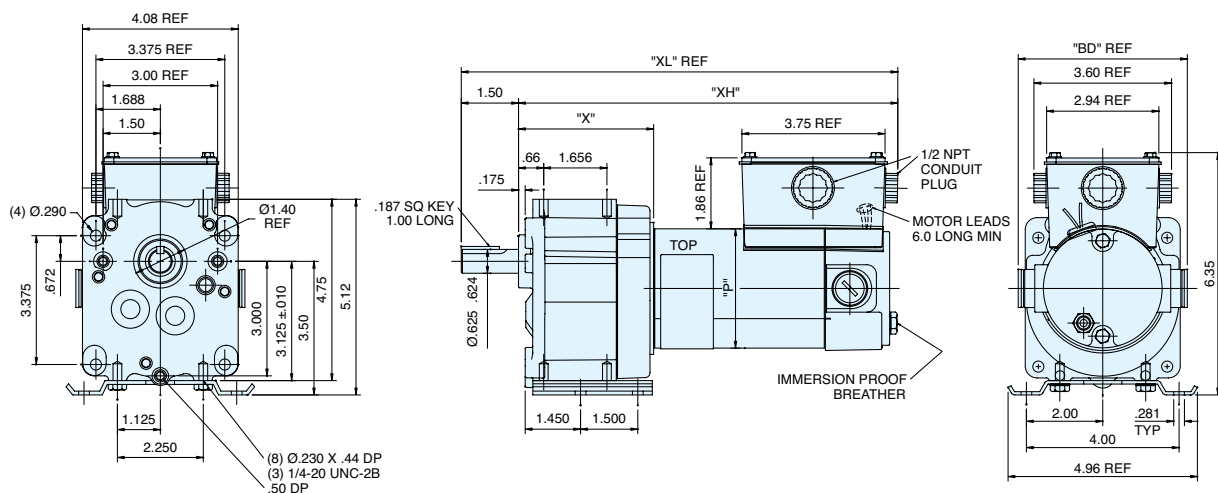
12 Volts - TENV - P300 Series

| Output RPM | F.L. Torque (Lb.in.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|------|-------|------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 5 | 353 | 1/20 | M1125266.00 | ✓ | 848 | M31D17VZ10 | P303-31 | 336 | 12 | 6.4 | 565 | 3.13 | 3.8 | 3.54 | 10.44 | 8.94 | S, US |
| 31 | 220 | 1/8 | M1125267.00 | ✓ | 869 | M31D17VZ11 | P303-31 | 58 | 12 | 11 | 327 | 3.13 | 4.43 | 3.54 | 11.44 | 9.94 | S, US |

C/A - Check Availability

♥ Note listing on inside back flap

Specifications are subject to change without notice



Gearmotors

IP55 Washguard Gearmotors - PE350 - DC

General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- Gearbox output shafts are coated with Mirolon 3300 fortified Teflon for superior corrosion resistance
- Frame, endshields, armature and interior components protected by enamel and polyester compounds for resistance to moisture, acids, alkalies and oil
- Precision machined in-line steel gears
- First stage steel helical gear followed by spur-type gears
- Lubrication is permanent semi-fluid grease, reducing possibility of leakage
- Output shafts have needle bearings for high load capacities
- Gearbox Shafts are hardened steel
- Cast conduit box with threaded conduit holes and Nitrile gaskets keep water out
- Conduit box cover is made from 304 stainless steel
- For any condensation that may accumulate inside the motor, a one-way stainless steel vapor vent is provided
- All hardware is stainless steel
- Painted with white epoxy for superior corrosion resistance and protection
- Machined fits between the endbells and motor frame are sealed with gaskets
- Thru-bolt heads and nuts sealed with fiber washers
- O-rings under each threaded brush cover

Application Notes:

- Extended life in wet, high humidity applications
- Design repels water from entering motor
- Internal components protected against rust and corrosion
- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Overhung load capacities shown are at center of output shaft
- Motor's stall torque could exceed recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. This issue is even more critical for low voltage motors, typically no controller is used since motor is connected directly to a battery, so some type of current limit or fusing should be considered
- USDA Approved white epoxy finish
- **Bodine/Baldor direct interchange**



90 Volts - TENV - PE350 Series - Parallel Shaft

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|-----|------|-------|-------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 14 | 341 | 1/8 | M1125268.00 | ✓ | 854 | M31D25VZ1 | P353-31 | 180 | 90 | 1.5 | 465 | 3.13 | 3.8 | 3.45 | 11.84 | 9.84 | S, US |
| 42 | 280 | 1/4 | M1125269.00 | ✓ | 884 | M32D25VZ1 | P353-32 | 58 | 90 | 2.6 | 327 | 3.25 | 3.8 | 3.45 | 13.84 | 11.84 | S, US |
| 83 | 155 | 1/4 | M1125270.00 | ✓ | 861 | M32D25VZ2 | P353-32 | 29 | 90 | 2.6 | 267 | 3.25 | 3.8 | 3.45 | 13.84 | 11.84 | S, US |
| 250 | 45 | 1/4 | M1125271.00 | ✓ | 861 | M32D25VZ3 | P352-32 | 10 | 90 | 2.6 | 201 | 3.25 | 3.8 | 3.45 | 13.84 | 11.84 | S, US |
| 500 | 25 | 1/4 | M1125272.00 | ✓ | 861 | M32D25VZ4 | P352-32 | 5 | 90 | 2.6 | 194 | 3.25 | 3.8 | 3.45 | 13.84 | 11.84 | S, US |

Specifications are subject to change without notice

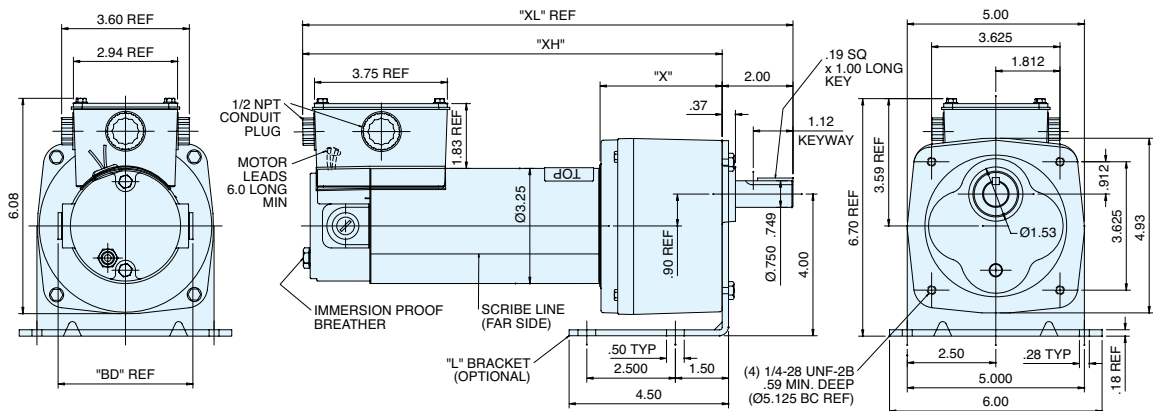
♥ Note listing on inside back flap

12 Volts - TENV - PE350 Series - Parallel Shaft

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Over-hung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|----------------------|---------------------|------|------|-------|-------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 14 | 341 | 1/8 | M1125273.00 | ✓ | 876 | M31D25VZ2 | P353-31 | 180 | 12 | 12 | 465 | 3.13 | 4.43 | 3.45 | 11.58 | 9.58 | S, US |
| 42 | 325 | 1/4 | M1125274.00 | ✓ | 925 | M32D25VZ5 | P353-32 | 58 | 12 | 20 | 327 | 3.25 | 4.43 | 3.45 | 13.84 | 11.84 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap



Gearmotors

IP55 Washguard Gearmotors - Right Angle - DC

General Specifications - SCR Rated Gearmotors:

- Performance matched for continuous duty service over 60:1 speed range
- Constant torque throughout the range when powered by a full-wave unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4

General Specifications - Low Voltage Gearmotors:

- Performance matched for continuous duty service
- Designed for battery power or can be used with a low voltage controller with form factor up to 1.05

Features:

- 303 Stainless Steel gearbox output shaft
- Frame, endshields, armature and interior components protected by enamel and polyester compounds for resistance to moisture, acids, alkalies and oil
- Cast conduit box with threaded conduit holes and Nitrile gaskets keep water out
- Conduit box cover is made from 304 stainless steel
- For any condensation that may accumulate inside the motor, a one-way stainless steel vapor vent is provided
- All hardware is stainless steel
- Painted with white epoxy for superior corrosion resistance and protection
- Machined fits between the endbells and motor frame are sealed with gaskets
- Thru-bolt heads and nuts sealed with fiber washers
- O-rings under each threaded brush cover
- Worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation
- Precision machined aluminum gear housing
- Lubrication is permanent with an oil bath
- Gearbox has all ball bearings
- Output shaft is field interchangeable from left hand to right hand style by reassembly
- Double output shaft available as a factory option

Application Notes:

- These right-angle gearmotors have a lubrication breather positioned for horizontal mounting. For other mountings, the breather plug must be reoriented by using a 90 deg 1/8" NPT taper pipe elbow (See drawing). Elbow not available from LEESON
- These gearmotors are designed for mounting at any angle, but motor below the reducer should be avoided to prevent leakage of lubricant into the motor should the motor shaft seal fail
- Overhung load capacities shown are at center of output shaft
- For additional information, see Bulletin 1830

IP55 Washguard Gearmotors - Right Angle - DC



90 Volt - TENV - Right-Angle

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|-----|-----|-------|------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 42 | 80 | 1/8 | M1125275.00 | ✓ | 854 | M31D25VZ3 | 13F60-31 | 60 | 90 | 2.2 | 235 | 3.13 | 3.8 | 4.5 | 10.86 | 6.36 | S, US |
| 250 | 25 | 1/8 | M1125276.00 | ✓ | 854 | M31D25VZ4 | 13F10-31 | 10 | 90 | 2.2 | 235 | 3.13 | 3.8 | 4.5 | 10.86 | 6.36 | S, US |
| 62 | 135 | 1/4 | M1125277.00 | ✓ | 861 | M32D25VZ6 | 13F40-32 | 40 | 90 | 3.7 | 235 | 3.25 | 3.8 | 4.5 | 12.86 | 8.36 | S, US |
| 125 | 90 | 1/4 | M1125278.00 | ✓ | 861 | M32D25VZ7 | 13F20-32 | 20 | 90 | 3.7 | 235 | 3.25 | 3.8 | 4.5 | 12.86 | 8.36 | S, US |
| 250 | 50 | 1/4 | M1125279.00 | ✓ | 861 | M32D25VZ8 | 13F10-32 | 10 | 90 | 3.7 | 235 | 3.25 | 3.8 | 4.5 | 12.86 | 8.36 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap

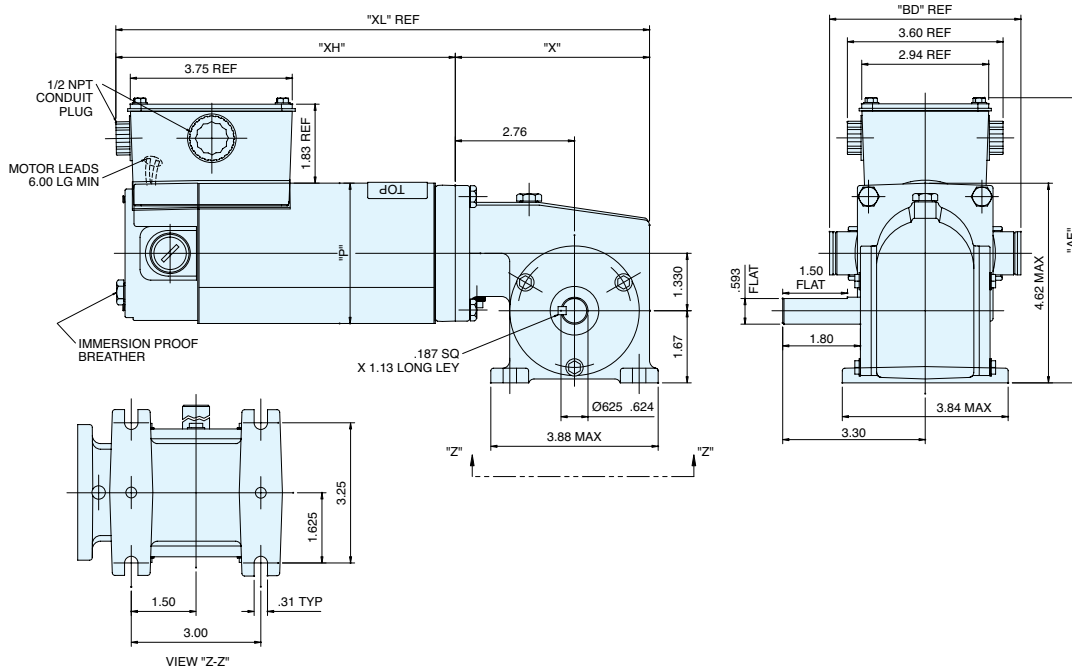
12 Volts - TENV - Right-Angle

| Output RPM | F.L. Torque (Lb.In.) | Input HP | Catalog Number | Stock | List Price | Model Number | Gearmotor Type & Frame | Ratio to 1 | Arm. Volts DC | F.L. Amps DC | Overhung Load (lb.) | Dimensions (inches) | | | | | ♥Notes |
|------------|----------------------|----------|----------------|-------|------------|--------------|------------------------|------------|---------------|--------------|---------------------|---------------------|------|-----|-------|------|--------|
| | | | | | | | | | | | | P | PB | X | XL | XH | |
| 62 | 135 | 1/4 | M1125280.00 | ✓ | 818 | M32D25VZ9 | 13F40-32 | 40 | 12 | 28 | 235 | 3.25 | 4.43 | 4.5 | 12.36 | 7.86 | S, US |
| 125 | 90 | 1/4 | M1125281.00 | ✓ | 818 | M32D25VZ10 | 13F20-32 | 20 | 12 | 28 | 235 | 3.25 | 4.43 | 4.5 | 12.36 | 7.86 | S, US |

Specifications are subject to change without notice

♥ Note listing on inside back flap

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