

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
Page 102

BODINE/BISON/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
10-100 In-Lbs
Output Torque
Low Voltage (12V)
36-100 In-Lbs torque
Page 92



**P240 & P300 Series
Gearmotors**

Single Phase 115/230V
43-391 In-Lbs
Output Torque
Page 103

BISON/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
27-353 In-Lbs
Output Torque
Low Voltage (12V)
113-353 In-Lbs torque
Page 93



**OS300 Series
Gearmotors**

DC SCR 90V
and
Low Voltage (12V)
Output Torque
130-268 In-Lbs
Page 94



**PE350 Series
Gearmotors**

Single Phase 115/230V
25-341 In-Lbs
Output Torque
Three Phase 230/460V
55-320 In-Lbs
Output Torque
Page 104

**BODINE
DIRECT
INTERCHANGE**

DC SCR 90 & 180V
25-371 In-Lbs
Output Torque
Low Voltage (12V)
155-341 In-Lbs torque
Page 95



**P1100 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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**Right-Angle
Worm Type
10 & 13 Series
Gearmotors**

Single Phase 115/230V
14-113 In-Lbs
Output Torque
Page 106

BODINE/DAYTON
DIRECT INTERCHANGE

DC SCR 90 & 180V
5-135 In-Lbs
Output Torque
Low Voltage (12V)
25-135 In-Lbs torque
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**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 IP55 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
Page 100



**Right-Angle
13 Series
Gearmotors**

DC SCR 90V
and
Low Voltage (12V)
Output Torque
50-135 In-Lbs
Page 101

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
Page 108



SUB-FHP DC GEARMOTORS

PARALLEL SHAFT GEARMOTORS

**SCR RATED:
10-100 In-Lbs Torque**

**LOW VOLTAGE:
36-100 In-Lbs Torque**

Electrical Specifications:

SCR Rated Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty service over a 60:1 speed range. All have 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.



Low Voltage Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

Precision machined in-line steel gears, with a 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.

Conduit box not included with motor. Optional conduit box and PZ gearmotor mounting bracket shown on page 107.

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.

The motor's stall torque could exceed recommended full load torques. If this service is anticipated, a current limiting device should be used. This issue is even more critical for low voltage motors, typically no controller is used since motor connected directly to 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/BISON/DAYTON
DIRECT INTERCHANGE**

PZ SERIES DC • SCR RATED PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm. Volts DC	F.L. Amps DC	Over-hung Load (Lb.)	DIMENSIONS			
										P	X	XL	XH
4	40	1/40	M1115002	\$404	PZ5-30A	450	90	0.46	155	3.00	3.25	9.28	7.72
4	40	1/40	M1125046	404	PZ5-30A	450	180	0.19	155	3.00	3.25	9.30	7.74
10	100	1/20	M1115001	404	PZ4-30E	180	90	0.54	155	3.00	3.25	9.28	7.72
10	100	1/20	M1125047	404	PZ4-30A	180	180	0.31	155	3.00	3.25	9.30	7.74
20	100	1/20	M1115000	404	PZ4-30E	90	90	0.54	155	3.00	3.25	9.28	7.72
20	100	1/20	M1125048	404	PZ4-30A	90	180	0.31	155	3.00	3.25	9.30	7.74
30	100	1/17	M1125002	439	PZ3-30B	60	90	0.80	155	3.00	2.68	8.74	7.18
30	100	1/17	M1125037	439	PZ3-30B	60	180	0.36	155	3.00	2.68	8.74	7.18
60	56	1/17	M1125003	439	PZ3-30B	30	90	0.80	171	3.00	2.68	8.74	7.18
60	56	1/17	M1125036	439	PZ3-30B	30	180	0.36	171	3.00	2.68	8.74	7.18
100	36	1/17	M1125004	439	PZ3-30B	18	90	0.80	171	3.00	2.68	8.74	7.18
100	36	1/17	M1125035	439	PZ3-30B	18	180	0.36	171	3.00	2.68	8.74	7.18
150	24	1/17	M1125005	417	PZ2-30B	12	90	0.80	180	3.00	2.40	8.46	6.90
150	24	1/17	M1125034	417	PZ2-30B	12	180	0.36	180	3.00	2.40	8.46	6.90
300	10	1/17	M1125006	417	PZ2-30B	6	90	0.80	180	3.00	2.40	8.46	6.90
300	10	1/17	M1125033	417	PZ2-30B	6	180	0.36	180	3.00	2.40	8.46	6.90

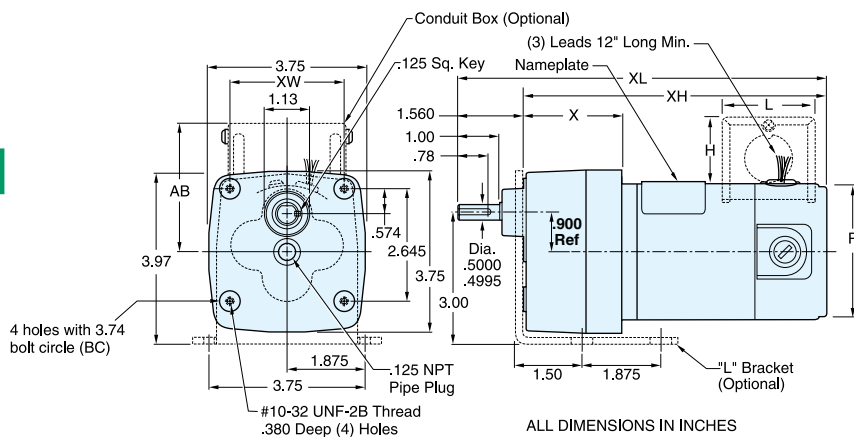
▲ Use "S" discount symbol.

PZ SERIES DC • LOW VOLTAGE (12V) PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm. Volts DC	F.L. Amps DC	Over-hung Load (Lb.)	DIMENSIONS			
										P	X	XL	XH
10	100	1/20	M1125213	\$447	PZ4-30	180	12	2.7	155	3.00	3.25	9.28	7.72
30	100	1/17	M1125214	474	PZ3-30	60	12	5.2	155	3.00	2.68	8.74	7.18
55	56	1/17	M1125215	474	PZ3-30	30	12	5.6	171	3.00	2.68	8.74	7.18

▲ Use "S" discount symbol.

PZ SERIES - DC



CONDUIT BOX DIMENSIONS (IN.)

FRAME	XW	AB	H	L
30/31	2.63	3.47	1.90	3.13

QUICK REFERENCE

- GEARMOTOR CROSS REFERENCE Page 163
- "L" BRACKET AND CONDUIT BOX. 107
- SPEEDMASTER® CONTROLS. 121

**SCR RATED:
27-353 In-Lbs Torque**

**LOW VOLTAGE:
113-353 In-Lbs Torque**

Electrical Specifications:

SCR Rated Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty service over a 60:1 speed range. All have 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.



Low Voltage Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

Precision machined in-line steel gears, with a 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.

Conduit box not included with motor. Optional conduit box shown on page 107.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the motor's shaft seal fail.

Overhung load capacities shown are at center of output shaft.

The motor's stall torque exceeds recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. Model 300 gearmotors have the same mounting dimensions as Bison's 300 and many Dayton gearmotors.

For additional information, see Bulletin 1830.

**P300 SERIES DC • SCR RATED
PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR**

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm. Volts DC	F.L. Amps. DC	Over-hung Load (Lb.)	DIMENSIONS			
										P	X	XL	XH
5	353	1/20	M1115024	\$578	P303-30E	336	90	0.54	565	3.00	3.54	10.07	8.57
9	268	1/20	M1115025	578	P303-30E	216	90	0.54	474	3.00	3.54	10.07	8.57
18	150	1/20	M1115026	578	P303-30E	103	90	0.54	385	3.00	3.54	10.07	8.57
20	140	1/20	M1125092	593	P303-31E	90	180	0.31	370	3.11	3.54	10.07	8.57
24	280	1/8	M1125069	593	P303-30E	76	90	1.30	353	3.00	3.54	11.54	10.04
31	220	1/8	M1125070	593	P303-30E	58	90	1.30	327	3.00	3.54	11.54	10.04
31	220	1/8	M1125038	593	P303-30E	58	180	0.66	327	3.00	3.54	11.54	10.04
34	82	1/20	M1115027	578	P303-30E	52	90	0.54	318	3.00	3.54	10.07	8.57
51	130	1/8	M1125071	545	P302-30E	35	90	1.30	277	3.00	3.54	11.54	10.04
51	130	1/8	M1125039	545	P302-30E	35	180	0.66	277	3.00	3.54	11.54	10.04
51	55	1/20	M1115028	532	P302-30E	35	90	0.54	281	3.00	3.54	10.07	8.57
61	113	1/8	M1125072	545	P302-30E	29	90	1.30	267	3.00	3.54	11.54	10.04
60	45	1/20	M1125093	545	P302-31E	29	180	0.31	267	3.11	3.54	10.07	8.57
94	77	1/8	M1125073	545	P302-30E	19	90	1.30	236	3.00	3.54	11.54	10.04
94	77	1/8	M1125040	545	P302-30E	19	180	0.66	236	3.00	3.54	11.54	10.04
109	27	1/20	M1115029	532	P302-30E	16	90	0.54	224	3.00	3.54	10.07	8.57
106	26	1/20	M1125094	532	P302-31E	16	180	0.31	222	3.11	3.54	10.07	8.57
167	43	1/8	M1125074	545	P302-30E	11	90	1.30	197	3.00	3.54	11.54	10.04
170	43	1/8	M1125041	545	P302-30E	11	180	0.66	196	3.00	3.54	11.54	10.04

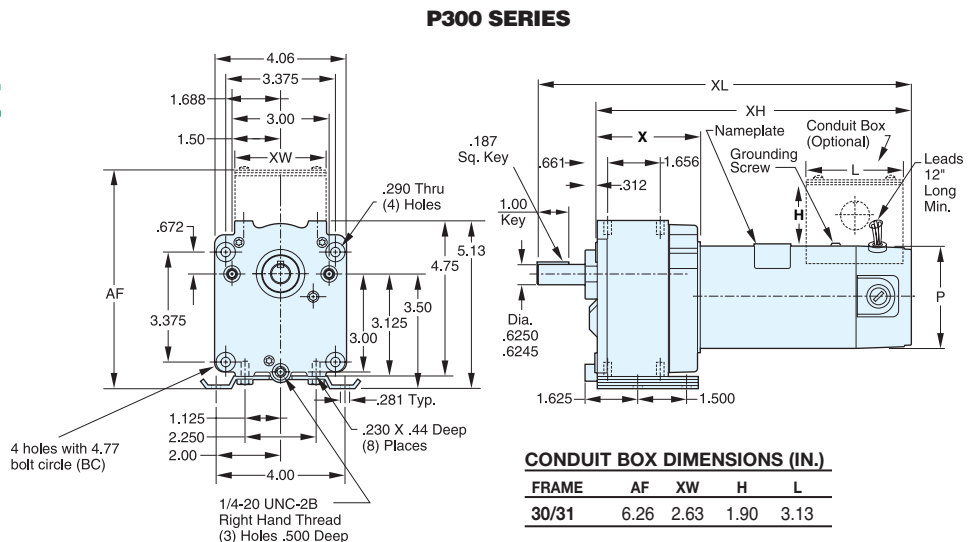
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**P300 SERIES DC • LOW VOLTAGE (12V)
PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR**

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm. Volts DC	F.L. Amps. DC	Over-hung Load (Lb.)	DIMENSIONS			
										P	X	XL	XH
5	353	1/20	M1125217	\$593	P303-30	336	12	5.6	565	3.00	3.85	10.07	8.57
31	220	1/8	M1125218	607	P303-30	58	12	10.6	327	3.00	3.54	11.54	10.04
51	130	1/8	M1125219	558	P302-30	35	12	10.3	277	3.00	3.23	11.54	10.04
61	113	1/8	M1125220	558	P302-30	29	12	10.4	267	3.00	3.23	11.54	10.04

▲ Use "S" discount symbol.

**BISON/DAYTON
DIRECT INTERCHANGE**





SUB-FHP DC GEARMOTORS

OFF-SET SHAFT GEARMOTORS

SCR RATED: 130-268 In-Lbs Torque

LOW VOLTAGE: 130-268 In-Lbs Torque

Electrical Specifications:

SCR Rated Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty service over a 60:1 speed range. All have 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.



Low Voltage Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

Precision machined steel gears, with a 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.

Conduit box **not** included with motor. Optional conduit box shown on page 107.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the motor's shaft seal fail.

Overhung load capacities shown are at center of output shaft.

The motor's stall torque exceeds recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage.

OS300 SERIES DC • SCR RATED

OFF-SET SHAFT • TENV • 1.0 SERVICE FACTOR

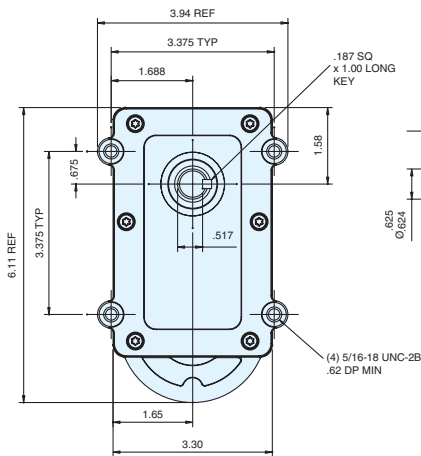
Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio	Arm Volts DC	F.L. Amps DC	Overhung Load Lbs.	P	X	XL	XH
9	268	1/20	M1125251	\$487	OS303-30	210	90	.54	474	3.00	2.81	4.50	8.52
19	150	1/20	M1125250	487	OS303-30	103	90	.56	385	3.00	2.81	4.50	8.52
24	280	1/8	M1125249	500	OS303-30	76	90	1.3	353	3.00	2.81	6.42	10.45
31	220	1/8	M1125248	500	OS303-30	58	90	1.4	327	3.00	2.81	6.42	10.45
51	130	1/8	M1125247	500	OS303-30	35	90	1.4	277	3.00	2.81	6.42	10.45

OS300 SERIES DC • LOW VOLTAGE (12V)

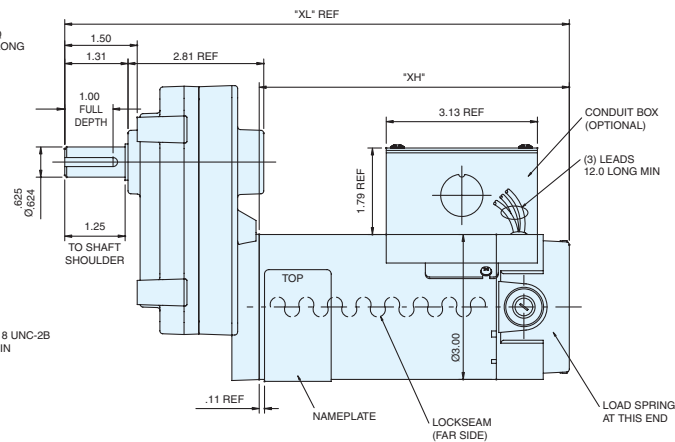
OFF-SET SHAFT • TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio	Arm Volts DC	F.L. Amps DC	Overhung Load Lbs.	P	X	XL	XH
9	268	1/20	M1125256	\$500	OS303-30	210	12	4.5	474	3.00	2.81	4.50	8.52
18	150	1/20	M1125255	500	OS303-30	103	12	5.0	385	3.00	2.081	4.50	8.52
24	280	1/8	M1125254	512	OS303-30	76	12	10.6	353	3.00	2.81	6.42	10.45
31	220	1/8	M1125253	512	OS303-30	58	12	10.6	327	3.00	2.81	6.42	10.45
51	130	1/8	M1125252	512	OS303-30	35	12	10.3	277	3.00	2.81	6.42	10.45

▲ Use "S" discount symbol.



OS300 SERIES



ALL DIMENSIONS IN INCHES

**SCR RATED:
25-371 In-Lbs Torque**
**LOW VOLTAGE:
155-341 In-Lbs Torque**

Electrical Specifications:

SCR Rated Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty service over a 60:1 speed range. All have 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.



Low Voltage Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

Gearbox has rugged aluminum die cast 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 longer life. High-carbon alloy output shaft provides maximum strength and rigidity. All needle bearing journals are precision-ground after heat treating, to provide maximum finish and fit. Heavy-duty industrial oil seals help keep lubricant in and dirt out. Gears and bearings are splash lubricated with permanent, heavy-duty gear oil.

Conduit box *not* included with motor. Optional conduit box shown on page 107.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the motor's shaft seal fail.

Overhung load capacities shown are at center of output shaft.

The motor's stall torque exceeds recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage.

Model PE350 gearmotors have the same mounting dimensions as Bodine's "E" box and many Baldor gearmotors.

PE350 SERIES DC • SCR RATED
PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	Arm Volts DC	F.L. Amps DC	Overhung Load Lbs.	DIMENSIONS XL XH Inches
7	330	1/8	M1135106	\$585	P353-34	336	90	0.70	565	11.31 9.31
7	330	1/8	M1135139	585	P353-34	336	180	0.35	565	11.31 9.31
14	341	1/8	M1135107	585	P353-34	180	90	1.00	465	11.31 9.31
14	341	1/8	M1135140	585	P353-34	180	180	0.50	465	11.31 9.31
21	371	1/4	M1135117	612	P353-34	124	90	1.10	413	13.31 11.31
21	371	1/4	M1135141	612	P353-34	124	180	0.55	413	13.31 11.31
27	305	1/4	M1135115	612	P353-34	91	90	1.50	374	13.31 11.31
27	305	1/4	M1135142	612	P353-34	91	180	0.75	374	13.31 11.31
42	280	1/4	M1135108	612	P353-34	58	90	2.30	327	13.31 11.31
42	280	1/4	M1135143	612	P353-34	58	180	1.20	327	13.31 11.31
50	250	1/4	M1135109	612	P353-34	50	90	2.30	315	13.31 11.31
50	250	1/4	M1135144	612	P353-34	50	180	1.20	315	13.31 11.31
62	220	1/4	M1135110	612	P353-34	43	90	2.30	303	13.31 11.31
62	220	1/4	M1135145	612	P353-34	43	180	1.20	303	13.31 11.31
83	155	1/4	M1135114	578	P352-34	29	90	2.30	267	13.31 11.31
83	155	1/4	M1135146	578	P352-34	29	180	1.20	267	13.31 11.31
125	100	1/4	M1135111	578	P352-34	23	90	2.00	256	13.31 11.31
125	100	1/4	M1135147	578	P352-34	23	180	1.00	256	13.31 11.31
165	70	1/4	M1135112	578	P352-34	15	90	2.00	232	13.31 11.31
165	70	1/4	M1135148	578	P352-34	15	180	1.00	232	13.31 11.31
250	45	1/4	M1135116	578	P352-34	10	90	2.00	201	13.31 11.31
250	45	1/4	M1135149	578	P352-34	10	180	1.00	201	13.31 11.31
500	25	1/4	M1135113	578	P352-34	5	90	2.00	194	13.31 11.31
500	25	1/4	M1135150	578	P352-34	5	180	1.00	194	13.31 11.31

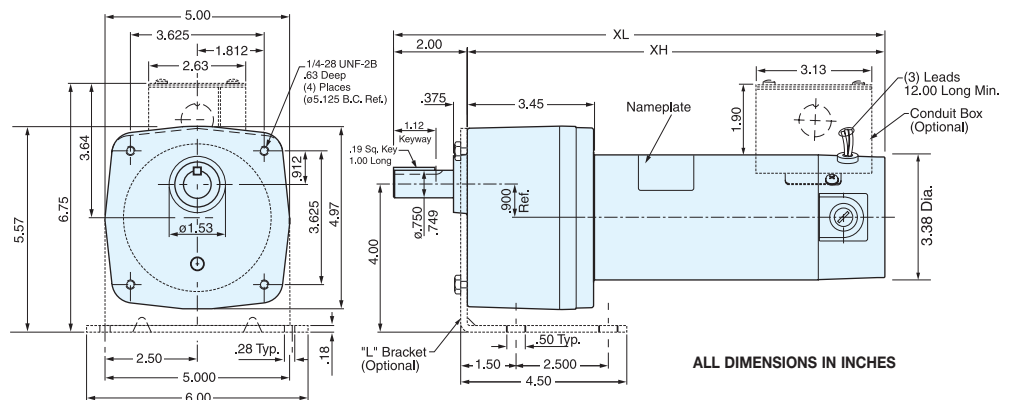
▲ Use "S" discount symbol for all gearmotors.

PE350 SERIES DC • LOW VOLTAGE (12V)
PARALLEL SHAFT • TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	Arm Volts DC	F.L. Amps DC	Overhung Load Lbs.	DIMENSIONS XL XH Inches
14	341	1/8	M1135243	\$597	P353-34	180	12	8.7	465	11.05 9.05
42	325	1/4	M1135244	625	P353-34	58	12	21.0	327	13.31 11.31
62	220	1/4	M1135245	625	P353-34	43	12	21.0	303	13.31 11.31
83	155	1/4	M1135246	593	P352-34	29	12	21.0	267	13.31 11.31

▲ Use "S" discount symbol for all gearmotors.

**BODINE
DIRECT
INTERCHANGE**





SUB-FHP DC GEARMOTORS

PARALLEL SHAFT GEARMOTORS

SCR RATED:
105-1112 In-Lbs Torque

LOW VOLTAGE:
320-1087 In-Lbs Torque

Electrical Specifications:

SCR Rated Gearmotors

SCR rated, permanent magnet DC gearmotors. Totally enclosed for continuous duty, general purpose applications. All have constant torque throughout the 60:1 speed range, when powered by a full-wave, unfiltered SCR-type adjustable speed control having a typical form factor of 1.3 to 1.4.



Low Voltage Gearmotors

Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

Gearbox has rugged aluminum die cast 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 longer life. High-carbon alloy output shaft provides maximum strength and rigidity. All needle bearing journals are precision-ground after heat treating, to provide maximum finish and fit. Heavy-duty industrial oil seals help keep lubricant in and dirt out. Gears and bearings are splash lubricated with permanent, heavy-duty gear oil. **Conduit box is included as standard.**

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft-up with motor below gearhead is not recommended. Overhung load capacities shown are at center of output shaft. P1100 DC gearmotors have the same mounting dimensions as Bison 483 gearmotors and many Dayton gearmotors. The motor's stall torque exceeds recommended full load torques. A current limiting device such as an SCR control should be used to prevent damage. For additional information, see Bulletin 1830.

P1100 SERIES DC • SCR RATED

FRACTIONAL HP • PARALLEL SHAFT • TOTALLY ENCLOSED

1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	Arm Volts DC	F.L. Amps DC	Overhung Load (Lbs.)	DIMENSIONS XL XH Inches	
8	1087	¼	108700	\$996	P1103-48	212	90	2.7	700	14.24	12.74
12	1030	¼	108701	996	P1103-48	143	90	2.7	700	14.24	12.74
18	750	¼	108702	996	P1103-48	95	90	2.7	700	14.24	12.74
42	353	¼	108703	972	P1102-48	42	90	2.7	650	14.24	12.74
60	238	¼	108704	972	P1102-48	29	90	2.7	625	14.24	12.74
92	160	¼	108705	972	P1102-48	19	90	2.7	575	14.24	12.74
135	105	¼	108706	972	P1102-48	13	90	2.7	525	14.24	12.74
18	1112	½	108707**	1078	P1103-48	95	90	5.0	700	16.49	14.99
33	822	½	108708**	1078	P1103-48	53	90	5.0	650	16.49	14.99
42	705	½	108709**	1056	P1102-48	42	90	5.0	650	16.49	14.99
60	476	½	108710**	1056	P1102-48	29	90	5.0	625	16.49	14.99
92	320	½	108711**	1056	P1102-48	19	90	5.0	575	16.49	14.99
135	210	½	108712**	1056	P1102-48	13	90	5.0	525	16.49	14.99

▲ Use "S" discount symbol.
** TEFC enclosure.

P1100 SERIES DC • LOW VOLTAGE (12V)

FRACTIONAL HP • PARALLEL SHAFT • TOTALLY ENCLOSED

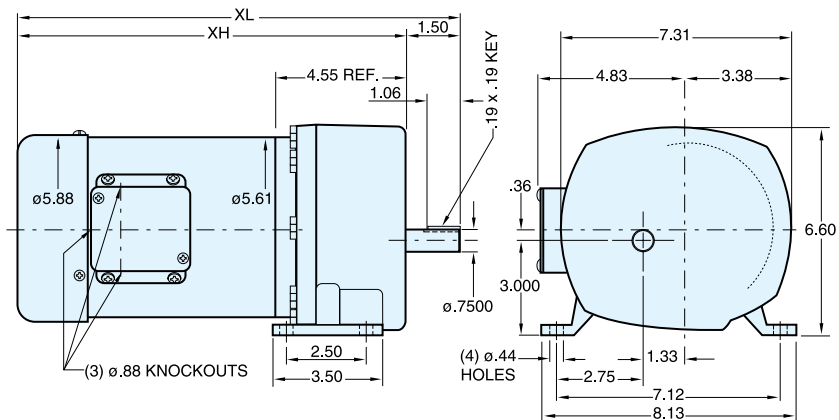
1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	Arm Volts DC	F.L. Amps DC	Overhung Load (Lbs.)	DIMENSIONS XL XH Inches	
8	1087	¼	108729	\$1017	P1103-48	212	12	21.0	700	13.74	12.24
60	238	¼	108730	995	P1102-48	29	12	21.0	625	13.74	12.24
42	705	½	108731**	1078	P1102-48	42	12	40.0	650	15.99	14.49
92	320	½	108732**	1078	P1102-48	19	12	40.0	575	15.99	14.49

▲ Use "S" discount symbol.
** TEFC enclosure.

BISON/DAYTON
DIRECT INTERCHANGE

P1100 SERIES - DC



ALL DIMENSIONS IN INCHES



SCR RATED:
5-135 In-Lbs Torque
LOW VOLTAGE:
25-135 In-Lbs Torque

Electrical Specifications:

SCR Rated Gearmotors

Totally enclosed right-angle gearmotors, performance matched for continuous service over a 60:1 speed range. All have constant torque throughout the range when powered by a full-wave, unfiltered SCR-type 115 volt input adjustable speed control having a typical form factor of 1.3 to 1.4. Also available as factory options are motors for low voltage input and with double output shafts.



Low Voltage Gearmotors

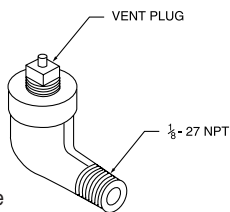
Totally enclosed, permanent magnet DC gearmotors, performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.

Mechanical Specifications:

This worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation. Precision machined aluminum housings are used. Gearbox has all ball bearings. The housing is sealed and lubrication is permanent with an oil bath. The output shaft is field interchangeable from left hand style to right hand style by reassembly.

Application Notes:

For optimum seal life, these right-angle gearmotors have a lubrication breather positioned for horizontal mounting. For other mountings, the breather-plug must be reoriented by using a 90¹/₈" NPT taper pipe elbow (see drawing). Elbow not available from LEESON. Vent plug is available (Part #M1900177_01). However, the motor portion of the gearmotor should never be mounted below the gearhead.



Overhung load capacities shown are at center of output shaft. **Conduit box not supplied with motor.** See page 103 for optional conduit box and optional base kit.

See page 163 for cross reference data between LEESON and other gearmotors.

For additional information on LEESON gearmotors, see Bulletin 1830.

BODINE/DAYTON
 DIRECT INTERCHANGE

RIGHT-ANGLE DC • SCR RATED
 TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (In.-Lbs.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps. DC	Over-hung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
42	22	1/17	M1115018	\$453	10F60-25D	60	90	1.00	185	2.50	3.00	3.60	8.79	5.19
62	19	1/17	M1115019	453	10F40-25D	40	90	1.00	185	2.50	3.00	3.60	8.79	5.19
125	16	1/17	M1115020	453	10F20-25D	20	90	1.00	185	2.50	3.00	3.60	8.79	5.19
250	10	1/17	M1115021	453	10F10-25D	10	90	1.00	185	2.50	3.00	3.60	8.79	5.19
500	5	1/17	M1115022	453	10F05-25D	5	90	1.00	185	2.50	3.00	3.60	8.79	5.19
42	30	1/12	M1135053	453	13F60-34A	60	180	0.53	235	3.38	4.00	4.50	9.64	5.14
62	35	1/12	M1135054	453	13F40-34A	40	180	0.53	235	3.38	4.00	4.50	9.64	5.14
125	18	1/12	M1135055	453	13F20-34A	20	180	0.53	235	3.38	4.00	4.50	9.64	5.14
250	10	1/12	M1135056	453	13F10-34A	10	180	0.53	235	3.38	4.00	4.50	9.64	5.14
500	5	1/12	M1135057	453	13F05-34A	5	180	0.53	235	3.38	4.00	4.50	9.64	5.14
42	80	1/8	M1135069	522	13F60-34C	60	90	1.40	235	3.38	4.00	4.50	10.64	6.14
62	70	1/8	M1135038	522	13F40-34C	40	90	1.40	235	3.38	4.00	4.50	10.64	6.14
62	70	1/8	M1135058	522	13F40-34C	40	180	0.70	235	3.38	4.00	4.50	10.64	6.14
125	45	1/8	M1135039	522	13F20-34C	20	90	1.40	235	3.38	4.00	4.50	10.64	6.14
125	45	1/8	M1135059	522	13F20-34C	20	180	0.70	235	3.38	4.00	4.50	10.64	6.14
250	25	1/8	M1135040	522	13F10-34C	10	90	1.40	235	3.38	4.00	4.50	10.64	6.14
250	25	1/8	M1135060	522	13F10-34C	10	180	0.70	235	3.38	4.00	4.50	10.64	6.14
500	13	1/8	M1135041	522	13F05-34C	5	90	1.40	235	3.38	4.00	4.50	10.64	6.14
500	13	1/8	M1135061	522	13F05-34C	5	180	0.70	235	3.38	4.00	4.50	10.64	6.14
62	135	1/4	M1135042	562	13F40-34G	40	90	2.30	235	3.38	4.00	4.50	12.64	8.14
62	135	1/4	M1135062	562	13F40-34G	40	180	1.30	235	3.38	4.00	4.50	12.64	8.14
83	125	1/4	M1135043	562	13F30-34G	30	90	2.30	235	3.38	4.00	4.50	12.64	8.14
83	125	1/4	M1135063	562	13F30-34G	30	180	1.30	235	3.38	4.00	4.50	12.64	8.14
125	90	1/4	M1135044	562	13F20-34G	20	90	2.30	235	3.38	4.00	4.50	12.64	8.14
125	90	1/4	M1135064	562	13F20-34G	20	180	1.30	235	3.38	4.00	4.50	12.64	8.14
250	50	1/4	M1135045	562	13F10-34G	10	90	2.30	235	3.38	4.00	4.50	12.64	8.14
250	50	1/4	M1135065	562	13F10-34G	10	180	1.30	235	3.38	4.00	4.50	12.64	8.14
500	30	1/4	M1135046	562	13F05-34G	5	90	2.30	235	3.38	4.00	4.50	12.64	8.14
500	30	1/4	M1135066	562	13F05-34G	5	180	1.30	235	3.38	4.00	4.50	12.64	8.14

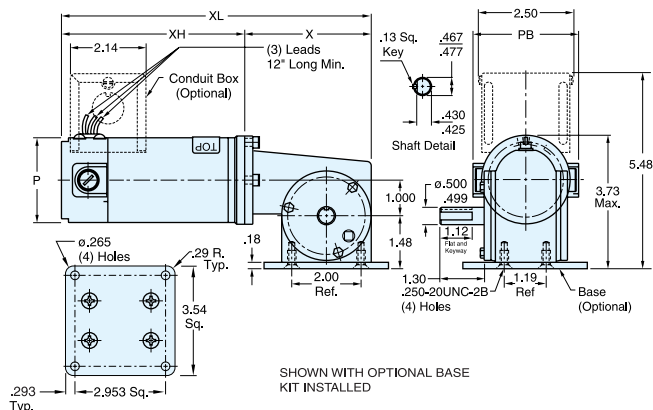
▲ Use "S" discount symbol.

RIGHT-ANGLE DC • LOW VOLTAGE (12V)
 TENV • 1.0 SERVICE FACTOR

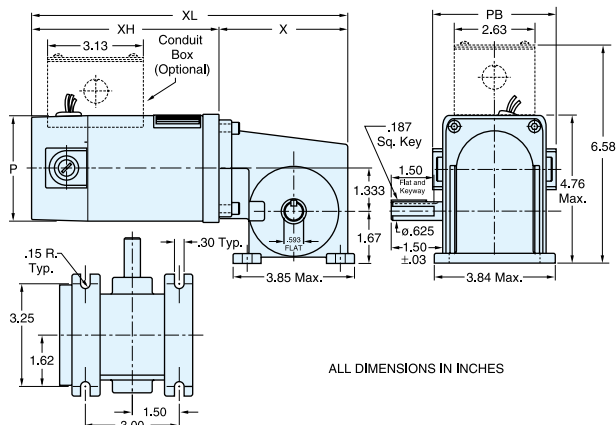
Output RPM	F.L. Torque (In.-Lbs.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps. DC	Over-hung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
42	80	1/8	M1135249	\$532	13F60-34	60	12	11.0	235	3.38	4.21	4.50	10.39	5.89
250	25	1/8	M1135250	532	13F10-34	10	12	11.0	235	3.38	4.21	4.50	10.39	5.89
62	135	1/4	M1135251	570	13F40-34	40	12	21.0	235	3.38	4.21	4.50	12.64	8.14
125	90	1/4	M1135252	570	13F20-34	20	12	21.0	235	3.38	4.21	4.50	12.64	8.14

▲ Use "S" discount symbol.

10 SERIES - DC



13 SERIES - DC



SERIES 12 SUB-FHP

Electrical Specifications:

Both SCR (90 volt) and Low Voltage (12 volt) right angle gearmotors. The 90 volt motors are performance matched for continuous service over a 60:1 speed range. All have constant torque throughout the speed range when powered by a full-wave, unfiltered SCR-type 115 volt input adjustable speed control having a typical form factor of 1.3 to 1.4. The low voltage motors are also performance matched for continuous duty. Motors are designed for battery power or can be used with a low voltage controller with form factor up to 1.05.



Mechanical Specifications:

This 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 Resinol RT for protection and sealing. This gearbox combines light weight with high tensile strength along with being precision machined for alignment of bearings and gearing. For optimum seal life, we use high-temperature Nitrile seals. Gearbox provided with solid output shaft, but can be converted to a hollow output shaft mounting by using snap-ring pliers and remove the snap ring and solid output shaft. Also the T-base feet are bolted to the gearbox, but can easily be removed and converted to face mounting.



Conduit box not supplied with motor. See page 107.

**RIGHT-ANGLE DC • SCR 90 VOLT RATED
TEFC • 1.0 SERVICE FACTOR**

Input HP	F.L. Torque (In.-Lbs.)	Output RPM	Catalog Number	List Price▲	Enclosure	Gearmotor Type & Frame	Ratio to 1	Full Arm Volts DC	Load Amps. DC
1/8*	125	28	M1135292	\$533	TENV	12B60-34D	61	90	1.6
1/8*	87	45	M1135291	533	TENV	12B39-34D	39	90	1.6
1/4	158	58	M1135290	563	TEFC	12B30-34G	30	90	2.8
1/4	100	90	M1135289	563	TEFC	12B19-34G	19	90	2.6
1/4	85	115	M1135288	563	TEFC	12B15-34G	15	90	2.6
1/4	61	167	M1135287	563	TEFC	12B11-34G	10.6	90	2.6
1/4	46	250	M1135286	563	TEFC	12B7-34G	7	90	2.6

* Supplied with TENV motor enclosure
▲ Use "S" discount symbol.

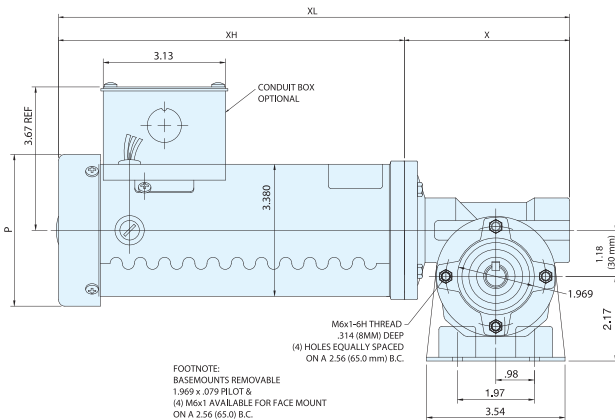
**RIGHT-ANGLE DC • LOW VOLTAGE (12V)
TENV • 1.0 SERVICE FACTOR**

Input HP	F.L. Torque (In.-Lbs.)	Output RPM	Catalog Number	List Price▲	Enclosure	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps. DC
1/8	134	27	M1135285	\$555	TENV	12B60-34C	61	12	14
1/8	94	45	M1135284	555	TENV	12B39-34C	39	12	15
1/4	158	58	M1135297	580	TENV	12B30-34F	30	12	24
1/4	100	90	M1135296	580	TENV	12B19-34F	19	12	24
1/4	85	115	M1135295	580	TENV	12B15-34F	15	12	23
1/4	61	167	M1135294	580	TENV	12B11-34F	10.6	12	21
1/4	46	250	M1135293	580	TENV	12B7-34F	7	12	23

▲ Use "S" discount symbol.

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 107.
2. For solid double output shaft, consult factory.



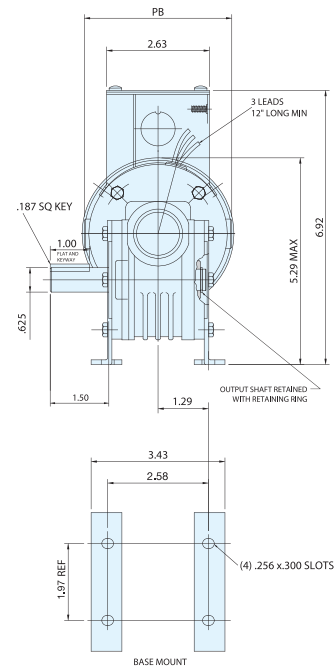
FOOTNOTE:
BASEMOUNTS REMOVABLE
1.969 x .079 FILOET &
(4) M6x1 AVAILABLE FOR FACE MOUNT
ON A 2.56 (65.0) B.C.

**SCR 90 VOLT RATED
DIMENSIONS (INCHES)**

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)
DIMENSIONS (INCHES)**

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





IP55 WASHGUARD GEARMOTORS

PARALLEL SHAFT

General Specifications:

DC permanent magnet gearmotors rated for continuous duty. Designed for use with fullwave non-filtered SCR controls or battery supplied low voltage for adjustable speed applications requiring constant torque throughout the speed range.



Mechanical Specifications:

Gearbox output shafts are coated with Miroton 3300 fortified Teflon for superior corrosion resistance.

Frame, endshields, armature and interior components protected by enamel and polyester compounds for resistance to moisture, acids, alkalis and oil.

Cast conduit box with threaded conduit holes and Nitrile gaskets keep water out. The 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. Motor 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.

Precision machined in-line steel gears, with a 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.

Application Notes:

LEESON WASHGUARD motors are designed for extended life in applications requiring regular washdown or otherwise wet environments. WASHGUARD motors retard the entrance of water.

Extra protection for the motor's interior prevents rust and corrosion build-up and releases trapped moisture to insure a longer life than possible with a standard motor.

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the shaft seal fail.

Overhung load capacities shown are at center of the output shaft.

The motor's stall torque exceeds recommended full load torques for the gearboxes. A current limiting device should be used to prevent damage to the gear sets.

PE350 SERIES PARALLEL SHAFT

TENV • 1.0 SERVICE FACTOR • SCR RATED 90V

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps DC	Overhung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
14	341	1/8	M1125268	\$695	P353-31	180	90	1.5	465	3.13	3.80	3.45	11.84	9.84
42	280	1/4	M1125269	719	P353-32	58	90	2.6	327	3.25	3.80	3.45	13.84	11.84
83	155	1/4	M1125270	701	P353-32	29	90	2.6	267	3.25	3.80	3.45	13.84	11.84
250	45	1/4	M1125271	701	P352-32	10	90	2.6	201	3.25	3.80	3.45	13.84	11.84
500	25	1/4	M1125272	701	P352-32	5	90	2.6	194	3.25	3.80	3.45	13.84	11.84

▲ Use "S" discount symbol.

PE350 SERIES PARALLEL SHAFT

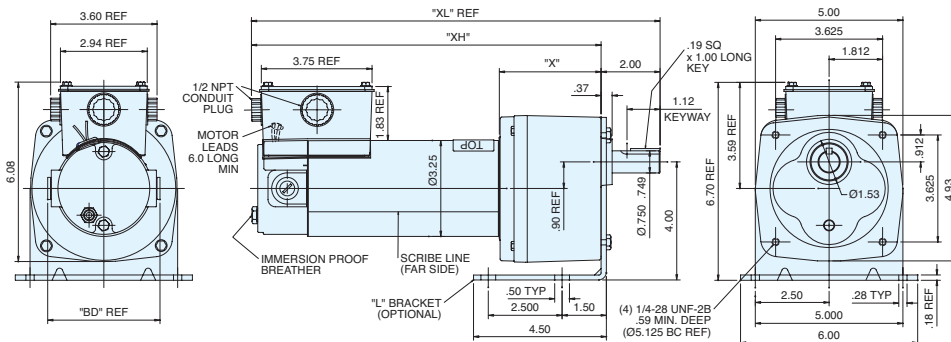
TENV • 1.0 SERVICE FACTOR • LOW VOLTAGE 12V

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps DC	Overhung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
14	341	1/8	M1125273	\$713	P353-31	180	12	12	465	3.13	4.43	3.45	11.58	9.58
42	325	1/4	M1125274	753	P353-32	58	12	20	327	3.25	4.43	3.45	13.84	11.84

▲ Use "S" discount symbol.



White Duck



General Specifications:

DC permanent magnet gearmotors rated for continuous duty. Designed for use with fullwave non-filtered SCR controls or battery supplied low voltage for adjustable speed applications requiring constant torque throughout the speed range.



Mechanical Specifications:

Gearbox output shafts are 303 stainless steel.

Frame, endshields, armature and interior components protected by enamel and polyester compounds for resistance to moisture, acids, alkalis and oil.

Cast conduit box with threaded conduit holes and Nitrile gaskets keep water out. The 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. Motor 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.

This worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation. Precision machined aluminum housings are used. Gearbox has all ball bearings. The housing is sealed and lubrication is permanent with an oil bath.

Application Notes:

LEESON WASHGUARD motors are designed for extended life in applications requiring regular washdown or otherwise wet environments. WASHGUARD motors retard the entrance of water.

Extra protection for the motor's interior prevents rust and corrosion build-up and releases trapped moisture to insure a longer life than possible with a standard motor.

For optimum seal life, 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 1/8 NPT taper pipe elbow. See page 97 or 106 for diagram.

Overhung load capacities shown are at center of the output shaft.

The motor's stall torque exceeds recommended full load torques for the gearboxes. A current limiting device should be used to prevent damage to the gear sets.

RIGHT ANGLE • SCR RATED 90V TENV • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps DC	Over-hung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
42	80	1/8	M1125275	\$695	13F60-31	60	90	2.2	235	3.13	3.80	4.50	10.86	6.36
250	25	1/8	M1125276	695	13F10-31	10	90	2.2	235	3.13	3.80	4.50	10.86	6.36
62	135	1/4	M1125277	701	13F40-32	40	90	3.7	235	3.25	3.80	4.50	12.86	8.36
125	90	1/4	M1125278	701	13F20-32	20	90	3.7	235	3.25	3.80	4.50	12.86	8.36
250	50	1/4	M1125279	701	13F10-32	10	90	3.7	235	3.25	3.80	4.50	12.86	8.36

▲ Use "S" discount symbol.

RIGHT ANGLE • LOW VOLTAGE 12V TENV • 1.0 SERVICE FACTOR

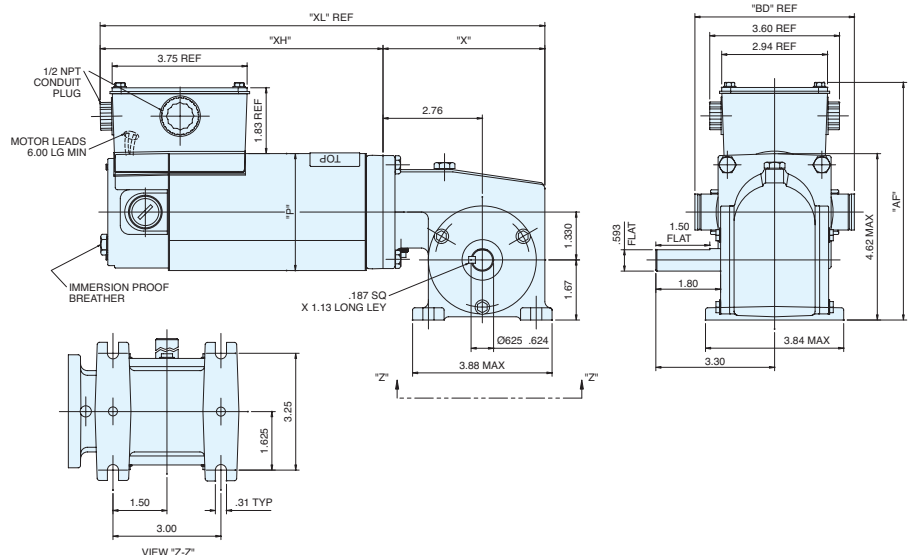
Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	Arm Volts DC	Full Load Amps DC	Over-hung Load (Lbs.)	DIMENSIONS				
										P	PB	X Inches	XL	XH
62	135	1/4	M1125280	\$666	13F40-32	40	12	28	235	3.25	4.43	4.50	12.36	7.86
125	90	1/4	M1125281	666	13F20-32	20	12	28	235	3.25	4.43	4.50	12.36	7.86

▲ Use "S" discount symbol.



White Duck

13 SERIES - DC





SUB-FHP AC GEARMOTORS

PARALLEL SHAFT GEARMOTORS

12-100 In-Lbs Output Torque

Design Specifications:

Single phase gearmotors, totally enclosed for continuous duty, general purpose applications.

Permanent split capacitor designs are rated for 115 VAC 60 hertz input, and have starting torques equal to the running torques. The inline gearing is of precision machined steel, with first stage steel helical gear followed by spur type gears. Lubrication is by semi-fluid grease, reducing possibility of leakage and providing permanent lubrication. Output shafts have needle bearings for high load capacities. Shafts are hardened steel.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the motor's shaft seal fail. If these gearmotors are stalled, gearhead damage may result, especially in the ratios of 60:1 and higher. Provisions to limit the torque are recommended. The torque values listed are the recommended full load torque values for reasonable gear life.

Overhung load capacities shown are at center of output shaft. All PZ Series gearmotors are supplied with continuous duty "run" capacitor. **Conduit box not supplied with motor.** See page 107 for optional conduit box.

Model PZ gearmotors have the same mounting dimensions as Bodine model D and Z gearmotors, Bison 100 gearmotors, and Baldor/Boehm PSS, plus many of the Dayton gearmotors.

For additional information, see Bulletin 1830.



PZ SERIES AC GEARMOTORS

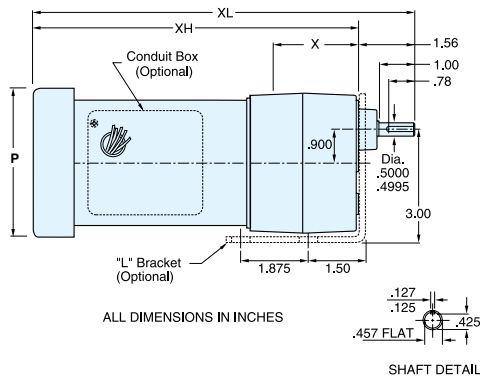
PARALLEL SHAFT • TEFC • 115V • SINGLE PHASE

40°C AMBIENT • 1.0 SERVICE FACTOR

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 115 VAC	Over-hung Load (Lb.)	DIMENSIONS				Capacitor Mfd. 240 VAC
									P	X	XL	XH	
2	100	1/150	M1125050#	\$421	PZ5-31	900	0.4	155	3.07	3.23	8.71	7.15	3.0
9	100	1/15	M1125127	421	PZ4-31	180	0.9	155	3.88	3.23	10.42	8.86	10.0
19	100	1/15	M1125128	421	PZ4-31	90	0.9	155	3.88	3.23	10.42	8.86	10.0
28	100	1/15	M1125129	421	PZ3-31	60	0.9	155	3.88	2.43	9.62	8.06	10.0
57	56	1/15	M1125130	405	PZ3-31	30	0.9	171	3.88	2.43	9.62	8.06	10.0
94	36	1/15	M1125131	405	PZ3-31	18	0.9	171	3.88	2.43	9.62	8.06	10.0
142	24	1/15	M1125132	392	PZ2-31	12	0.9	180	3.88	2.13	9.32	7.76	10.0
283	12	1/15	M1125133	392	PZ2-31	6	0.9	180	3.88	2.13	9.32	7.76	10.0

TENV enclosure
▲ Use "S" discount symbol.

PZ SERIES - AC



BODINE/BISON/DAYTON
DIRECT INTERCHANGE

QUICK REFERENCE

GEARMOTOR CROSS REFERENCE Page 163
"L" BRACKET AND CONDUIT BOX 107

SUB-FHP AC GEARMOTORS

PARALLEL SHAFT GEARMOTORS



43-391 In-Lbs Output Torque



Design Specifications:

Single phase gearmotors, totally enclosed for continuous duty, general purpose applications. Permanent split capacitor designs are rated for 115/230VAC, 60/50 Hertz input, and have starting torques equal to the running torques. The in-line gearing is of precision machined steel, with first stage steel helical gear followed by spur type gears. Lubrication is by semi-fluid grease, reducing possibility of leakage and providing permanent lubrication. Output shafts have needle bearings for high load capacities. Shafts are hardened steel.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft up with motor below should be avoided to prevent leakage of lubricant into the motor should the motor's shaft seal fail. If these gearmotors are stalled, gearhead damage may result, especially in the ratios of 60:1 and higher. Provisions to limit the torque are recommended. The torque values listed are the recommended full load torque values for reasonable gear life. Overhung load capacities shown are at center of output shaft. All P240 gearmotors are supplied with continuous duty "run" capacitor. **Conduit box not supplied with motor.** See page 107 for optional conduit box.

Model P240 gearmotors have the same mounting dimensions as Bison's 224 and 242 gearmotors and many Dayton gearmotors.

For additional information, see Bulletin 1830.

Please contact LEESON for output speeds not listed.

P240 SERIES AC GEARMOTORS

PARALLEL SHAFT • TOTALLY ENCLOSED • 115/230V

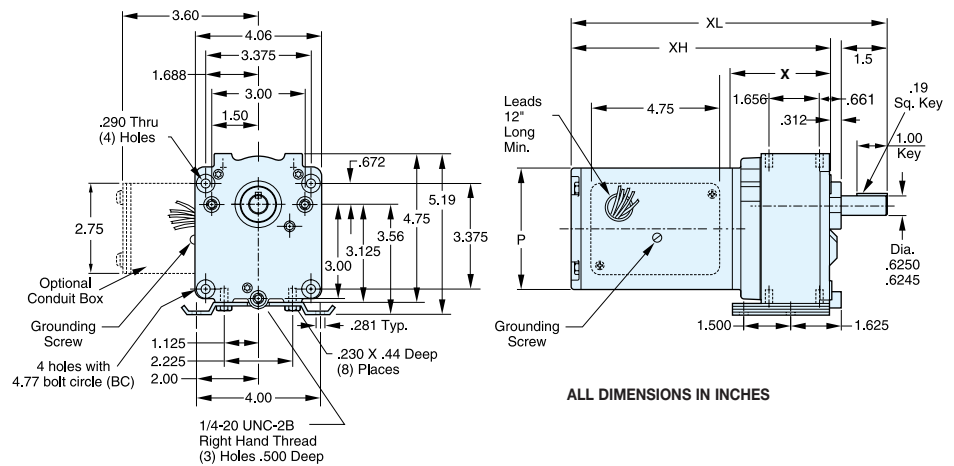
SINGLE PHASE • 40°C AMBIENT • 1.0 SERVICE FACTOR

60 Hz Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 115V AC	Overhung Load (Lb.)	DIMENSIONS				Capacitor Mfd. 240 VAC
									P	X	XL	XH	
8	345	1/15	M1145029	\$629	P243-38D	216	1.0	491	3.85	3.50	10.46	8.96	7.5
15	250	1/15	M1145023	629	P243-38D	114	1.0	407	3.85	3.50	10.46	8.96	7.5
16	391	1/6	M1145030**	683	P243-38F	103	2.1	399	4.43	3.50	12.13	10.63	15.0
30	135	1/15	M1145024	572	P242-38D	52	1.0	330	3.85	3.50	10.46	8.96	7.5
30	295	1/6	M1145031**	683	P243-38F	58	2.1	330	4.43	3.50	12.13	10.63	15.0
40	219	1/6	M1145032**	683	P243-38F	43	2.1	303	4.43	3.50	12.13	10.63	15.0
45	92	1/15	M1145025	572	P242-38D	35	1.0	292	3.85	3.50	10.46	8.96	7.5
60	157	1/6	M1145033**	626	P242-38D	29	2.1	268	4.43	3.50	12.13	10.63	15.0
70	61	1/15	M1145026	572	P242-38D	23	1.0	256	3.85	3.50	10.46	8.96	7.5
90	103	1/6	M1145034**	626	P242-38D	19	2.1	237	4.43	3.50	12.13	10.63	15.0
97	43	1/15	M1145027	572	P242-38D	16.5	1.0	232	3.85	3.50	10.46	8.96	7.5
139	30	1/15	M1145028	572	P242-38D	11.5	1.0	208	3.85	3.50	10.46	8.96	7.5
156	60	1/6	M1145035**	626	P242-38D	10.6	2.1	201	4.43	3.50	12.13	10.63	15.0

▲ Use "S" discount symbol.
 ** TEFC enclosure.

BISON/DAYTON DIRECT INTERCHANGE

P240 SERIES



25-341 In-Lbs Output Torque

Design Specifications:

Sub-FHP AC gearmotors. Totally enclosed for continuous duty, general purpose applications. All rated for 60/50 Hz operation except hi-torque single-phase which are 60 Hz only.



Gearbox has rugged aluminum die cast 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 longer life. High-carbon alloy output shaft provides maximum strength and rigidity. All needle bearing journals are precision-ground after heat treating, to provide maximum finish and fit. Single lip, spring loaded, heavy-duty industrial oil seals help keep lubricant in and dirt out. Gears and bearings are splash lubricated with permanent, heavy-duty gear oil.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft-up with motor below gearhead is not recommended.

Run capacitor supplied with gearmotor at no additional cost. **Three phase and hi-torque single-phase models include conduit box, other single-phase models do not.** See page 107 for optional conduit box.

Overhung load capacities shown are at center of output shaft.

Model PE350 gearmotors have the same mounting dimensions as Bodine's "E" box and many Baldor/Boehm gearmotors.

**BODINE
DIRECT
INTERCHANGE**

PE350 SERIES AC GEARMOTORS

SINGLE PHASE • PARALLEL SHAFT • TEFC • 115/230V

60 Hz Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	F.L. Amps 115V AC	Overhung Load Lbs.	DIMENSIONS XL Inches	XH Inches	Capacitor Mfd. 240VAC
5	310	1/12	096000#	\$599	PE353-42	336	1.3	565	11.36	9.36	10.0
9	341	1/12	096001#	599	PE353-42	180	1.3	491	11.36	9.36	10.0
14	330	1/12	096002#	599	PE353-42	124	1.3	459	11.36	9.36	10.0
19	250	1/12	096003#	599	PE353-42	91	1.3	374	11.36	9.36	10.0
29	270	1/6	096004	629	PE353-42	58	3.2	327	13.32	11.32	15.0
34	250	1/6	096005	629	PE353-42	50	3.2	330	13.32	11.32	15.0
40	180	1/6	096006	629	PE353-42	43	3.2	303	13.32	11.32	15.0
59	135	1/6	096007	594	PE352-42	29	3.2	267	13.32	11.32	15.0
75	90	1/6	096008	594	PE352-42	23	3.2	256	13.32	11.32	15.0
113	68	1/6	096009	594	PE352-42	15	3.2	222	13.32	11.32	15.0
160	45	1/6	096010	594	PE352-42	10	3.2	196	13.32	11.32	15.0
340	25	1/6	096011	594	PE352-42	5	3.2	190	13.32	11.32	15.0

Hi-Torque Single Phase PE350 Gearmotors With Capacitor Start Motors

58	320	1/3	096049	696	PE353-42	30	7.2	300	14.56	12.56	...
85	218	1/3	096050	654	PE353-42	20	7.2	300	14.56	12.56	...
173	109	1/3	096051	654	PE353-42	10	7.2	300	14.56	12.56	...
345	55	1/3	096052	654	PE353-42	5	7.2	300	14.56	12.56	...

TENV enclosure

▲ Use "S" discount symbol.

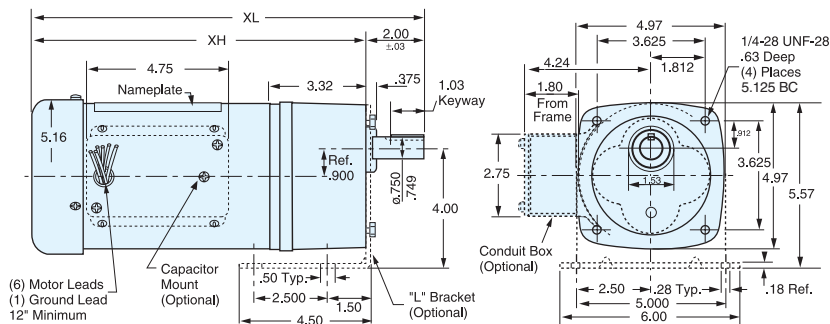
PE350 SERIES AC GEARMOTORS

THREE PHASE • PARALLEL SHAFT • TEFC • 230/460V

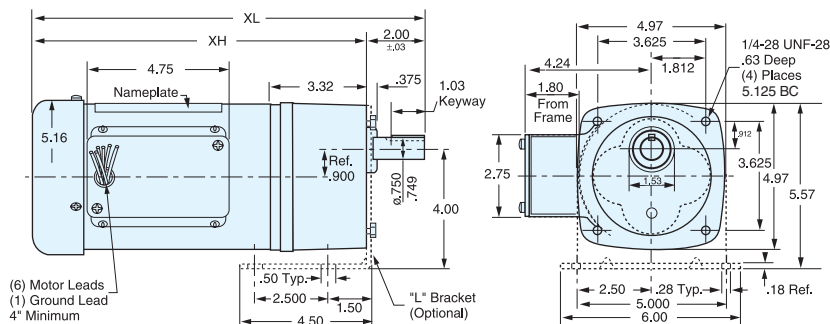
Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load Lbs.	DIMENSIONS XL Inches	XH Inches
58	320	1/3	096013	\$691	PE353-42	30	1.6	300	13.81	11.81
85	218	1/3	096014	649	PE352-42	20	1.6	300	13.81	11.81
173	109	1/3	096015	649	PE352-42	10	1.6	300	13.81	11.81
345	55	1/3	096016	649	PE352-42	5	1.6	300	13.81	11.81

▲ Use "S" discount symbol.

PE350 SINGLE PHASE



PE350 THREE PHASE



ALL DIMENSIONS IN INCHES

**70-1105 In-Lbs
Output Torque**

Design Specifications:

Fractional horsepower AC gearmotors. Totally enclosed for continuous duty, general purpose applications. Rated for 60 Hz input.



Gearbox has rugged aluminum die cast 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 longer life. High-carbon alloy output shaft provides maximum strength and rigidity. All needle bearing journals are precision-ground after heat treating, to provide maximum finish and fit. Heavy-duty industrial oil seals help keep lubricant in and dirt out. Gears and bearings are splash lubricated with permanent, heavy-duty gear oil.

Application Notes:

These gearmotors are designed for mounting at any angle, but shaft-up with motor below gearhead is not recommended. P1100 AC gearmotors have the same mounting dimensions as Bison 482 gearmotors and many Dayton gearmotors. Three phase units suitable for inverter duty.

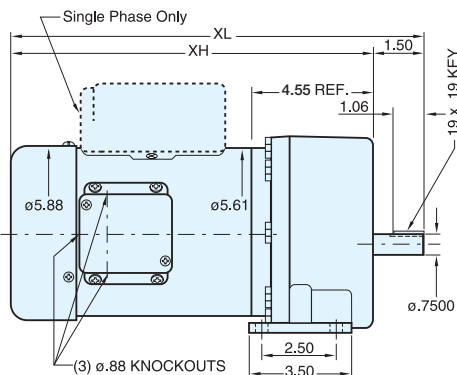
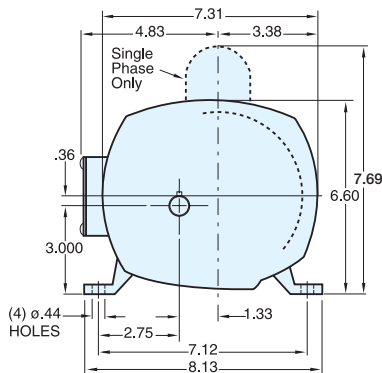
Both single and three phase models include conduit box. For additional information, see Bulletin 1830.

P1100 SERIES AC GEARMOTORS
SINGLE PHASE • FRACTIONAL HP • TEFC • 115/230V

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	F.L. Amps 115V AC	Overhung Load Lbs.	DIMENSIONS XL XH Inches	
8	975	1/4	107000	\$844	P1103-48	212	5.4	700	13.42	11.92
12	1030	1/4	107004	844	P1103-48	143	5.4	700	13.42	11.92
18	800	1/4	107003	844	P1103-48	95	5.4	700	13.42	11.92
26	569	1/4	107002	844	P1103-48	66	5.4	650	13.42	11.92
59	248	1/4	107005	826	P1102-48	29	5.4	625	13.42	11.92
133	114	1/4	107001	826	P1102-48	13	5.4	525	13.42	11.92
18	1089	1/3	107006	854	P1103-48	95	6.2	700	13.67	13.17
26	752	1/3	107012	854	P1103-48	66	6.2	650	13.67	13.17
41	461	1/3	107011	836	P1102-48	42	6.2	650	13.67	13.17
59	330	1/3	107010	836	P1102-48	29	6.2	625	13.67	13.17
91	224	1/3	107009	836	P1102-48	19	6.2	575	13.67	13.17
157	125	1/3	107008	836	P1102-48	11	6.2	500	13.67	13.17
288	70	1/3	107007	836	P1102-48	6	6.2	400	13.67	13.17
22	1105	1/2	107013	930	P1103-48	79	8.8	700	14.17	12.67
41	700	1/2	107017	912	P1102-48	42	8.8	650	14.17	12.67
59	496	1/2	107016	912	P1102-48	29	8.8	625	14.17	12.67
91	336	1/2	107015	912	P1102-48	19	8.8	575	14.17	12.67
133	229	1/2	107014	912	P1102-48	13	8.8	525	14.17	12.67

Gearmotors

**BISON/DAYTON
DIRECT INTERCHANGE**



ALL DIMENSIONS IN INCHES

P1100 SERIES AC GEARMOTORS
THREE PHASE • FRACTIONAL HP • TEFC • 230/460V

Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load Lbs.	DIMENSIONS XL XH Inches	
18	1089	1/3	107025	\$909	P1103-48	95	1.6	700	12.92	11.42
26	752	1/3	107026	909	P1103-48	66	1.6	650	12.92	11.42
41	461	1/3	107027	889	P1102-48	42	1.6	650	12.92	11.42
59	330	1/3	107028	889	P1102-48	29	1.6	625	12.92	11.42
91	224	1/3	107029	889	P1102-48	19	1.6	575	12.92	11.42
157	125	1/3	107030	889	P1102-48	11	1.6	500	12.92	11.42
288	70	1/3	107031	889	P1102-48	6	1.6	400	12.92	11.42
22	1105	1/2	107032	958	P1103-48	79	2.0	700	13.42	11.92
41	700	1/2	107033	944	P1102-48	42	2.0	650	13.42	11.92
59	496	1/2	107034	944	P1102-48	29	2.0	625	13.42	11.92
91	336	1/2	107035	944	P1102-48	19	2.0	575	13.42	11.92
133	229	1/2	107036	944	P1102-48	13	2.0	500	13.42	11.92
288	100	1/2	107037	944	P1102-48	6	2.0	400	13.42	11.92

▲ Use "S" discount symbol.

QUICK REFERENCE

GEARMOTOR CROSS REFERENCE Page 163
"L" BRACKET AND CONDUIT BOX 107

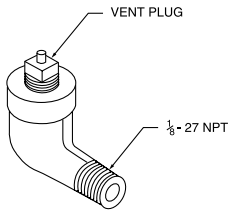
14-113 In-Lbs Output Torque

Design Specifications:

Single phase gearmotors, totally enclosed for continuous duty, general purpose applications. Permanent split capacitor motors rated 115/230 VAC 60/50 hertz input, and have starting torque equal to the running torque. This worm-type right-angle gearing features hardened, steel worm with bronze worm wheel for long life and quiet operation. Precision machined aluminum housings are used. Gearbox has all ball bearings. The housing is sealed and lubrication is permanent with an oil bath. The output shaft is field interchangeable from left hand style to right hand style.

Application Notes:

For optimum seal life, 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°/8" NPT taper pipe elbow (see drawing). However, the motor portion of the gearmotor should never be mounted below the gearhead. Overhung load capacities shown are at center of output shaft. These motors are supplied with continuous duty "run" capacity. **Conduit box not supplied with motor.** See page 107 for optional conduit box and base kit.



Please contact LEESON for output speeds not listed. For additional information, see Bulletin 1830.

BODINE/DAYTON
DIRECT INTERCHANGE

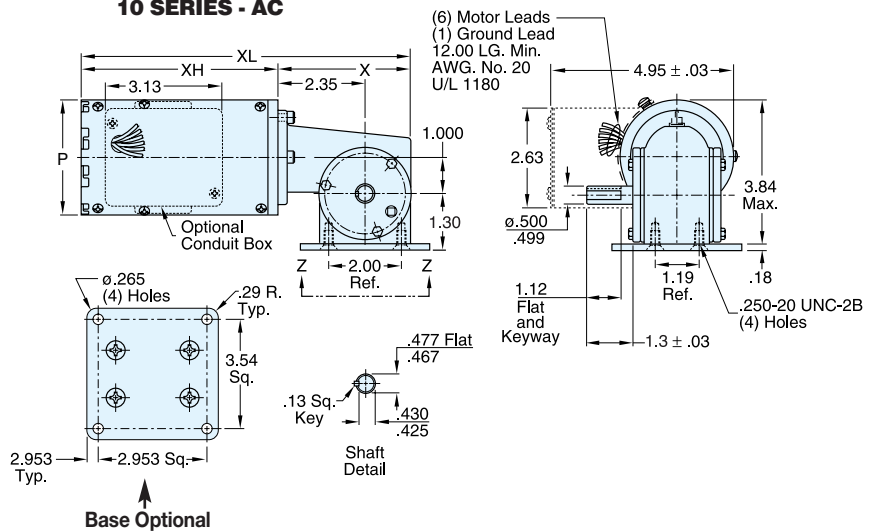
RIGHT-ANGLE AC GEARMOTORS

TOTALLY ENCLOSED • 115/230 V • SINGLE PHASE

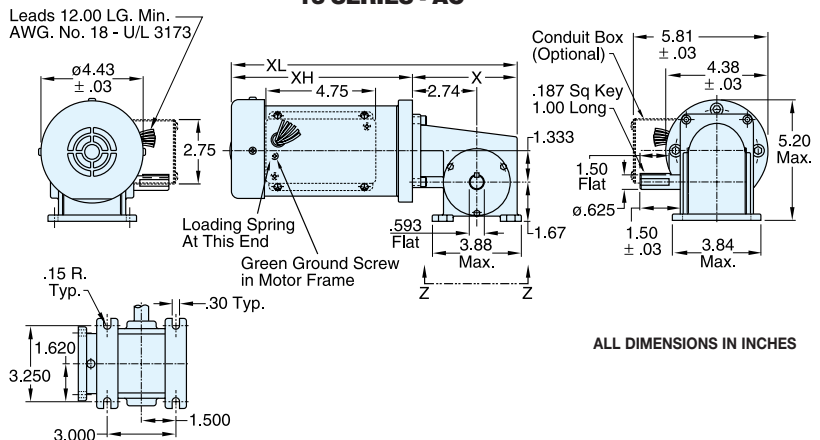
60 Hz Output RPM	F.L. Torque (Lb.In.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 115V AC	Over-hung Load (Lb.)	DIMENSIONS				Capacitor Mfd.
									P Dia.	X Inches	XL Inches	XH	
28	37	1/15	M1125080	\$518	10F60-31C	60	0.9	185	3.07	3.63	8.94	5.31	10.0+
43	34	1/15	M1125081	518	10F40-31C	40	0.9	185	3.07	3.63	8.94	5.31	10.0+
58	40	1/15	M1125082	518	10F30-31C	30	0.9	185	3.07	3.63	8.94	5.31	10.0+
85	24	1/15	M1125083	518	10F20-31C	20	0.9	185	3.07	3.63	8.94	5.31	10.0+
173	14	1/15	M1125084	518	10F10-31C	10	0.9	185	3.07	3.63	8.94	5.31	10.0+
29	110	1/6	M1145037**	703	13F60-38F	60	2.0	235	3.85	4.50	12.31	7.81	15.0*
43	113	1/6	M1145038**	703	13F40-38F	40	2.0	235	3.85	4.50	12.31	7.81	15.0*
57	95	1/6	M1145082**	703	13F30-38F	30	2.0	235	3.85	4.50	12.31	7.81	15.0*
83	75	1/6	M1145039**	703	13F20-38F	20	2.0	235	3.85	4.50	12.31	7.81	15.0*
170	43	1/6	M1145040**	703	13F10-38F	10	2.0	235	3.85	4.50	12.31	7.81	15.0*
340	23	1/6	M1145041**	703	13F05-38F	5	2.0	235	3.85	4.50	12.31	7.81	15.0*

▲ Use "S" discount symbol.
** TEFC enclosure.
+ 250 VAC
* 300 VAC

10 SERIES - AC



13 SERIES - AC



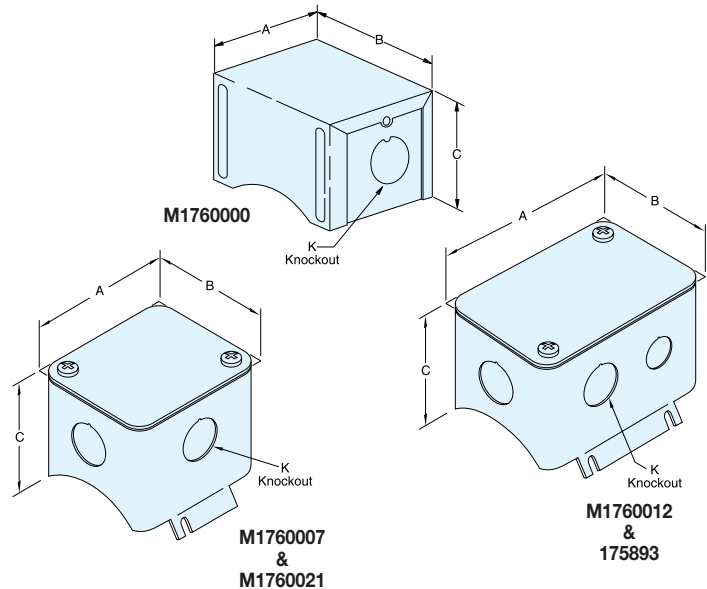


SUB-FHP GEARMOTOR CONDUIT BOXES

Optional steel conduit or junction boxes are available. The boxes are painted and mount in holes using screws provided with all stock gearmotors.

Catalog Number	For Motor Frames	DIMENSIONS (Inches)				List Price	Disc. Sym.
		A	B	C	K		
M176000*	25	2.09	2.45	2.23	0.875	\$32	S
M1760021*	30/31	3.13	2.63	2.28	0.875	32	S
M1760007	34	3.13	2.63	2.28	0.875	32	S
M1760012	38	4.75	2.75	2.00	1.125	34	S
175893	42	4.75	2.75	2.00	1.125	34	S

Note: * For any gearmotor catalog number beginning with M1115XXX, must clarify from gearmotor type and frame columns as listed on catalog pages 92, 93 and 97. For example, if gearmotor type and frame lists P303-30E, then use 30 frame conduit box kit M1760021. If gearmotor type and frame lists 10F60-25, then use conduit box kit M1760000.

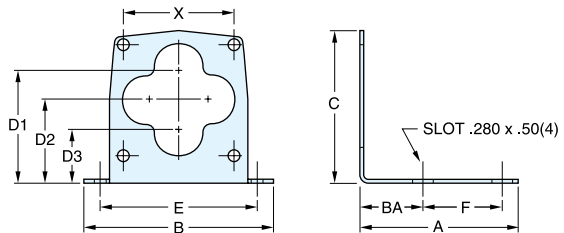


SUB-FHP GEARMOTOR "L" MOUNTING BRACKET

Optional "L" brackets can be used to mount parallel shaft type PZ or PE350 gearmotors. Of steel construction, they are painted and include screws for mounting to the motor, but not the application.

Catalog Number	For Motors	DIMENSIONS (Inches)								List Price	Disc. Sym.		
		A	B	C	D ¹	D ²	D ³	X	BA			F	E
M1760003*	PZ Gearmotors	3.75	4.50	3.935	3.00	2.25	1.50	2.645	1.50	1.875	3.75	\$42	S
M1760011**	PE350 Gearmotors	4.50	6.00	5.520	4.00	3.10	2.20	3.625	1.50	2.500	5.00	50	S
M1760029Δ	PE350 Gearmotors	4.50	6.00	5.520	4.00	3.10	2.20	3.625	1.50	2.500	5.00	52	S

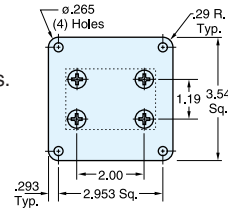
* Maximum radial load no greater than 50 lbs. This bracket can also be used on DC motors in the 34 frame having the style C mounting.
** Maximum radial load no greater than 200 lbs.
Δ Washguard PE350 L-Bracket



SUB-FHP GEARMOTOR RIGHT-ANGLE BASE KIT

This Optional Base Kit can be used with the 10 Series right-angle gearmotors. (Includes screws for mounting to gearbox, but not the application.)

Catalog Number	List Price	Disc. Sym.
M1760006	\$44	S



CAPACITORS FOR SUB-FHP RIGHT-ANGLE AC GEARMOTORS

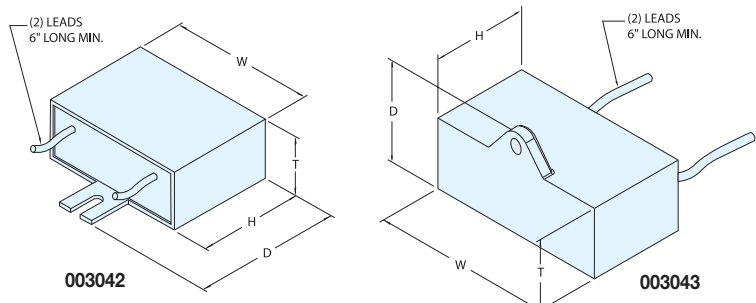
MFD Rating	Voltage Rating	Catalog Number	List Price	Disc. Sym.	DIMENSIONS (Inches)			
					W	H	T	D
10.0	250	003043.05	\$38	S	1.89	1.14	0.75	1.14
15.0	300	003042.05	43	S	2.28	1.61	1.14	2.48

CAPACITORS FOR SUB-FHP AC PZ SERIES GEARMOTORS

MFD Rating	Voltage Rating	Catalog Number	List Price	Disc. Sym.	DIMENSIONS (Inches)			
					W	H	T	D
3.0	250	003043.01	\$43	S	1.22	0.93	0.57	0.97
10.0	250	003043.05	38	S	1.89	1.14	0.75	1.14

CAPACITORS FOR SUB-FHP P240 & PE350 AC GEARMOTORS

Gearmotor Type	MFD Rating	Voltage Rating	Catalog Number	List Price	Disc. Sym.	DIMENSIONS (Inches)			
						W	H	T	D
P240	7.5	250	003042.02	\$43	S	1.89	1.14	0.75	2.01
PE350	10.0	250	003042.06	38	S	1.89	1.24	0.89	2.11
P240	15.0	300	003042.05	43	S	2.28	1.61	1.14	2.48
PE350	15.0	250	003042.04	49	S	2.28	1.46	0.93	2.33



Design Specifications:

Three phase motors totally enclosed for continuous duty, general purpose applications.



Standard on all these ratings is the exclusive Inverter Rated Insulation System (IRIS). This provides superior protection against voltage spikes induced by variable frequency drives.

Many superior mechanical features for both the motor and gearbox. Double shielded ball bearings in the motor. Needle bearings in the parallel shaft gearboxes and ball bearings in the Right angle (worm) gearboxes. Steel conduit box provided as Standard. Complete gearmotor furnished with high gloss hardened black enamel paint.

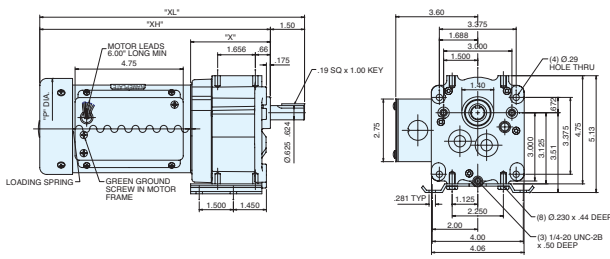
Application Notes:

These motors are designed with high temp insulation (Class F) to avoid over heating when operated with a PWM inverter down to a 10:1 speed range from the printed gearmotor output RPM.

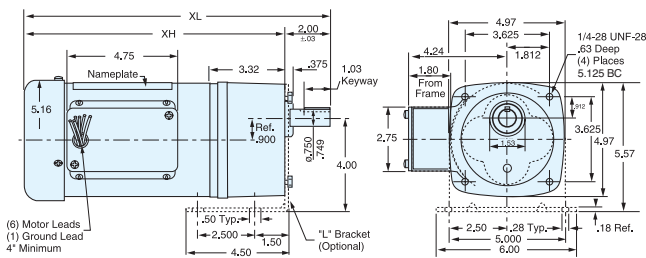
Refer to pages 104 to 106 detailing non-horizontal mounting. The torque values listed are the recommended full load torque values for reasonable gear life.

Overhung load capacities shown are at the center of the output shaft. See page 107 for optional "L" bracket kits for PZ and PE350 units. Please contact LEESON for output speeds not listed.

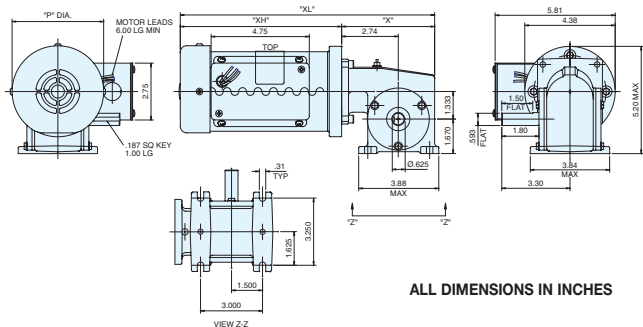
P240 SERIES - AC



PE350 THREE PHASE



13 SERIES - AC



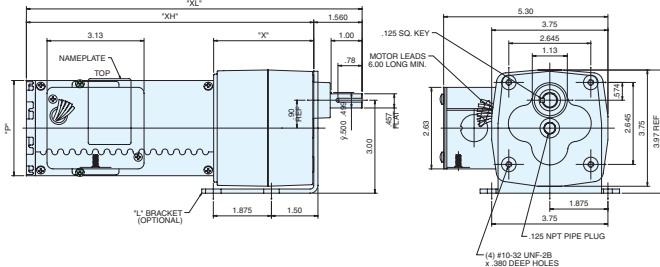
ALL DIMENSIONS IN INCHES

PZ SERIES AC GEARMOTORS

THREE PHASE • 230V • TENV

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
									P	X	XL	XH
19	100	1/15	M1125282	\$421	PZ4-31	90	0.4	155	3.07	3.23	10.83	9.27
57	56	1/15	M1125283	405	PZ3-31	30	0.4	171	3.07	2.43	10.03	8.47
142	24	1/15	M1125284	392	PZ2-31	12	0.4	180	3.07	2.13	9.73	8.17
283	12	1/15	M1125285	392	PZ2-31	6	0.4	180	3.07	2.13	9.73	8.17

PZ SERIES - AZ



P240 SERIES AC GEARMOTORS

THREE PHASE • 230V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
									P	X	XL	XH
16	391	1/6	M1145122	\$544	P243-38	103	0.72	399	4.43	3.50	11.63	10.13
30	295	1/6	M1145123	544	P243-38	58	0.72	330	4.43	3.50	11.63	10.13
60	157	1/6	M1145124	503	P242-38	29	0.72	268	4.43	3.50	11.63	10.13
90	103	1/6	M1145125	503	P242-38	19	0.72	330	4.43	3.50	11.63	10.13
156	60	1/6	M1145126	503	P242-38	10.6	0.72	330	4.43	3.50	11.63	10.13

PE350 SERIES AC GEARMOTORS

THREE PHASE • 230/460V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
									P	X	XL	XH
9	341	1/6	096065	\$550	PE353-42	180	1.0	491	5.16	3.32	12.57	10.57
29	300	1/4	096066	555	PE353-42	58	1.2	327	5.16	3.32	13.07	11.07
58	244	1/4	096067	555	PE353-42	30	1.2	300	5.16	3.32	13.07	11.07
85	165	1/4	096068	544	PE352-42	20	1.2	300	5.16	3.32	13.07	11.07
173	92	1/4	096069	544	PE352-42	10	1.2	300	5.16	3.32	13.07	11.07
345	50	1/4	096070	544	PE352-42	5	1.2	300	5.16	3.32	13.07	11.07

RIGHT ANGLE SERIES AC GEARMOTORS

THREE PHASE • 230V • TEFC

Output RPM	F.L. Torque (Lb.in.)	Input HP	Catalog Number	List Price▲	Gearmotor Type & Frame	Ratio to 1	F.L. Amps 230V AC	Overhung Load (Lb.)	DIMENSIONS			
									P	X	XL	XH
29	238	3/8	M1145127	\$666	13F60-38	60	1.3	235	4.43	4.50	12.31	7.81
43	228	3/8	M1145128	666	13F40-38	40	1.3	235	4.43	4.50	12.31	7.81
86	138	3/8	M1145129	666	13F20-38	20	1.3	235	4.43	4.50	12.31	7.81
172	105	3/8	M1145130	666	13F10-38	10	1.3	235	4.43	4.50	12.31	7.81
345	54	3/8	M1145131	666	13F05-38	5	1.3	235	4.43	4.50	12.31	7.81

▲ Use "S" discount symbol.

Design Specifications:

Three phase motors totally enclosed for continuous duty, general purpose applications.

Standard on all these ratings is the exclusive Inverter Rated Insulation System (IRIS). This provides superior protection against voltage spikes induced by variable frequency drives.

Many superior mechanical features double shielded ball bearings, welded-on base, steel conduit box provided as standard, furnished with high gloss hardened black enamel paint.

Application Notes:

These motors are designed with high temp insulation (Class F) to avoid overheating when operated with a PWM inverter down to a 10:1 speed range from the motor's base speed.

230 VOLT • THREE PHASE
1.0 SERVICE FACTOR • TOTALLY ENCLOSED

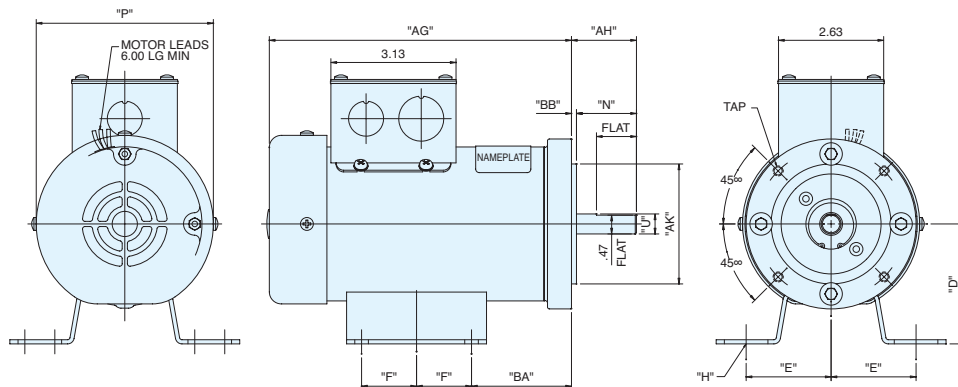
HP	RPM 60 Hz	Frame	Catalog Number	List Price	Disc. Sym.	Voltage	F.L. Amps 230V
1/15	1725	38	M1140171*	\$277	S	230	.4
1/6	1725	38	M1140173*	298	S	230	.72
1/4	1725	38	M1140172	321	S	230	1.1

* TENV enclosure

38 FRAME NEMA C-FACE WITH BASE DIMENSIONS

Catalog Number	AG	P	U	AH	BB	AJ	TAP	R	AK	BB	D	BA	E	F	H
M1140171	5.14	3.85	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot
M1140173	6.14	3.85	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot
M1140172	7.56	4.43	.5000	1.63	1.00	3.75	1/4-20	4.25	3.00	.13	3.0	2.50	2.125	1.375	11/32 Slot

AC 38 48C



ALL DIMENSIONS IN INCHES

Both motors only and gearmotors will have inverter rated printed on the nameplate.
UL and CSA recognition for both motors only and gearmotors



LEESON'S Inverter Rated Insulation System (IRIS™) provides superior protection against voltage spikes induced by variable frequency drives. This *total insulation system* protects better than spike-resistant magnet wire alone. Sleeved connections (from the leads all the way

into the turns), and deep-penetrating, non-hygroscopic, high temperature varnish are just a few features contributing to extra protection. All this plus second generation spike-resistant magnet wire. The IRIS™ *total insulation system* is standard at no extra cost.