VonWeise

Gearmotors, Linear Actuators and Controls

INTRODUCTION

VonWeise the world's premier line of Gearmotors and Linear Actuators.

For nearly 50 years, we have been designing and manufacturing globally respected motors for transportation, residential, and commercial applications. Today, Von Weise delivers a comprehensive line of fractional horsepower AC and DC gear motors, linear actuators, blowers, starters, and many other industrial applications.

Gearmotor applications include:

- Hospital long term and home care beds
- Seat lift chairs
- Treadmills
- Ice Machines
- Vending Machines
- Workstation Tables
- A variety of Industrial applications

This catalog presents the complete gearmotor and actuator line in two ways:

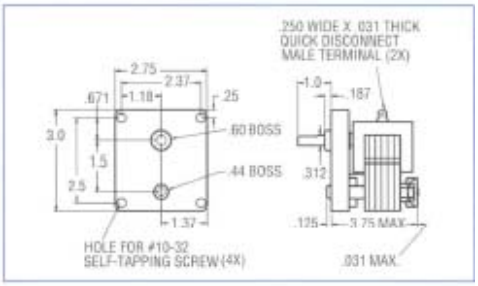
1. The Custom section lists model numbers and the range of available options needed to meet your particular application.
2. The OEM section lists models in stock for applications not requiring one of our custom-engineered products.

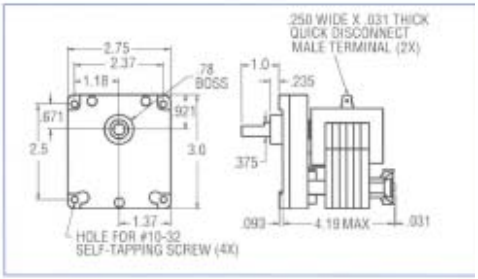
Specifying gearmotors and actuators is simple using our "total capabilities" package. It allows you to specify the product that best supports your particular situation and requirement.

TABLE OF CONTENTS

D10P/L

Overhung load 3.5 lbs., .44" from output boss



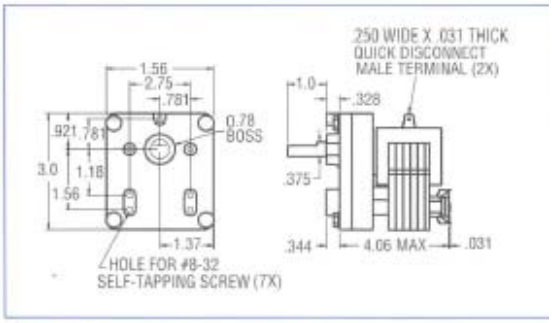


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios						
		24	30	40	60	100	150	300
60 Hz.	F.L. Speed (RPM)	125	100	75	50	30	20	10
Reversing	F.L. Torque (in-lbs.)	0.9	1.1	1.5	2.2	3.8	5.5	11
Non-reversing	F.L. Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	28

Options
- Shaded Pole Motor
- Disc Brake
- P.S.C. Motor
- Cone Brake
- Synchronous Motor
- Armature Brake
- Overload Protection
- Clutch

D10H

Overhung load 7 lbs., .44" from output boss



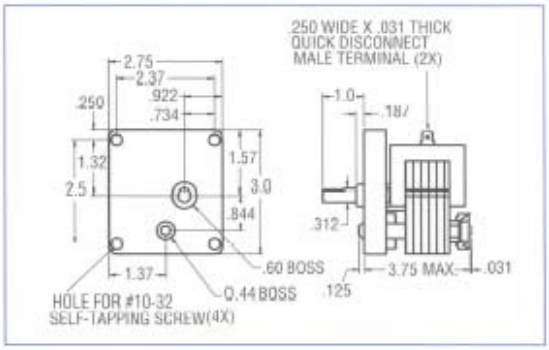
Alternate mountings are available.

Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		24	30	40	60	100	150	333	500	1000	1500
60 Hz.	F.L. Speed (RPM)	125	100	75	50	30	20	9	6	3	2
Reversing	F.L. Torque (in-lbs.)	0.9	1.1	1.5	2.2	3.8	5.5	13	21	45	56
Non-reversing	F.L. Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	30	52	75	75

Options
- Shaded Pole Motor
- Disc Brake
- P.S.C. Motor
- Cone Brake
- Synchronous Motor
- Armature Brake
- Overload Protection
- Clutch

D10PA

Overhung load 3.5 lbs., .44" from output boss



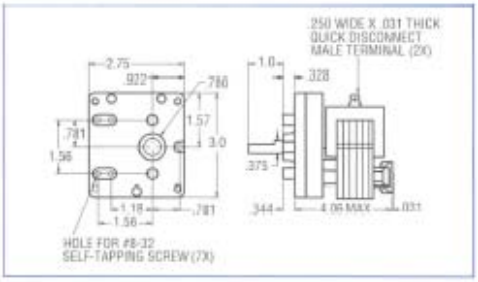
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		24	30	40	60	100	150	333	500	1000	3000
60 Hz.	F.L. Speed (RPM)	125	100	75	50	30	20	9	6	3	1
Reversing	F.L. Torque (in-lbs.)	0.9	1.1	1.5	2.2	3.8	5.5	13	21	45	45
Non-reversing	F.L. Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	30	45	45	45

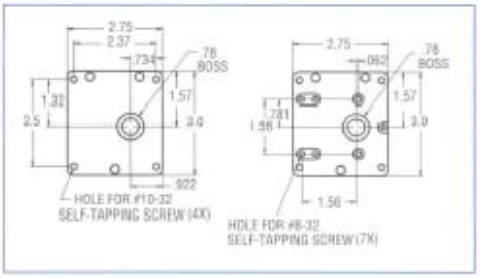
Options

- Shaded Pole Motor
- Disc Brake
- P.S.C. Motor
- Cone Brake
- Synchronous Motor
- Armature Brake
- Overload Protection
- Clutch

D10HA

Overhung load 7 lbs., .44" from output boss





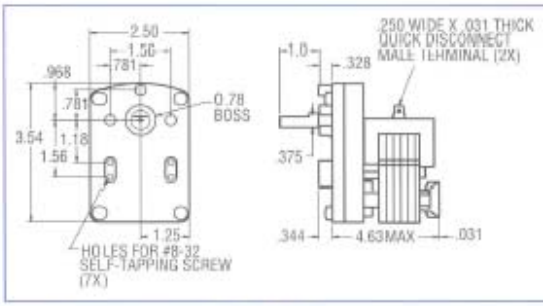
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		50	60	100	150	333	500	1000	3000
60 Hz.	F.L. Speed (RPM)	60	50	30	20	9	6	3	1
Reversing	F.L. Torque (in-lbs.)	1.9	2.2	3.8	5.5	13	21	45	75
Non-reversing	F.L. Torque (in-lbs.)	4.6	5.5	9	14	30	52	75	75

Options

- Shaded Pole Motor
- Disc Brake
- P.S.C. Motor
- Cone Brake
- Synchronous Motor
- Armature Brake
- Overload Protection
- Clutch

D1H/L

Overhung load 7 lbs., .44" from output boss



Alternate mountings are available.

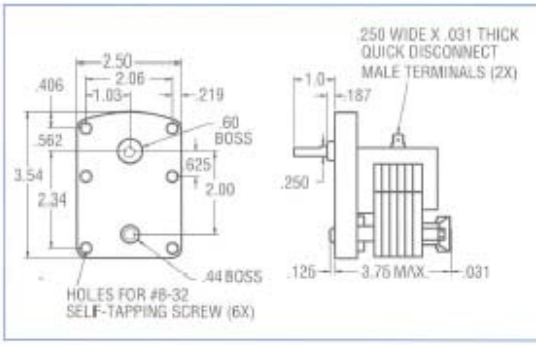
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		17	25	32	50	59	86	150	250	500	750
60 Hz.	F.L. Speed (RPM)	175	120	95	60	51	35	20	12	6	4
Reversing	F.L. Torque (in-lbs.)	0.7	0.9	1.1	2	2	3	6	9	21	28
Non-reversing	F.L. Torque (in-lbs.)	1.6	2.2	4.2	5	6	8	14	23	75	75

Options

- Shaded Pole Motor
- Disc Brake
- P.S.C. Motor
- Cone Brake
- Overload Protection
- Armature Brake
- Double Output Shaft
- Clutch

D1P

Overhung load 3.5 lbs., .44" from output boss



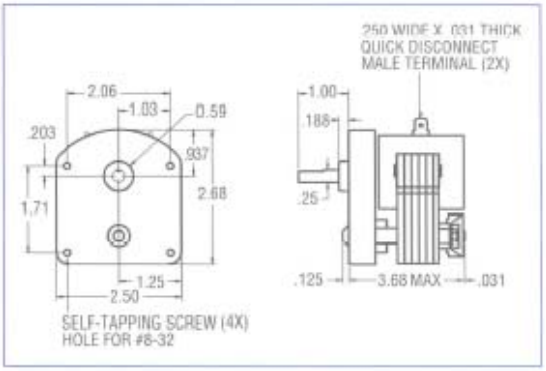
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		17	25	32	50	59	86	150	250	500	750
60 Hz.	F.L. Speed (RPM)	175	120	95	60	51	35	20	12	6	4
Reversing	F.L. Torque (in-lbs.)	0.7	0.9	1.1	2	2	3	6	9	21	28
Non-reversing	F.L. Torque (in-lbs.)	1.6	2.2	4.2	5	6	8	14	23	45	45

Options

- Shaded Pole Motor
- Cone Brake
- P.S.C. Motor
- Armature Brake
- Overload Protection
- Clutch
- Disc Brake

D3PL

Overhung load 3.5 lbs., .44" from output boss



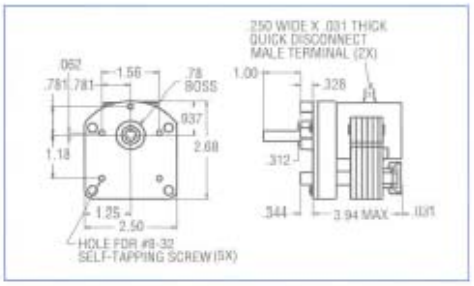
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		12	17	25	30	38	50	75	100
60 Hz.	F.L. Speed (RPM)	250	180	120	100	80	60	40	30
Reversing	F.L. Torque (in-lbs.)	0.4	0.7	0.9	1.1	1.4	2	3	4
Non-reversing	F.L. Torque (in-lbs.)	1.2	1.6	2.2	2.8	3.5	5	7	9

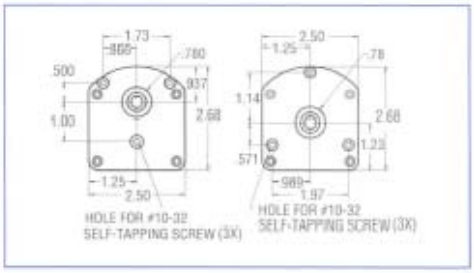
Options

- Shaded Pole Motor
- P.S.C. Motor
- Overload Protection
- Disc Brake
- Cone Brake
- Armature Brake
- Clutch

D3H

Overhung load 7 lbs., .44" from output boss





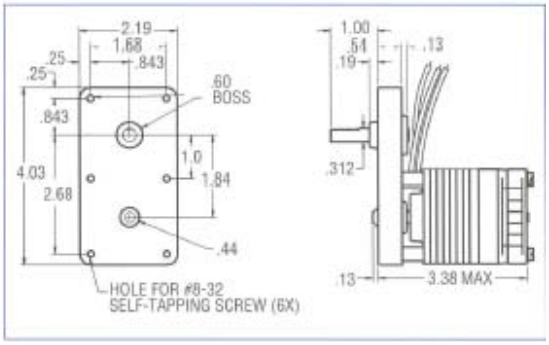
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		12	17	25	30	38	50	75	100
60 Hz.	F.L. Speed (RPM)	250	180	120	100	80	60	40	30
Reversing	F.L. Torque (in-lbs.)	0.4	0.7	0.9	1.1	1.4	2	3	4
Non-reversing	F.L. Torque (in-lbs.)	1.2	1.6	2.2	2.8	3.5	5	7	9

Options

- Shaded Pole Motor
- P.S.C. Motor
- Overload Protection
- Disc Brake
- Cone Brake
- Armature Brake
- Clutch

D14

Overhung load 3.5 lbs., .44" from output boss

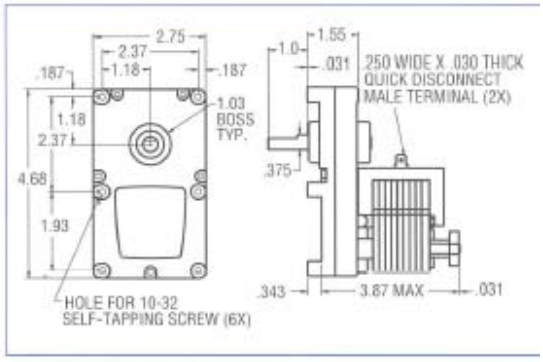


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios						
		31	59	90	125	173	250	439
2 Pole 60 Hz.	F.L. Speed (RPM)	98	55	36	25	18	12	7
	F.L. Torque (in-lbs.)	1.5	2.6	4	6	8	11	18

Options
- P.S.C. Motor
- Cone Brake
- Overload Protection
- Clutch
- Disc Brake

D9

Overhung load 7 lbs., .44" from output boss

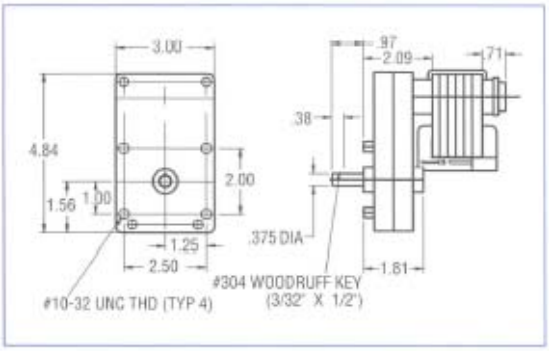


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios					
		125	250	500	750	1500	3000
60 Hz. Reversing	F.L. Speed (RPM)	24	12	6	4	2	1
	F.L. Torque (in-lbs.)	4.5	9	21	28	56	112
Non-reversing	F.L. Torque (in-lbs.)	17	35	79	105	200	200

Options
- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Disc Brake
- Synchronous Motor
- Cone Brake
- Double Output Shaft
- Armature Brake
- Clutch

VW31S

Overhung load 50 lbs., .44" from output boss



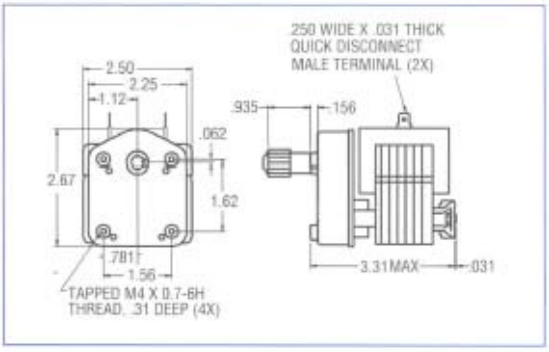
Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		26	56	105	158	270	510
2 Pole 60 Hz.	F.L. Speed (RPM)	120	55	30	20	12	6
	F.L. Torque (in-lbs.)	5.5	12	21	31	53	100

Options

- Shaded Pole Motor
- Solenoid Brake
- Overload Protection
- Double Output Shaft
- Disc Brake

W1

Overhung load 50 lbs., .44" from output boss



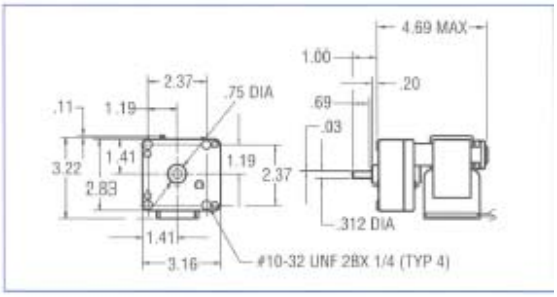
Input Motor	Gearmotor Characteristics	Nominal Gear Ratios		
		20	25	30
60 Hz.	F.L. Speed (RPM)	150	120	100
Non-reversing	F.L. Torque (in-lbs.)	1.9	2.2	2.8

Options

- Shaded Pole Motor
- Cone Brake
- Overload Protection
- Armature Brake
- Disc Brake
- Clutch

VW11

Overhung load 50 lbs., .44" from output boss



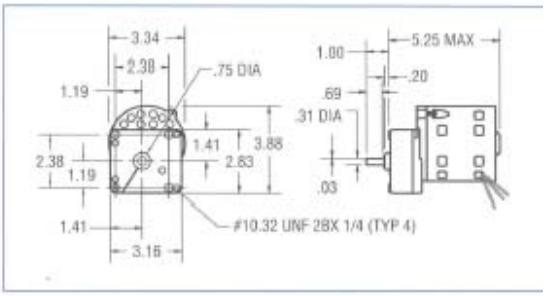
Input Motor	Gearmotor Characteristics	Standard Gear Ratios								
		15	24	48	96	149	250	495	1471	2965
2 Pole 60 Hz.	F.L. Speed (RPM)	200	120	60	30	20	12	6	2	1
	F.L. Torque (in-lbs.)	3	5	9	18	26	43	50	50	50

Options

- Shaded Pole Motor
- Disc Brake
- Overload Protection
- Solenoid Brake
- Open or closed construction

VW14

Overhung load 50 lbs., .44" from output boss



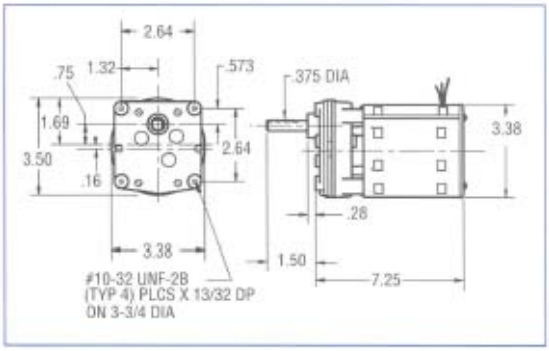
Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		18	31	50	63	98	161	314	482	975	1780
2 Pole 60 Hz.	F.L. Speed (RPM)	167	97	60	48	33	21	11	7	3.5	2
	F.L. Torque (in-lbs.)	12	19	30	37	50	50	50	50	50	50
4 Pole 60 Hz.	F.L. Speed (RPM)	89	52	32	25	16	10	5	3	1.6	1
	F.L. Torque (in-lbs.)	12	19	30	37	50	50	50	50	50	50

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW80

Overhung load 75 lbs., .60" from output boss



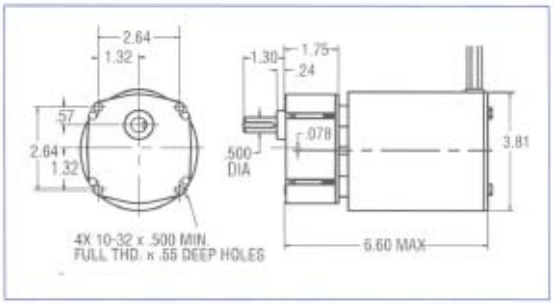
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		9.3	14	19	29	54
2 Pole 60 Hz.	F.L. Speed (RPM)	353	235	173	110	63
	F.L. Torque (in-lbs.)	14	22	33	47	50
4 Pole 60 Hz.	F.L. Speed (RPM)	167	115	84	54	31
	F.L. Torque (in-lbs.)	30	44	50	50	50

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW52

Overhung load 100 lbs., .50" from output boss



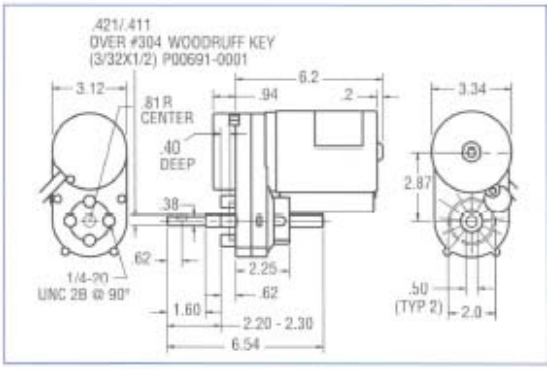
Input Motor	Gearmotor Characteristics	Standard Gear Ratios										
		10	13	19	25	37	49	72	96	139	186	271
4 Pole 60 Hz.	F.L. Speed (RPM)	165	127	87	66	45	34	23	17	12	9	6
	F.L. Torque (in-lbs.)	26	34	49	64	86	100	100	100	100	100	100

Options

- Shaded Pole
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3 Phase Motor

US76

Overhung load 100 lbs., 1" from output boss; Intermittent Duty



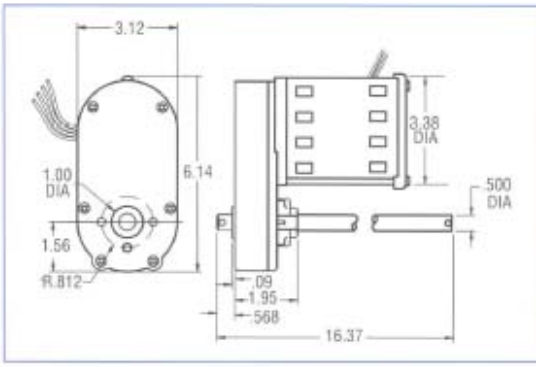
Input Motor	Gearmotor Characteristic	Standard Gear Ratios					
		4	7	11	16	19	28
2 Pole 60 Hz.	F.L. Speed (RPM)	800	434	280	196	168	114
	F.L. Torque (in-lbs.)	6	11	16	24	28	39
4 Pole 60 Hz.	F.L. Speed (RPM)	400	217	140	98	84	57
	F.L. Torque (in-lbs.)	12	22	33	48	57	78

Options

- P.S.C. Motor
- Potentiometer
- Overload Protection
- Double Output Shaft
- Limit Switches
- Reed Switch

VW76

Overhung load 100 lbs., 1" from output boss; Intermittent Duty



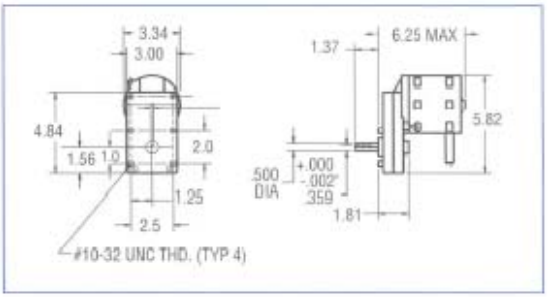
Input Motor	Gearmotor Characteristic	Standard Gear Ratios								
		4	7	16	19	28	42	52	61	72
2 Pole 60 HZ.	F.L. Speed (RPM)	800	434	196	168	114	76	60	50	44
	F.L. Torque (in-lbs.)	6	11	24	28	39	50	70	85	85
4 Pole 60 HZ.	F.L. Speed (RPM)	400	217	98	84	57	38	30	25	22
	F.L. Torque (in-lbs.)	12	22	48	57	78	100	140	150	150

Options

- P.S.C. Motor
- Limit Switches
- Overload Protection
- Reed Switch
- Solenoid Brake
- Opto Switch
- Electro-Magnetic Brake
- Potentiometer
- Conduit Box
- Double Output Shaft

VW31P

Overhung load 50 lbs., .44" from output boss



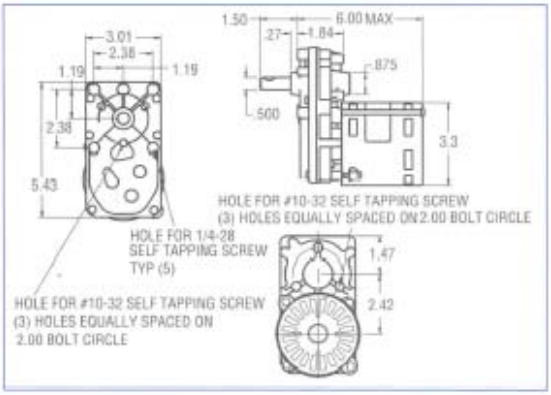
Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		16	34	65	97	163	311
2 Pole 60 Hz.	F.L. Speed (RPM)	200	94	49	33	19	11
	F.L. Torque (in-lbs.)	13	27	48	74	124	150
4 Pole 60 Hz.	F.L. Speed (RPM)	100	47	25	16	10	5
	F.L. Torque (in-lbs.)	13	27	48	74	124	150

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor
- Double Output Shaft

VW53

Overhung load 7 lbs., .44" from output boss



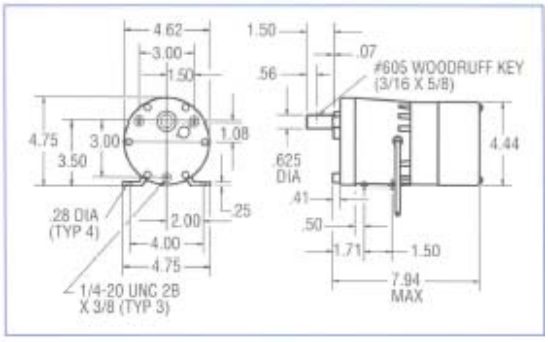
Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		18	25	30	50	61	86	112	125	161	203
2 Pole 60 HZ.	F.L. Speed (RPM)	174	130	107	64	53	37	29	26	20	16
	F.L. Torque (in-lbs.)	14	18	22	37	46	58	68	68	79	90
4 Pole 60 HZ.	F.L. Speed (RPM)	87	65	53	32	26	19	14	13	10	8
	F.L. Torque (in-lbs.)	18	24	30	50	61	77	90	91	105	119

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor
- Double Output Shaft

VW08

Overhung load 150 lbs., .94" from output boss



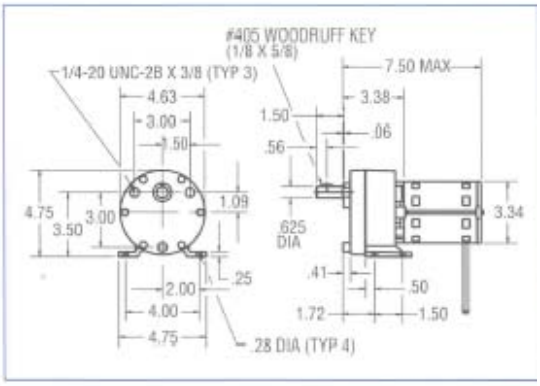
Input Motor	Gearmotor Characteristics	Standard Gear Ratios						
		27	52	78	128	250	739	1446
4 Pole 60 Hz.	F.L. Speed (RPM)	58	32	22	14	7	2.4	1.2
	F.L. Torque (in-lbs.)	100	150	150	150	150	150	150

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW88

Overhung load 150 lbs., .94" from output boss



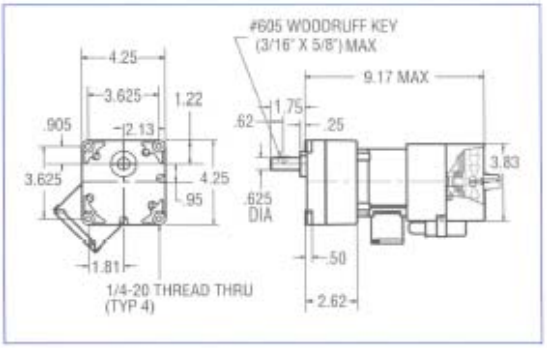
Input Motor	Gearmotor Characteristics	Standard Gear Ratios								
		7	14	27	52	78	128	250	739	1446
2 Pole 60 HZ.	F.L. Speed (RPM)	441	224	120	62	41	26	14	5	2.4
	F.L. Torque (in-lbs.)	13	24	40	77	130	150	150	150	150
4 Pole 60 HZ.	F.L. Speed (RPM)	214	109	58	30	21	13	7.0	2.4	1.2
	F.L. Torque (in-lbs.)	24	43	67	130	150	150	150	150	150

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW89

Overhung load 150 lbs., .94" from output boss



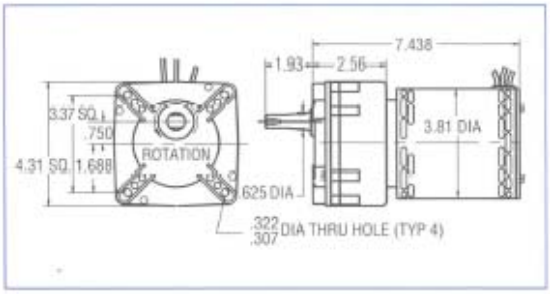
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		10	14	18	27	53
2 Pole 60 Hz.	F.L. Speed (RPM)	318	230	180	120	60
	F.L. Torque (in-lbs.)	16	22	29	43	86
4 Pole 60 Hz.	F.L. Speed (RPM)	159	115	90	60	30
	F.L. Torque (in-lbs.)	32	45	57	86	150

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW51

Overhung load 400 lbs., 1" from output boss



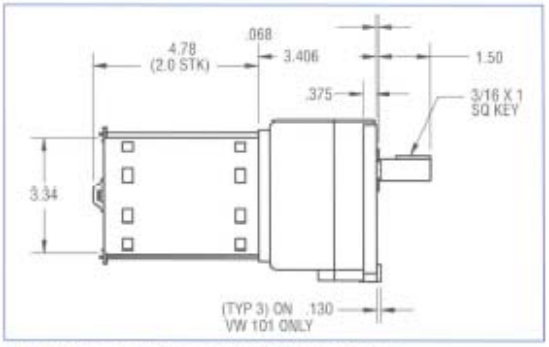
Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		10	15	21	26	37	55	75	107	131	162	198	264
2 Pole 60 HZ.	F.L. Speed (RPM)	294	199	146	114	81	54	39	28	23	19	15	11
	F.L. Torque (in-lbs.)	32	48	66	84	112	167	226	302	373	460	500	500
4 Pole 60 HZ.	F.L. Speed (RPM)	147	99	73	57	40	27	20	14	11	9	8	6
	F.L. Torque (in-lbs.)	64	96	130	165	224	332	452	500	500	500	500	500

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW100

Overhung load 400 lbs., 1" from output boss



Refer to page 15 for mounting instructions.

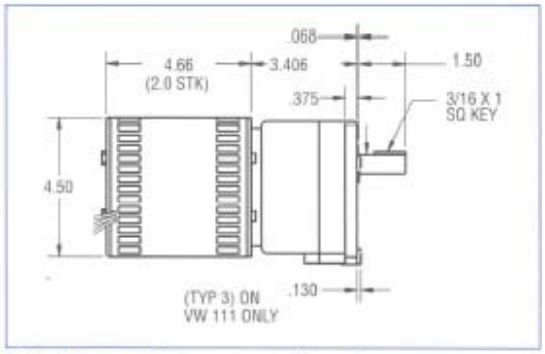
Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		10	15	21	26	37	55	75	107	131	162	198	264
2 Pole 60 HZ.	F.L. Speed (RPM)	314	212	156	122	86	58	42	30	24	20	16	12
	F.L. Torque (in-lbs.)	18	27	37	47	63	94	127	170	210	259	318	425
4 Pole 60 HZ.	F.L. Speed (RPM)	157	106	78	61	43	29	21	15	12	10	8	6
	F.L. Torque (in-lbs.)	36	54	73	93	126	187	254	340	420	500	500	500

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW110

Overhung load 400 lbs., 1" from output boss



Refer to page 15 for mounting instructions.

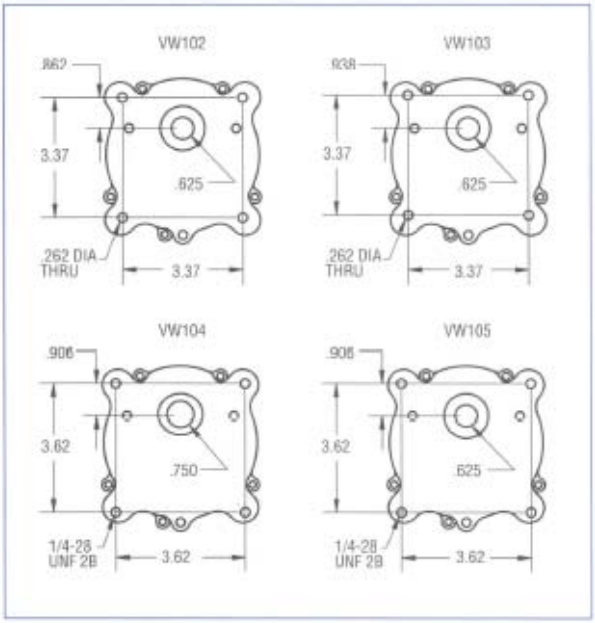
Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		6.9	10	14	18	25	38	51	80	109	134
2 Pole 60 HZ.	F.L. Speed (RPM)	464	313	230	182	127	85	63	40	30	24
	F.L. Torque (in-lbs.)	26	39	52	66	90	134	182	287	382	478
4 Pole 60 HZ.	F.L. Speed (RPM)	232	156	115	91	63	43	31	20	15	12
	F.L. Torque (in-lbs.)	52	77	105	130	180	265	360	500	500	500

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

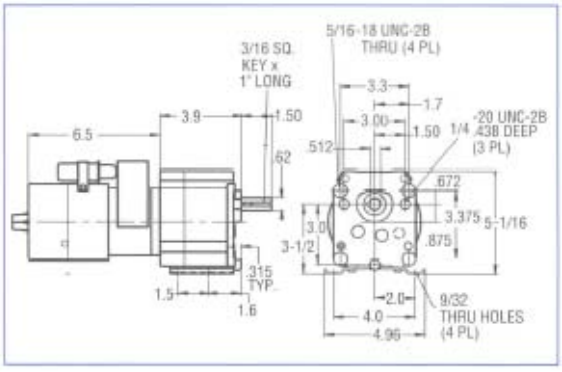
Genesis Mounting

The options at the right illustrate the available mounting configurations for the Genesis Style Gearmotors.



VW400

Overhung load 400 lbs., .75" from output boss



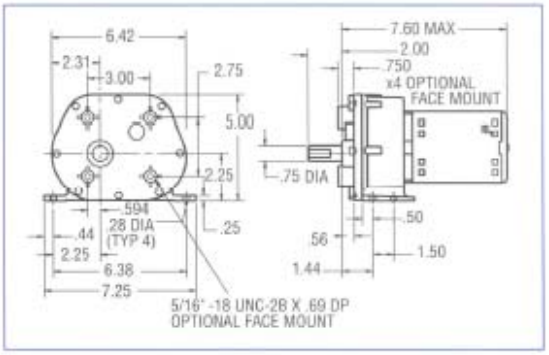
Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		5	11	13	19	30	43	65	80	130	190	265	400
4 Pole 60 Hz.	F.L. Speed (RPM)	345	157	135	90	60	40	27	21	13.5	9	7	6
	F.L. Torque (in-lbs.)	14	29	34	50	75	108	163	200	325	425	425	425

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW84

Overhung load 250 lbs., .87" from output boss



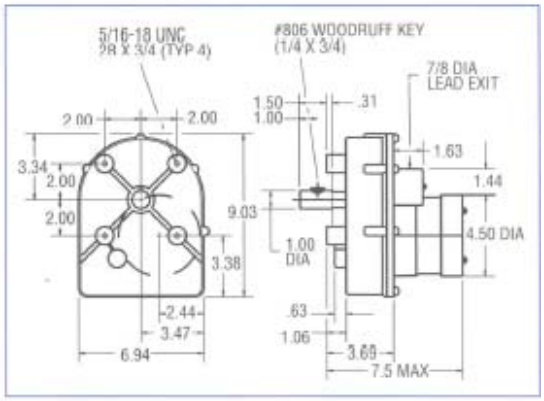
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		32	56	81	133	267
2 Pole 60 Hz.	F.L. Speed (RPM)	94	54	40	24	12
	F.L. Torque (in-lbs.)	54	94	135	223	450
4 Pole 60 Hz.	F.L. Speed (RPM)	47	27	19	12	6
	F.L. Torque (in-lbs.)	107	187	275	450	600

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW47

Overhung load 550 lbs., .75" from output boss



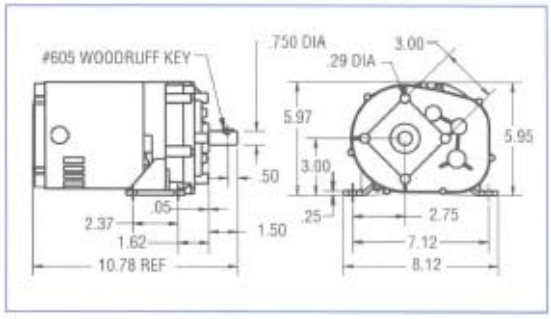
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		131	249	540	827	1586
2 Pole 60 Hz.	F.L. Speed (RPM)	25	12	6	4	2
	F.L. Torque (in-lbs.)	375	750	1400	950	1900
2 Pole 60 Hz.	F.L. Speed (RPM)	12	6	3	2	1
	F.L. Torque (in-lbs.)	625	1190	2400	1900	3000

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW20

Overhung load 75 lbs., .60" from output boss



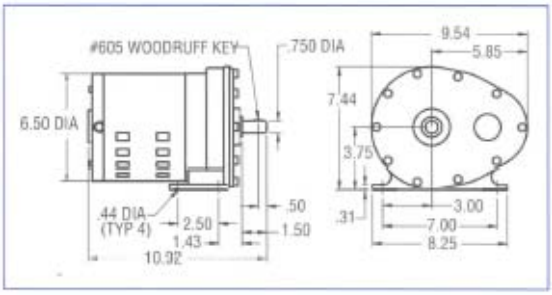
Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		14	19	28	42	57	92	143	290
4 Pole 60 Hz.	F.L. Speed (RPM)	123	89	63	41	30	20	12	6
	F.L. Torque (in-lbs.)	112	155	220	336	413	600	600	600

Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Conduit Box
- Capacitor Start Motor
- 3-Phase Motor

VW40

Overhung load 400 lbs., 1" from output boss



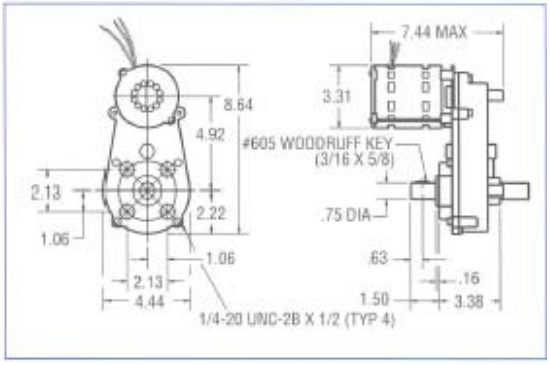
Input Motor	Gearmotor Characteristics	Standard Gear Ratios			
		14	19	29	56
4 Pole 60 Hz.	F.L. Speed (RPM)	123	91	59	31
	F.L. Torque (in-lbs.)	208	282	430	800

Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Conduit Box
- Capacitor Start Motor
- 3-Phase Motor

VW62

Overhung load 300 lbs., .87" from output boss



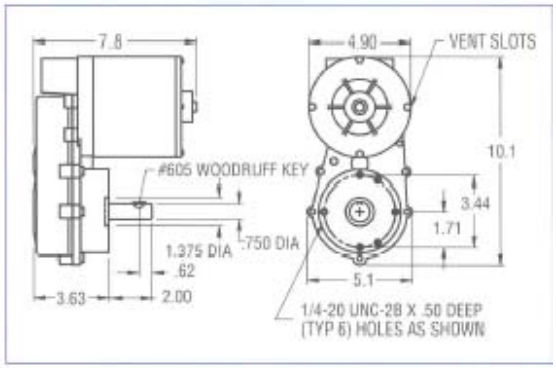
Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		32	56	81	133	267	1458*	2261*	4539*
2 Pole 60 Hz.	F.L. Speed (RPM)	94	54	40	24	12	2.3	1.5	0.7
	F.L. Torque (in-lbs.)	54	94	135	223	450	600	600	600
4 Pole 60 Hz.	F.L. Speed (RPM)	47	27	19	12	6	1.2	0.8	0.4
	F.L. Torque (in-lbs.)	107	187	275	450	600	600	600	600

Options

- Shaded Pole
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Double Output Shaft
- 3-Phase Motor
- Conduit Box

VW58

Overhung load 300 lbs., .87" from output boss



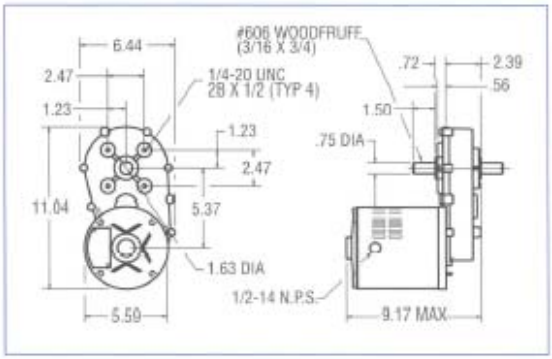
Input Motor	Gearmotor Characteristics	Standard Gear Ratios	
		142	205
4 Pole 60 Hz.	F.L. Speed (RPM)	12	8.4
	F.L. Torque (in-lbs.)	500	725

Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Double Output Shaft
- 3-Phase Motor
- Conduit Box

VW34

Overhung load 300 lbs., 1" from output boss



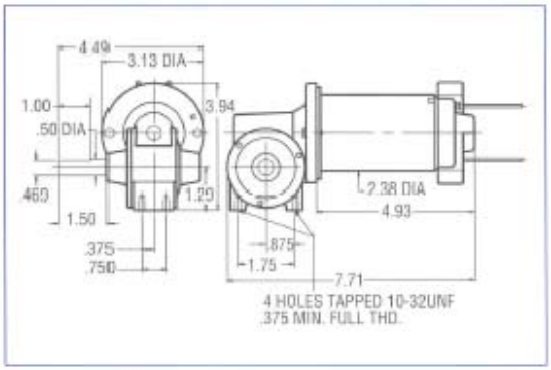
Input Motor	Gearmotor Characteristics	Standard Gear Ratios		
		143	214	290
4 Pole 60 Hz.	F.L. Speed (RPM)	12	8	6
	F.L. Torque (in-lbs.)	950	1400	1500

Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Double Output Shaft
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW26

Overhung load 150 lbs., .94" from output boss



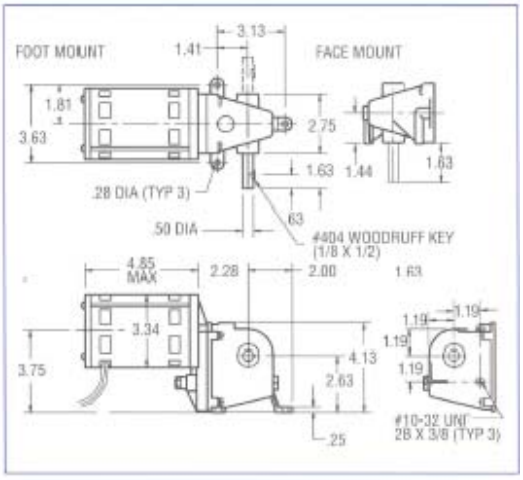
Input Motor	Gearmotor Characteristics	Standard Gear Ratios								
		2	4	10	15	20	30	40	50	60
4 Pole 60 Hz.	F.L. Speed (RPM)	810	405	162	108	81	54	41	32	27
	F.L. Torque (in-lbs.)	2	4	13	17	23	26	28	30	38

Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Double Output Shaft
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

VW33

Overhung load 200 lbs., 1" from output boss



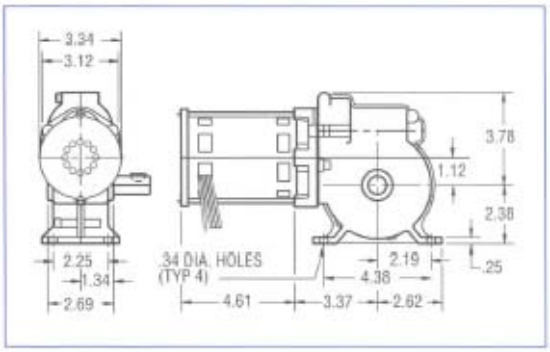
Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		37	70	167	275	525	1255
2 Pole 60 Hz.	F.L. Speed (RPM)	85	45	20	12	6	3
	F.L. Torque (in-lbs.)	45	85	100	100	200	250
4 Pole 60 Hz.	F.L. Speed (RPM)	42	22	10	6	3	1.4
	F.L. Torque (in-lbs.)	89	170	200	200	250	250

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Double Output Shaft
- 3-Phase Motor
- Conduit Box

VW07

Overhung load 250 lbs., 1" from output boss



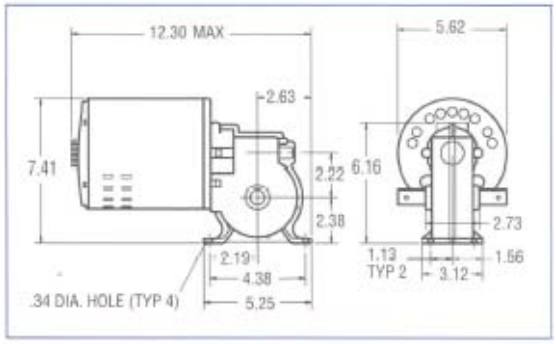
Input Motor	Gearmotor Characteristics	Standard Gear Ratios	
		148	295
2 Pole 60 Hz.	F.L. Speed (RPM)	22	11
	F.L. Torque (in-lbs.)	140	185
4 Pole 60 Hz.	F.L. Speed (RPM)	11	5.5
	F.L. Torque (in-lbs.)	280	370

Options

- Shaded Pole Motor
- Overload Protection
- P.S.C. Motor
- Solenoid Brake
- Split-Phase Motor
- Electro-Magnetic Brake
- Capacitor Start Motor
- Double Output Shaft
- 3-Phase Motor
- Conduit Box

VW77

Overhung load 250 lbs., 1" from output boss



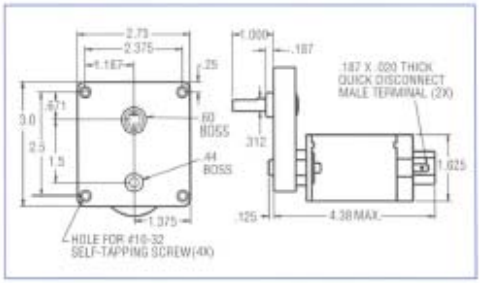
Input Motor	Gearmotor Characteristics	Standard Gear Ratios	
		20	40
4 Pole 60 Hz.	F.L. Speed (RPM)	86	43
	F.L. Torque (in-lbs.)	100	175

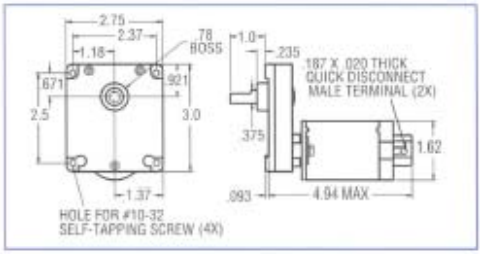
Options

- P.S.C. Motor
- Overload Protection
- Split-Phase Motor
- Double Output Shaft
- Capacitor Start Motor
- Conduit Box
- 3-Phase Motor

D10P/L

Overhung load 3.5 lbs., .44" from output boss



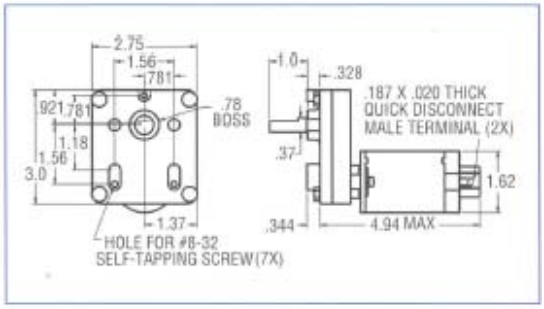


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios						
		24	30	40	60	100	150	300
6000 RPM	F.L. Speed (RPM)	250	200	150	100	60	40	20
	Start Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	28

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder

D10H

Overhung load 7 lbs., .44" from output boss

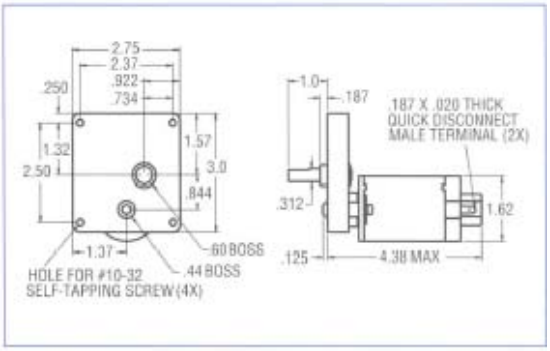


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		24	30	40	60	100	150	333	500	1000	1500
6000 RPM	F.L. Speed (RPM)	250	200	150	100	60	40	18	12	6	4
	F.L. Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	30	52	75	75

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder

D10PA

Overhung load 3.5 lbs., .44" from output boss

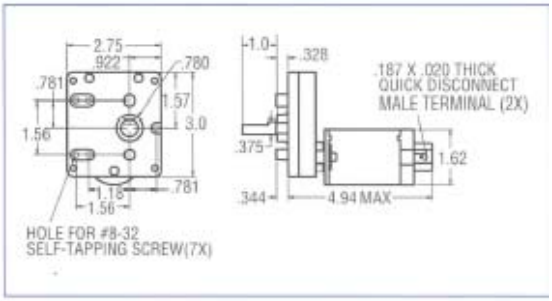


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		24	30	40	60	100	150	333	500	1000	3000
6000 RPM	F.L. Speed (RPM)	250	200	150	100	60	40	18	12	6	2
	F.L. Torque (in-lbs.)	2.2	2.8	3.6	5.5	9	14	30	45	45	45

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder

D10HA

Overhung load 7 lbs., .44" from output boss

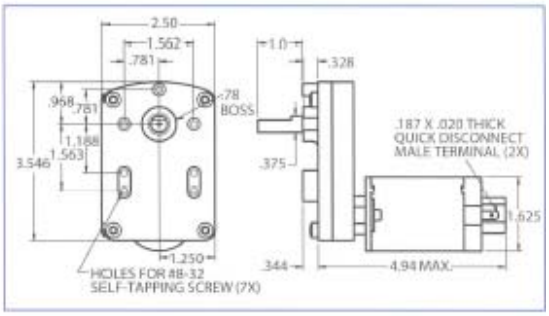


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		50	60	100	150	333	500	1000	3000
6000 RPM	F.L. Speed (RPM)	120	100	60	40	18	12	6	2
	F.L. Torque (in-lbs.)	4.6	5.5	9	14	30	52	75	75

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder

D1H/L

Overhung load 7 lbs.
.44" from output boss

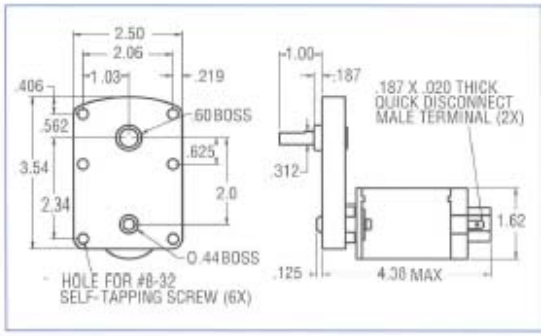


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		17	25	32	50	59	86	150	250	500	750
6000 RPM	F.L. Speed (RPM)	350	240	190	120	102	70	40	24	12	8
	F.L. Torque (in-lbs.)	1.6	2.2	4.2	5	6	8	14	23	75	75

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder • Double Output Shaft

D1P

Overhung load 3.5 lbs.
.44" from output boss

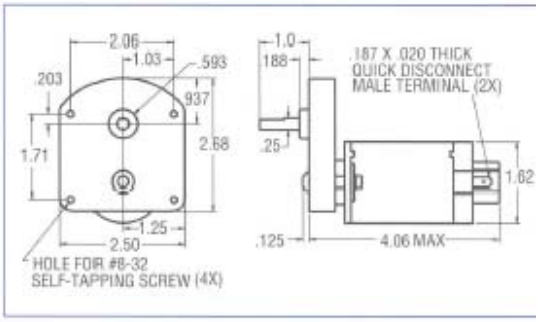


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios									
		17	25	32	50	59	86	150	250	500	750
6000 RPM	F.L. Speed (RPM)	350	240	190	120	102	70	40	24	12	8
	F.L. Torque (in-lbs.)	1.6	2.2	4.2	5	6	8	14	23	45	45

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder • Double Output Shaft

D3P/L

Overhung load 3.5 lbs.
.44" from output boss

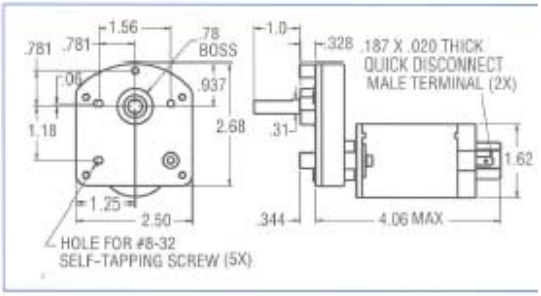


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		12	17	25	30	38	50	75	100
6000 RPM	F.L. Speed (RPM)	500	360	240	200	160	120	80	60
	F.L. Torque (in-lbs.)	1.2	1.6	2.2	2.8	3.5	5	7	9

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder • Double Output Shaft

D3H

Overhung load 7 lbs.,
.44" from output boss

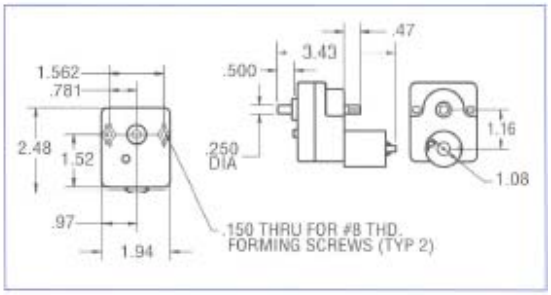


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios							
		12	17	25	30	38	50	75	100
6000 RPM	F.L. Speed (RPM)	500	360	240	200	160	120	80	60
	F.L. Torque (in-lbs.)	1.2	1.6	2.2	2.8	3.5	5	7	9

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder • Double Output Shaft

VW63

Overhung load 25 lbs., .50" from output boss

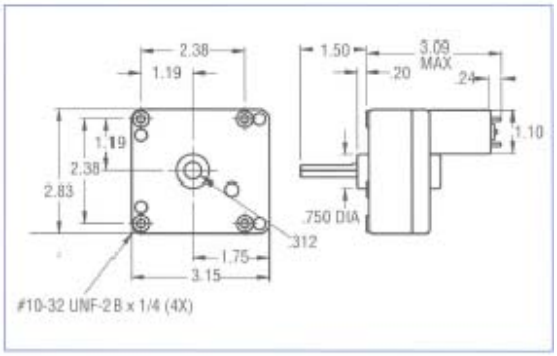


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios						
		59	101	141	262	491	842	1273
2850 RPM	F.L. Speed (RPM)	49	28	20	11	6	4	3
	F.L. Torque (in-lbs.)	1.0	1.6	2.3	4.3	6.3	6.3	6.3

Options • Available 12 or 24 Volt • Internal Brushes • Double Output Shaft

VW15

Overhung load 50 lbs., .44" from output boss

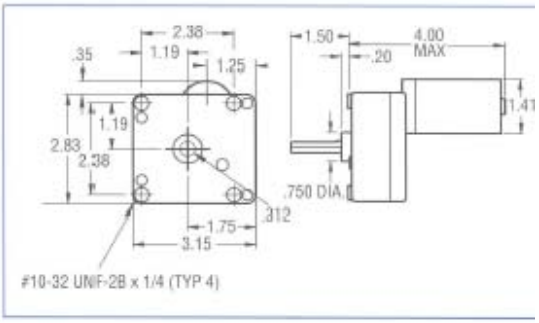


Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		33	50	100	155	260	515	1531	3085
2850 RPM	F.L. Speed (RPM)	87	57	29	18	11	5.6	2	1
	F.L. Torque (in-lbs.)	0.6	1	2	3	4	8	23	46

Options • Available 12 or 24 Volt • Internal Brushes • Double Output Shaft

VW16

Overhung load 50 lbs., .44" from output boss

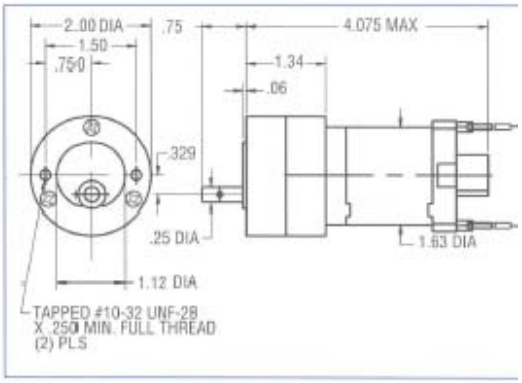


Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		19	31	76	103	169	329	1048	1811
3700 RPM	F.L. Speed (RPM)	195	119	49	36	22	11	3.5	2
	F.L. Torque (in-lbs.)	2	3	8	11	18	36	50	50

Options • Available 12 or 24 Volt • Internal Brushes • Double Output Shaft

D25

Overhung load 2 lbs., .25" from output boss

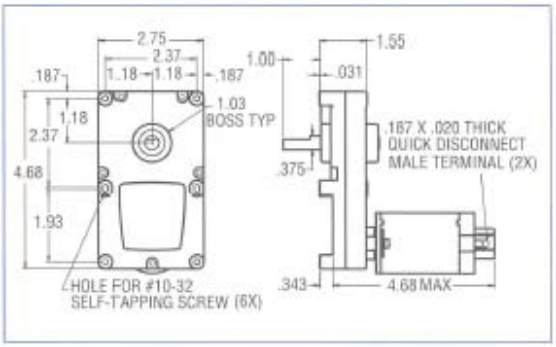


Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		8.3	15	33	79	133	300	533	1200	2133	5071
2900 RPM	F.L. Speed (RPM)	355	200	85	35	20	10	6	2.5	1.5	0.6
	F.L. Torque (oz.-in.)	4.5	8	18	43	63	90	90	90	90	40

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder

D9

Overhung load 75 lbs., .75" from output boss

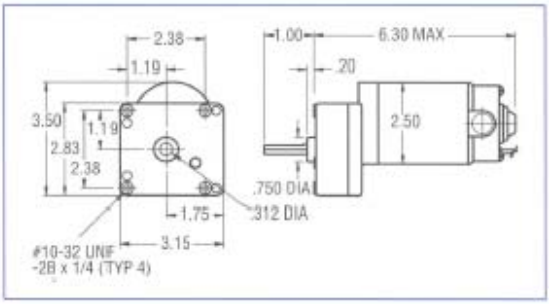


Input Motor	Gearmotor Characteristics	Nominal Gear Ratios					
		125	250	500	750	1500	3000
6000 RPM	F.L. Speed (RPM)	48	24	12	8	4	2
	F.L. Torque (in-lbs.)	17	35	79	105	200	200

Options • Available 12, 24 or 36 Volt • Replaceable Brushes • Hall Effect Encoder • Double Output Shaft

VW83

Overhung load 50 lbs., .44" from output boss

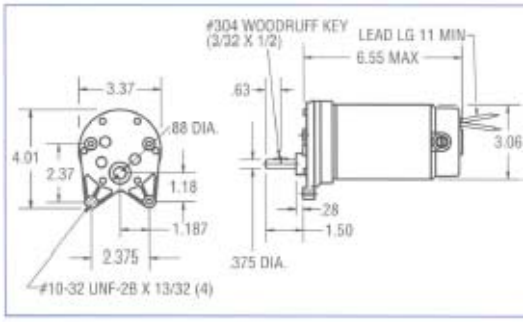


Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		18	31	50	63	98	161	314	482	975	1780
3000 RPM	F.L. Speed (RPM)	166	96	60	47	31	19	10	7	3.4	2
	F.L. Torque (in-lbs.)	11	18	28	36	50	50	50	50	50	50

Options • Available 12 - 180 Volt • Replaceable Brushes • Internal Brushes • Integral Speed Control

VW70

Overhung load 75 lbs., .60" from output boss



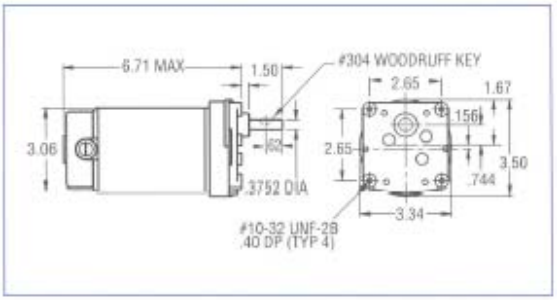
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		9.3	14	19	29	54
3300 RPM	F.L. Speed (RPM)	356	244	178	113	62
	F.L. Torque (in-lbs.)	11	16	22	35	50
1650 RPM	F.L. Speed (RPM)	178	122	89	58	34
	F.L. Torque (in-lbs.)	19	27	38	50	50

Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW80

Overhung load 75 lbs., .60" from output boss



Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		9.3	14	19	29	54
3300 RPM	F.L. Speed (RPM)	356	244	178	113	62
	F.L. Torque (in-lbs.)	11	16	22	35	50
1650 RPM	F.L. Speed (RPM)	178	122	89	58	34
	F.L. Torque (in-lbs.)	19	27	38	50	50

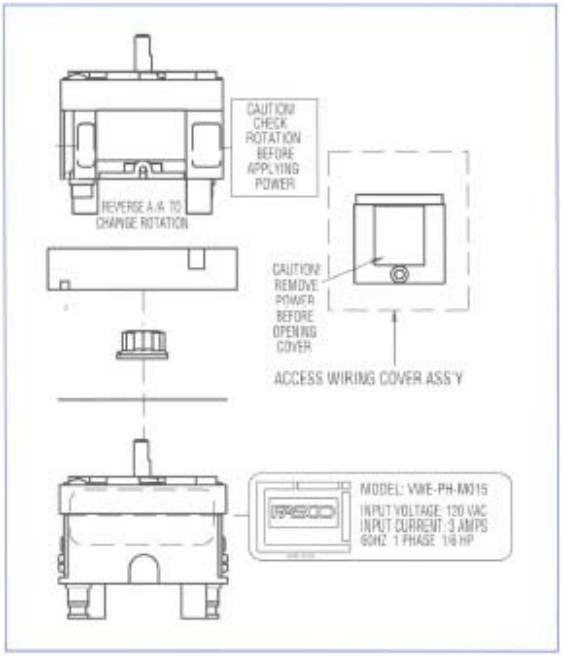
Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

Speed Control

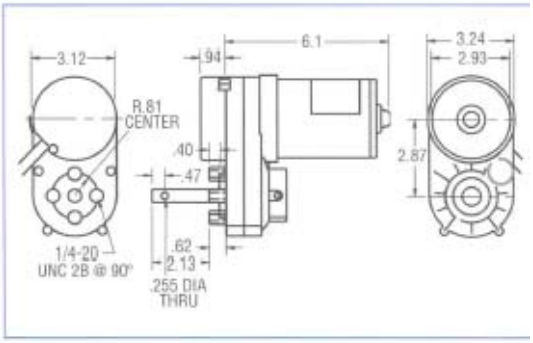
VWE-PH-M015
Motor Speed Control

- Input Voltage - 120 vac/60 Hz
- Max. Input Rating - 3 amps, 1/6 hp
- Output - 90 vdc full wave rectified
- Min/Max Speed Adjustment
- Max Torque Adjustment



US76

Overhung load 100 lbs., 1.0" from output boss; Intermittent Duty



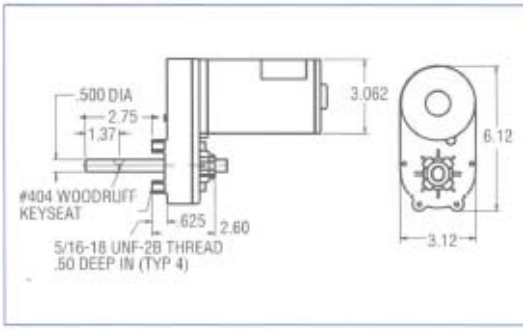
Input Motor	Gearmotor Characteristic	Standard Gear Ratios					
		4	7	11	16	19	28
3200 RPM	F.L. Speed (RPM)	800	434	280	196	168	114
	F.L. Torque (in-lbs.)	6	11	16	24	28	39
1600 RPM	F.L. Speed (RPM)	400	217	140	98	84	57
	F.L. Torque (in-lbs.)	12	22	33	48	57	78

Options

- Available 12 - 48 Volt
- Potentiometer
- Internal Brushes
- Double Output Shaft
- Limit Switches
- Reed Switch

VW76

Overhung load 100 lbs., 1.0" from output boss; Intermittent Duty



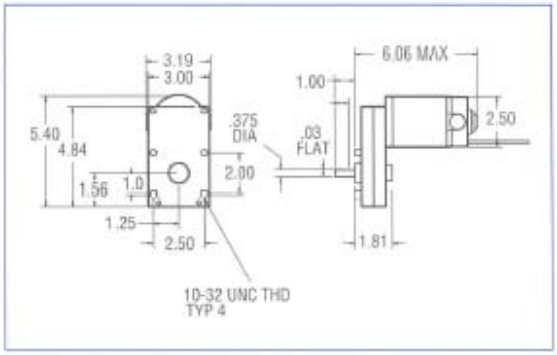
Input Motor	Gearmotor Characteristic	Standard Gear Ratios								
		4	7	16	19	28	42	52	61	72
3200 RPM	F.L. Speed (RPM)	800	434	196	168	114	76	60	50	44
	F.L. Torque (in-lbs.)	6	11	24	28	39	50	70	85	85
1600 RPM	F.L. Speed (RPM)	400	217	98	84	57	38	30	25	22
	F.L. Torque (in-lbs.)	12	22	48	57	78	100	140	150	150

Options

- Available 12 - 90 Volt
- Reed Switch
- Replaceable Brushes
- Opto Switch
- Internal Brushes
- Potentiometer
- Electro-Magnetic Brake
- Double Output Shaft
- Limit Switches
- Integral Speed Control

VW31

Overhung load 50 lbs., .44" from output boss

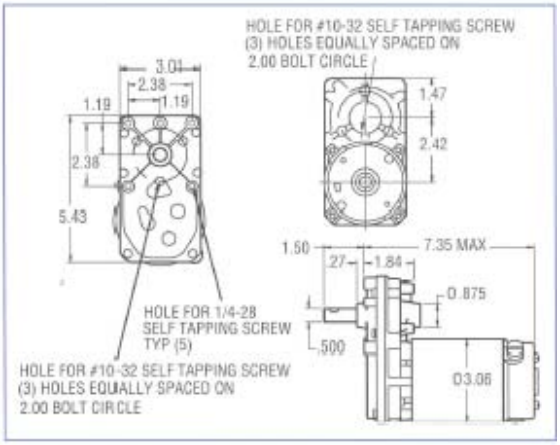


Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		16	34	65	97	163	311
3000 RPM	F.L. Speed (RPM)	188	88	46	31	18	10
	F.L. Torque (in-lbs.)	9	19	35	52	87	150

Options
- Available 12 - 180 Volt
- Double Output Shaft
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW53

Overhung load 7 lbs., .44" from output boss

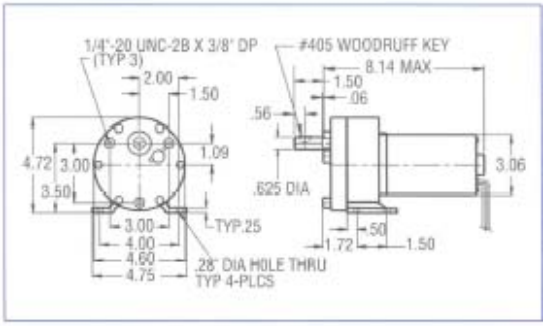


Input Motor	Gearmotor Characteristics	Standard Gear Ratios									
		18	25	30	50	61	86	112	125	161	203
1725 RPM	F.L. Speed (RPM)	94	70	58	35	28	20	15	14	11	8
	F.L. Torque (in-lbs.)	20	27	33	54	66	84	99	99	115	130

Options
- Available 12-180 Volt
- Replaceable Brushes
- Double Output Shaft

VW88

Overhung load 150 lbs., .94" from output boss



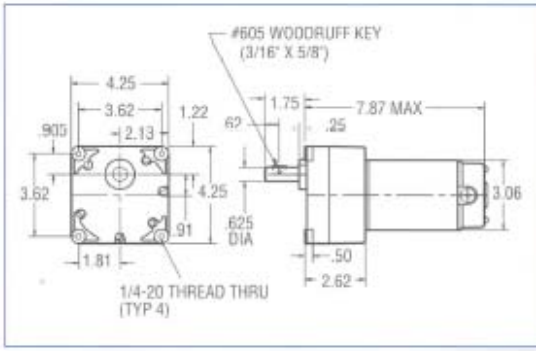
Input Motor	Gearmotor Characteristics	Standard Gear Ratios								
		7.2	14.3	27	52	78	128	250	739	1446
3300 RPM	F.L. Speed (RPM)	455	231	123	64	42	26	14	4.6	2.4
	F.L. Torque (in-lbs.)	11	20	36	70	102	150	150	150	150
1650 RPM	F.L. Speed (RPM)	228	115	62	32	22	13	7	2.5	1.3
	F.L. Torque (in-lbs.)	18	34	61	119	150	150	150	150	150

Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW89

Overhung load 150 lbs., .94" from output boss



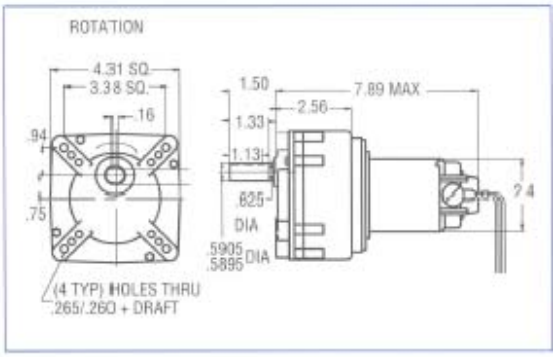
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		10	14	18	27	53
3300 RPM	F.L. Speed (RPM)	330	236	183	122	62
	F.L. Torque (in-lbs.)	12	17	21	32	63
1650 RPM	F.L. Speed (RPM)	165	118	92	61	31
	F.L. Torque (in-lbs.)	20	28	36	54	106

Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW51

Overhung load 200 lbs., .75" from output boss

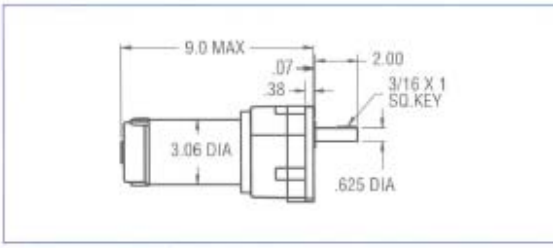


Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		13	19	25	32	46	69	93	132	162	200	245	327
2000 RPM	F.L. Speed (RPM)	159	107	79	62	43	29	21	15	12	10	8	6
	F.L. Torque (in-lbs.)	24	35	48	61	79	117	159	202	248	306	375	500

Options • Available 12 - 180 Volt • Replaceable Brushes

VW130

Overhung load 400 lbs., .75" from output boss



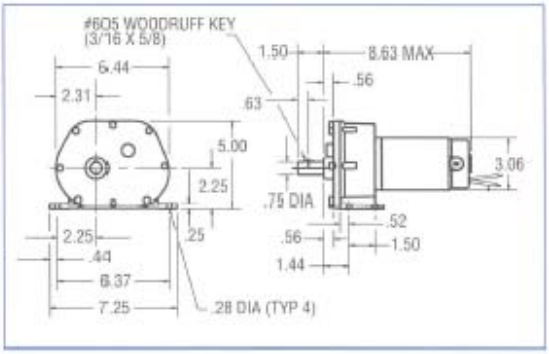
Refer to page 15 for mounting instructions.

Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		10	15	21	26	37	55	75	107	131	162	198	264
3200 RPM	F.L. Speed (RPM)	314	212	156	122	86	58	42	30	24	20	16	12
	F.L. Torque (in-lbs.)	18	27	37	47	63	94	127	170	210	259	324	425
1600 RPM	F.L. Speed (RPM)	157	106	78	61	43	29	21	15	12	10	8	6
	F.L. Torque (in-lbs.)	30	45	61	78	105	156	212	283	350	432	500	500

Options • Available 12 - 90 Volt • Replaceable Brushes • Internal Brushes • Electro-Magnetic Brake • Integral Speed Control

VW84

Overhung load 250 lbs., .87" from output boss



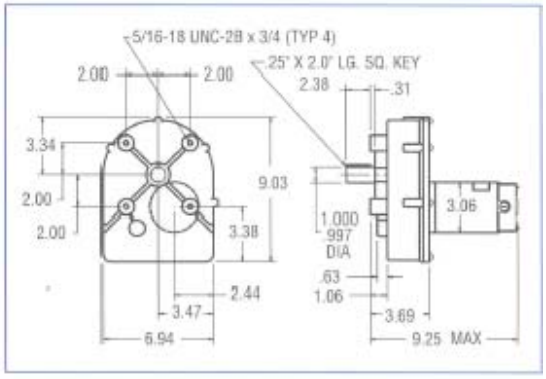
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		32	56	81	133	267
3300 RPM	F.L. Speed (RPM)	103	58	40	24	12
	F.L. Torque (in-lbs.)	39	68	98	162	325
1650 RPM	F.L. Speed (RPM)	51	29	20	12	6
	F.L. Torque (in-lbs.)	65	114	167	276	553

Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW47

Overhung load 550 lbs., .75" from output boss



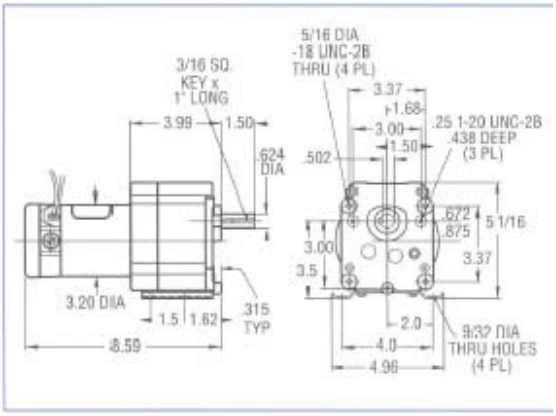
Input Motor	Gearmotor Characteristics	Standard Gear Ratios			
		249	540	827	1586
3300 RPM	F.L. Speed (RPM)	12	6	4	2
	F.L. Torque (in-lbs.)	750	1400	950	1900
1650 RPM	F.L. Speed (RPM)	6	3	2	1
	F.L. Torque (in-lbs.)	1033	2084	1650	3000

Options

- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Replaceable Brushes
- Integral Speed Control
- Internal Brushes

VW400

Overhung load 400 lbs., .75" from output boss

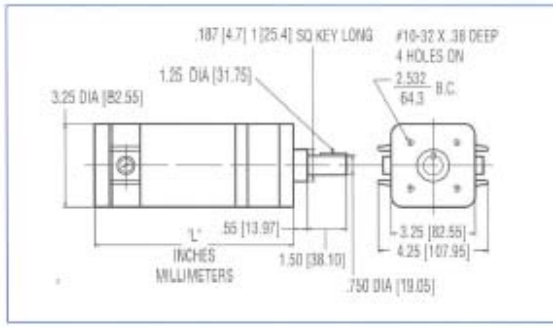


Input Motor	Gearmotor Characteristics	Standard Gear Ratios											
		5	11	13	19	30	43	65	80	130	190	265	400
1725 RPM	F.L. Speed (RPM)	345	157	135	90	60	40	27	21	13.5	9	7	6
	F.L. Torque (in-lbs.)	28	58	68	100	150	215	325	370	375	425	425	425

Options • Available 12 - 180 Volt • Replaceable Brushes • Electro-Magnetic Brake

VW375

Overhung load 200 lbs., .75" from output boss

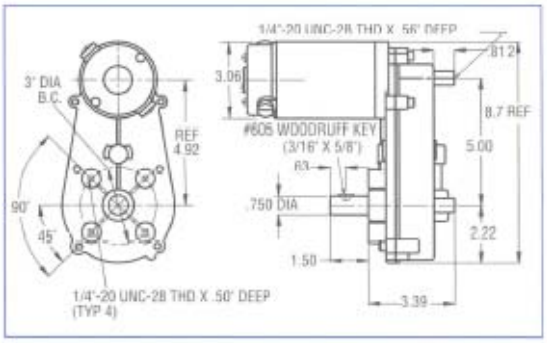


Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		6	36	216	1296	7776
1725 RPM	F.L. Speed (RPM)	288	48	8	1.3	0.02
	F.L. Torque (in-lbs.)	35	200	375	375	375

Options • Available 12 - 180 Volt • Replaceable Brushes • Electro-Magnetic Brake

VW62

Overhung load 300 lbs., .87" from output boss



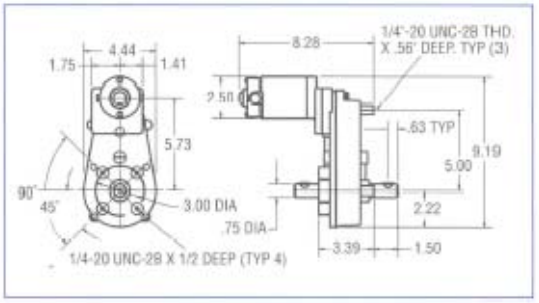
Input Motor	Gearmotor Characteristics	Standard Gear Ratios				
		32	56	81	133	267
3300 RPM	F.L. Speed (RPM)	103	58	40	24	12
	F.L. Torque (in-lbs.)	39	68	98	162	325
1650 RPM	F.L. Speed (RPM)	51	29	20	12	6
	F.L. Torque (in-lbs.)	65	114	167	276	553

Options

- Available 12 - 90 Volt
- Double Output Shaft
- Replaceable Brushes
- Electro-Magnetic Brake
- Internal Brushes
- Integral Speed Control

VW62S

Overhung load 300 lbs., .87" from output boss



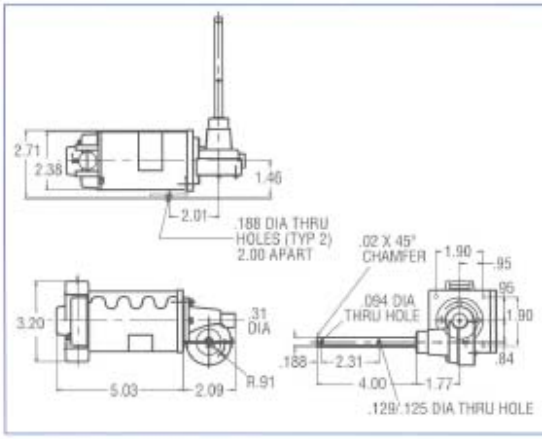
Input Motor	Gearmotor Characteristics	Standard Gear Ratios		
		1458	2261	4539
3000 RPM	F.L. Speed (RPM)	2	1.2	0.6
	F.L. Torque (in-lbs.)	600	600	600

Options

- Available 12 - 180 Volt
- Replaceable Brushes
- Internal Brushes
- Integral Speed Control

VW06

Overhung load .25 lbs., .75" from output boss

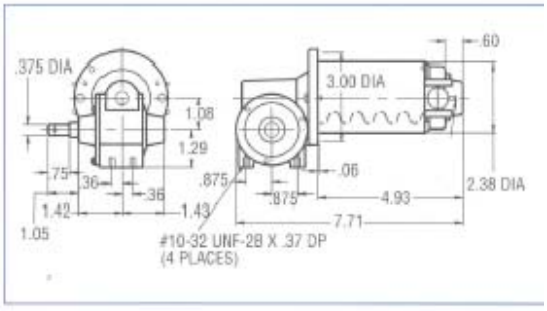


Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		5	10	15	20	25	30	35	40
2050 RPM	F.L. Speed (RPM)	410	205	137	103	82	68	59	51
	F.L. Torque (in-lbs.)	4	7	9	11	12	12	15	17

Options • Available 12 - 180 Volt • Replaceable Brushes • Double Output Shaft

VW26

Overhung load 50 lbs., .75" from output boss

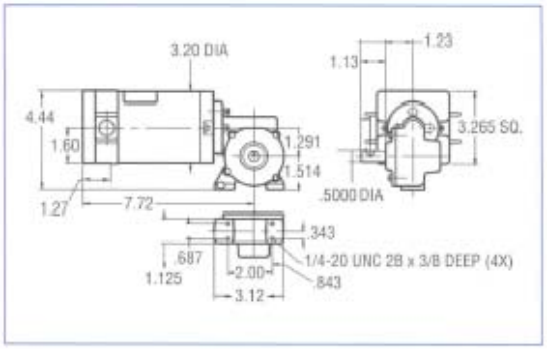


Input Motor	Gearmotor Characteristics	Standard Gear Ratios								
		2	4	10	15	20	30	40	50	60
1750 RPM	F.L. Speed (RPM)	875	437	175	117	88	58	44	35	29
	F.L. Torque (in-lbs.)	2	4	13	17	23	26	28	30	38

Options • Available 12 - 180 Volt • Replaceable Brushes • Double Output Shaft

VW185

Overhung load 100 lbs., .75" from output boss

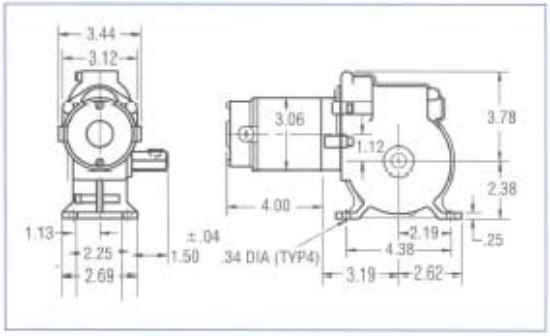


Input Motor	Gearmotor Characteristics	Standard Gear Ratios							
		5	10	15	20	30	40	50	60
1725 RPM	F.L. Speed (RPM)	345	175	115	86	58	43	35	29
	F.L. Torque (in-lbs.)	26	35	50	65	80	100	120	135

Options • Available 12 - 180 Volt • Replaceable Brushes • Double Output Shaft • Electro-Magnetic Brake

VW07

Overhung load 250 lbs., 1" from output boss

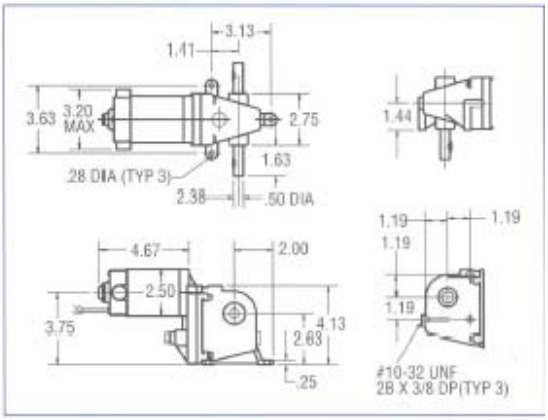


Input Motor	Gearmotor Characteristics	Standard Gear Ratios	
		148	295
3300 RPM	F.L. Speed (RPM)	22	11
	F.L. Torque (in-lbs.)	120	155
1650 RPM	F.L. Speed (RPM)	11	6
	F.L. Torque (in-lbs.)	200	260

Options • Available 12 - 90 Volt • Replaceable Brushes • Internal Brushes • Double Output Shaft • Electro-Magnetic Brake • Integral Speed Control

VW23

Overhung load 200 lbs.,
1" from output boss

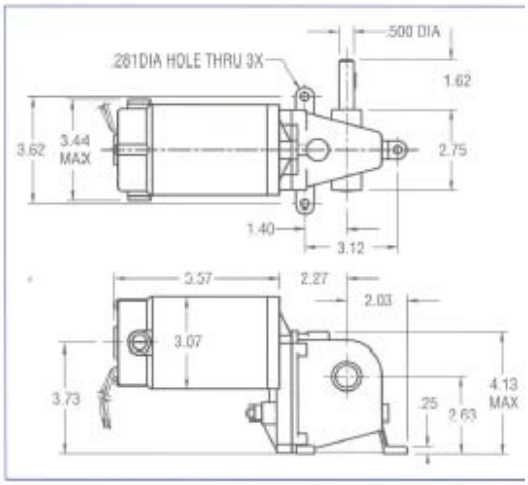


Input Motor	Gearmotor Characteristics	Standard Gear Ratios			
		105	210	450	900
3000 RPM	F.L. Speed (RPM)	30	15	7	3.5
	F.L. Torque (in-lbs.)	23	37	100	155

Options
- Available 12 - 180 Volt
- Replaceable Brushes
- Internal Brushes
- Integral Speed Control

VW33

Overhung load 200 lbs.,
1" from output boss



Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		37	70	167	275	525	1255
3300 RPM.	F.L. Speed (RPM)	89	47	20	12	6.6	3
	F.L. Torque (in-lbs.)	38	72	172	129	250	250
1650 RPM	F.L. Speed (RPM)	45	24	10	6	3.4	1.5
	F.L. Torque (in-lbs.)	64	122	250	219	250	250

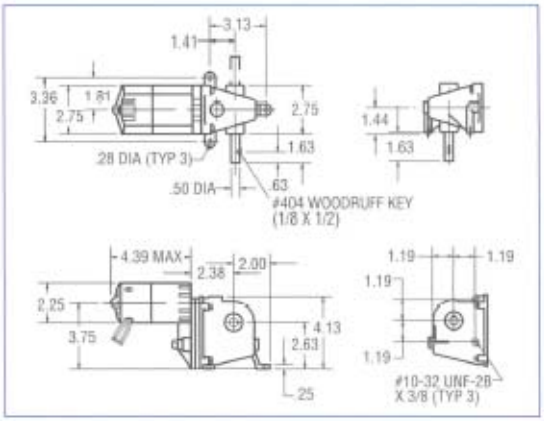
Options
- Available 12 - 90 Volt
- Double Output Shaft
- Replaceable Brushes
- Electro-Magnetic Brake
- Internal Brushes
- Integral Speed Control

DC GEARMOTORS

Right Angle

VW03 AC/DC

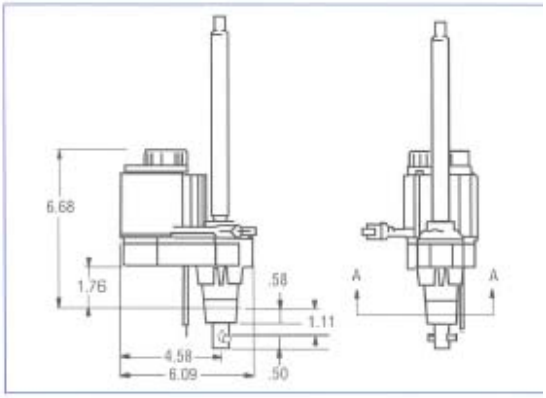
Overhung load 200 lbs., 1" from output boss



Input Motor	Gearmotor Characteristics	Standard Gear Ratios					
		52	100	238	391	747	1787
5200 RPM	F.L. Speed (RPM)	100	50	21	12.8	6.7	4
	F.L. Torque (in-lbs.)	27	45	100	110	162	250

Options • Overload Protection • Double Output Shaft • Replaceable Brushes

VW76H

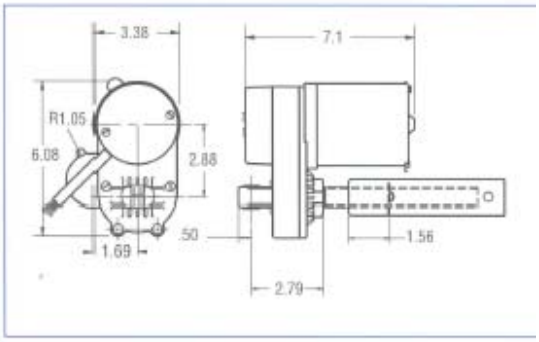


Input Motor	Gearmotor Characteristic	Total Ratio (Gear Ratio/Screw Lead) Reference													
		42	56	61	70	83	102	111	122	147	163	196	240	295	393
2 Pole 60 Hz.	F.L. Speed (in-min.)	59	44	40	35	29	24	22	20	17	15	12	10	8	6
	F.L. Thrust (lbs.)	81	110	118	110	165	160	187	242	285	273	390	476	585	660
	Starting Thrust (lbs.)	93	127	136	126	190	184	215	278	328	314	448	547	673	759

Options

- PSC Motor
- Extension Tube
- Overload Protection
- Acme Nut Mount
- Limit Switches
- Dust Cover
- Reed Switch
- Boot
- Opto Switch
- Rear Shaft Extension
- Potentiometer

VW76AC



Input Motor	Gearmotor Characteristic	Total Ratio (Gear Ratio/Screw Lead) Reference																						
		12	16	20	24	30	32	37	44	49	57	65	76	81	84	98	115	130	140	153	168	224	249	330	439
4 Pole 60 Hz.	F.L. Speed (in-min.)	130	98	78	65	53	49	42	35	32	27	24	20	19	18	16	14	12	11	10	9	7	6	5	4
	F.L. Thrust (lbs.)	120	178	138	208	256	235	222	325	413	485	566	600	490	600	600	600	600	600	600	600	600	600	600	600
	Starting Thrust (lbs.)	120	178	138	208	256	235	222	325	413	485	566	664	490	714	718	842	754	845	885	850	893	1000	1000	1000

backdrive alert

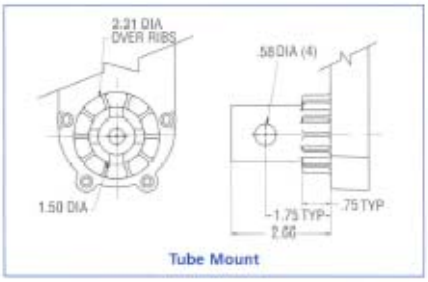
Options

- PSC Motor
- Opto Switch
- Overload Protection
- Potentiometer
- Solenoid Brake
- Extension Tube
- Electro-Magnetic Brake
- Acme Nut Mount
- Limit Switches
- Dust Cover
- Reed Switch
- Rear Shaft Extension

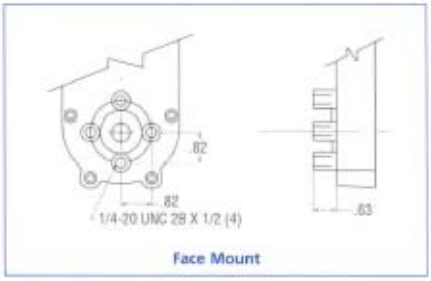
VW76 Mounting

Mounting Options for Linear Actuators

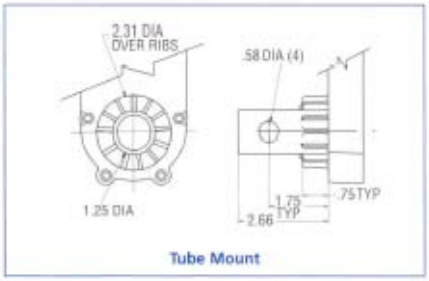
- Optional mounting available for AC or DC model VW76
- Optional rear shaft extension available with tube, face, or square mount
- Plastic dust cover available to shield acme screw
- Direct mounting to Delrin acme nut available



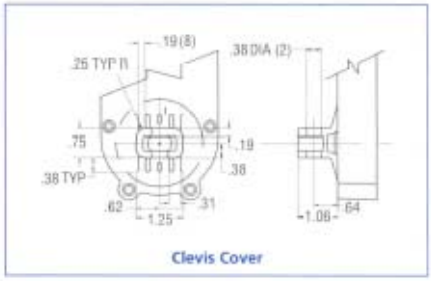
Tube Mount



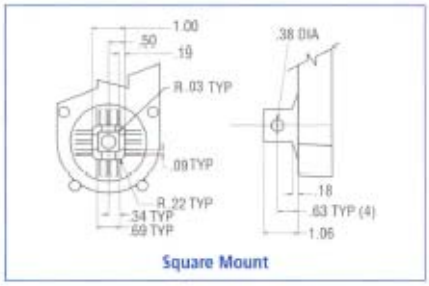
Face Mount



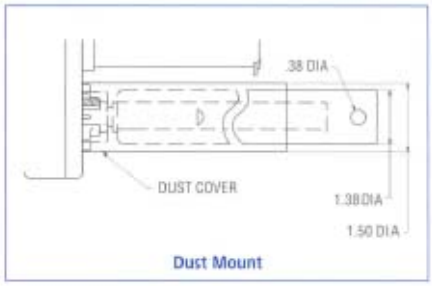
Tube Mount



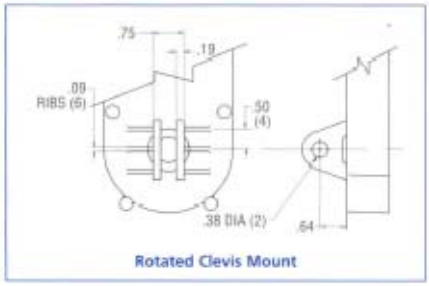
Clevis Cover



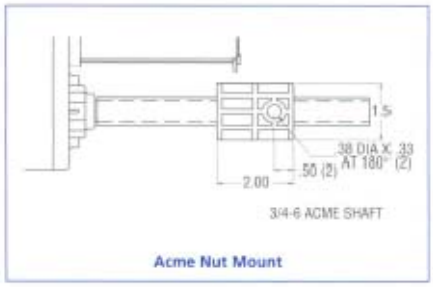
Square Mount



Dust Mount

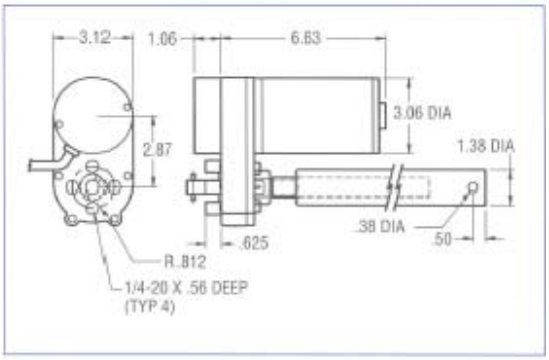


Rotated Clevis Mount



Acme Nut Mount

VW76DC

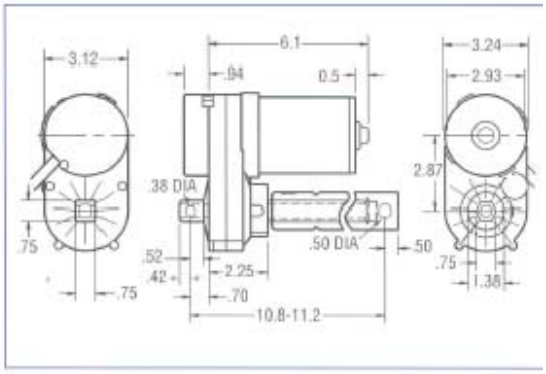


Input Motor	Gearmotor Characteristics	Total Ratio (Gear Ratio/Screw Lead) Reference																								
		12	16	20	24	30	32	37	44	49	57	65	76	81	84	98	115	130	140	153	168	224	249	330	439
1600 RPM	F.L. Speed (in-min.)	130	98	78	65	53	49	42	35	32	27	24	20	19	18	16	14	12	11	10	9	7	6	5	4
	F.L. Thrust (lbs.)	120	178	138	208	256	235	222	325	413	485	566	600	490	600	600	600	600	600	600	600	600	600	600	600
	Starting Thrust (lbs.)	120	178	138	208	256	235	222	325	413	485	566	664	490	714	718	842	754	845	885	850	893	1000	1000	1000

backdrive alert

Options
- Available 12 - 90 Volt
- Electro-Magnetic Brake
- Limit Switches
- Reed Switch
- Opto Switch
- Potentiometer
- Extension Tube
- Acme Nut Mount
- Dust Cover
- Boot
- Rear Shaft Extension

US76DC



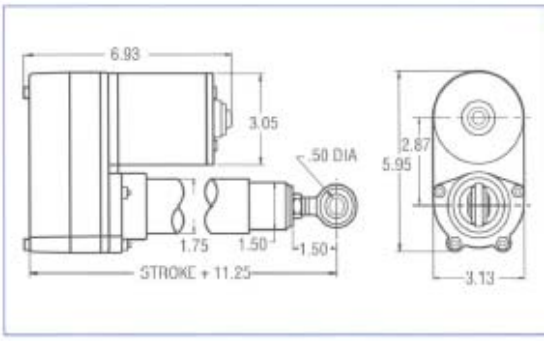
Input Motor	Gearmotor Characteristic	Total Ratio (Gear Ratio/Screw Lead) Reference																							
		12	16	20	24	30	34	37	44	46	49	57	65	69	76	81	84	91	98	115	130	141	153	169	225
1600 RPM	F.L. Speed (in-min.)	130	98	78	65	53	46	42	35	34	32	27	24	23	20	19	18	17	16	14	12	11	10	9	7
	F.L. Thrust (lbs.)	120	178	138	208	256	290	222	325	397	413	485	566	503	600	490	600	529	600	600	600	600	600	600	600
	Starting Thrust (lbs.)	120	178	138	208	256	290	222	325	397	413	485	566	503	664	490	714	529	718	842	754	845	885	850	893

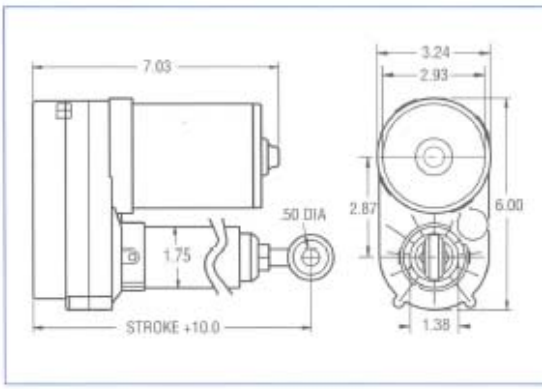
backdrive alert

Options
- Available 12 - 90 Volt
- Limit Switches
- Reed Switch
- Potentiometer
- Extension Tube
- Acme Nut Mount
- Dust Cover
- Body Shroud
- Rear Shaft Extension

ACTUATORS

C-Band Satellite Actuators



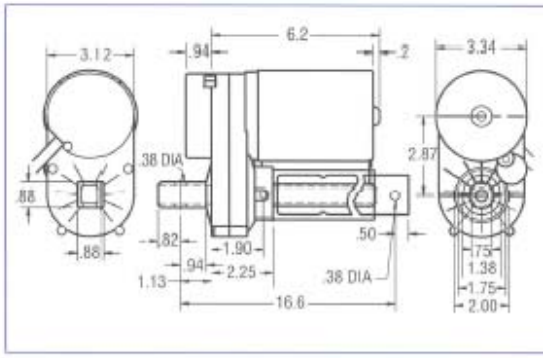


Performance at 36 VDC	Model Number						
	V76-3	V76-5	V76-10	VW-18	VW-18LC	VW-24	VW-24LC
Full Load Speed (in-min.)	11	11	11	11	11	11	11
Full Load Amps	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Full Load Thrust (lbs.)	600	600	600	600	600	600	600
Starting Thrust (lbs.)	800	800	800	800	800	800	800
Stroke Length (in)	24	24	18	18	18	24	24
Feedback Device	Pot	Reed	Reed	Reed	Reed	Reed	Reed
Resolution (counts/in)	400	48	48	48	24	48	24

Options

- 36 volt
- Opto Switch
- 18" or 24" travel
- Tube Mount
- Limit Switches
- Boot
- Reed Switch
- Clamp Kit
- Potentiometer

US76AC



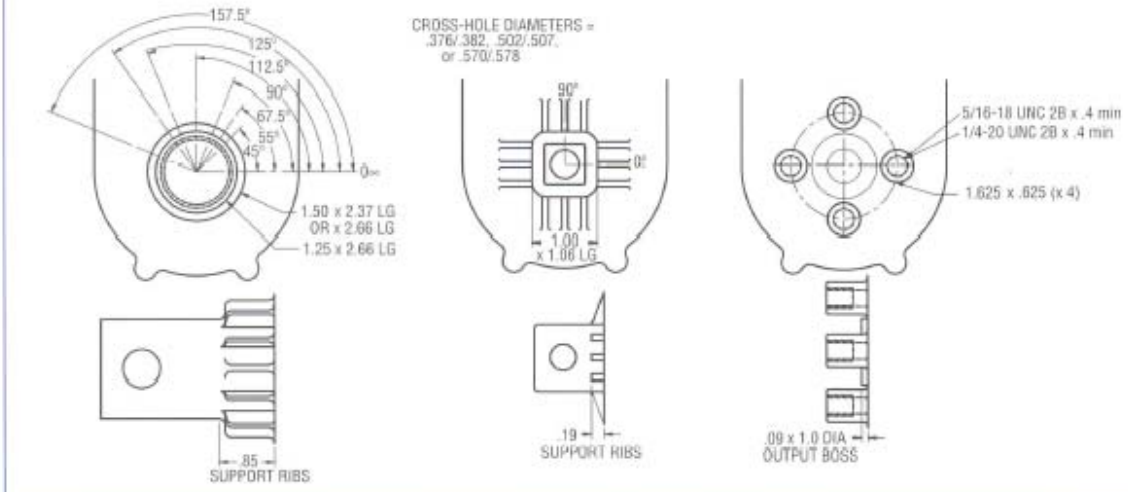
Input Motor	Gearmotor Characteristic	Total Ratio (Gear Ratio/Screw Lead) Reference																						
		12	16	20	24	30	34	37	44	46	49	57	65	69	76	81	84	91	98	115	130	141	153	169	225
4 Pole 60 Hz.	F.L. Speed (in-min.)	130	98	78	65	53	46	42	35	34	32	27	24	23	20	19	18	17	16	14	12	11	10	9	7
	F.L. Thrust (lbs.)	120	178	138	208	256	290	222	325	397	413	485	566	503	600	490	600	529	600	600	600	600	600	600	600
	Starting Thrust (lbs.)	120	178	138	208	256	290	222	325	397	413	485	566	503	664	490	714	529	718	842	754	845	885	850	893

backdrive alert

Options

- PSC Motor
- Extension Tube
- Overload Protection
- Acme Nut Mount
- Limit Switches
- Dust Cover
- Reed Switch
- Body Shroud
- Potentiometer
- Rear Shaft Extension

US76 Mounting



Feedback Options

Limit Switches

Linear actuators are equipped with switches to shut off power to the electric motor at each end of travel. By removing the switch box cover, the top switch can be rotated to adjust travel in either the extended or retracted direction. The general policy is that the top switch limits travel at the extent where the actuator is shut off for shipping, however, that can be changed by specific request.

Sensing Switch

A third switch can be added along with the limit switches to sense a position in mid travel. This can allow auxiliary functions to be turned on or off. The additional height to house the switch is shown below. Tooling may be required for some actuating position requirements.

Reed Switch

A Reed switch can be added for positional feedback on some models. It is available with or without limit switches and brings about no exterior dimensional changes. The resolution on this digital signal varies with total ratio and can be equal to or exactly half the value shown on the accompanying chart.

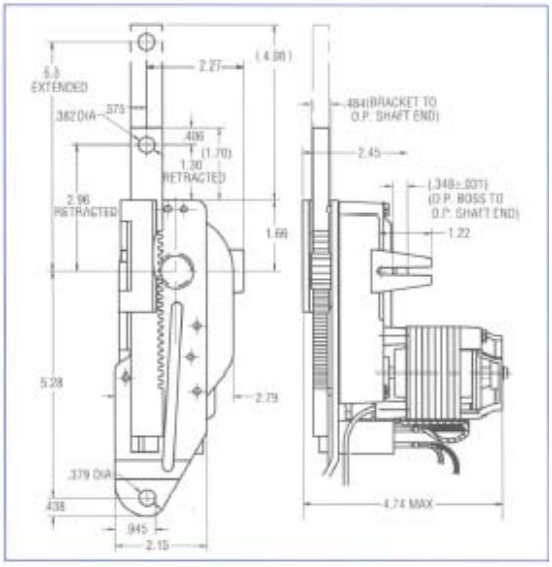
Potentiometer

A potentiometer can be added for continuous analog feedback. If used without limit switches, the actuator will come in the standard dimensional package. Both 1K Ohm and 10K Ohm potentiometers are available, with 10K standard for optimal life and resolution. The combination of total ratio and timing gear ratio determines what percentage of full potentiometer resolution will be used. The accompanying chart shows optimum settings available.

Feedback Options	Timing Gear Ratio	Total Ratio (Gear Ratio/Screw Lead) Reference																							
		12	16	20	24	30	32	37	44	49	57	65	76	81	84	98	115	130	140	153	168	224	249	330	439
		3.25	4.34	5.42	n/a	n/a	n/a	n/a	n/a	13.25	15.55	17.67	20.73	22.09	n/a	26.51	31.11	35.34	n/a	41.46	n/a	n/a	n/a	n/a	n/a
Travel (inches) for Optimum Potentiometer Resolution	654:1	25.0	22.7	18.2	17.9	14.6	13.4	11.7	9.7	8.8	7.5	6.6	5.6	5.3		4.4	3.8	3.3		2.8					
	1415:1		25.0	25.0	24.3	19.8	18.2	15.8	13.2	11.9	10.2	9.0	7.6	7.2		6.0	5.1	4.5		3.8					
	2301:1				32.5	26.4	24.4	21.1	17.6	15.9	13.6	12.0	10.2	9.6		8.0	6.8	6.0		5.1					
	2880:1				44.1	35.8	33.1	28.7	23.9	21.6	18.5	16.2	13.8	13.0		10.8	9.2	8.1		6.9					
	5970:1				48.0	48.0	44.9	38.9	32.4	29.4	25.0	22.0	18.8	17.6	15.0	14.7	12.5	11.0	9.0	9.4	7.5	5.6	7.5	7.5	5.6

RACK & PINION

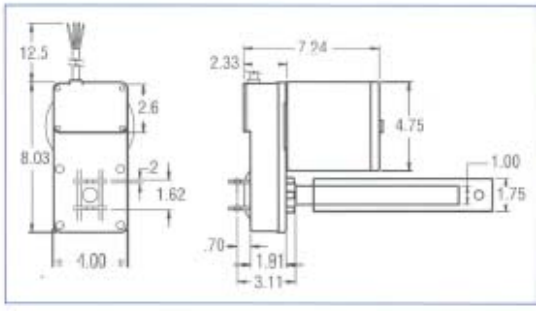
Rack & Pinion



Input Motor	Gearmotor Characteristic	Total Ratio (Gear Ratio/Rack Ratio)		
		108	215	323
2 Pole 60 Hz.	F.L. Speed (in-min.)	19	9	6
	F.L. Thrust (lbs.)	250	500	750

Options • P.S.C. Motor • Brake

VW02



Input Motor 4 Pole, 60 Hz.	Standard Gear Ratios					
	70	84	112	127	153	204
Full Load Speed (in-min.)	23	19	15	13	11	8
Full Compression Thrust (lbs.)	1068	1175	1282	1800	1800	1800
Full Tension Thrust (lbs.)	1000	1000	1000	1000	1000	1000
Starting Thrust (lbs.)	1068	1175	1282	1942	2137	2331

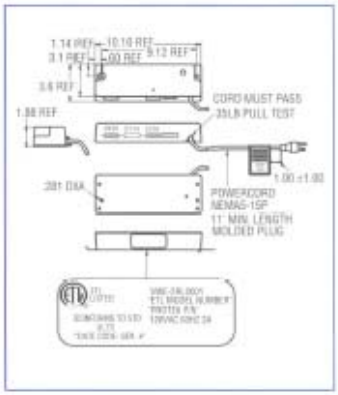
Options • P.S.C. Motor • Overload Protection • Limit Switches • Potentiometer
• Extension Tube • Acme Nut Mount • Rear Shaft Extension

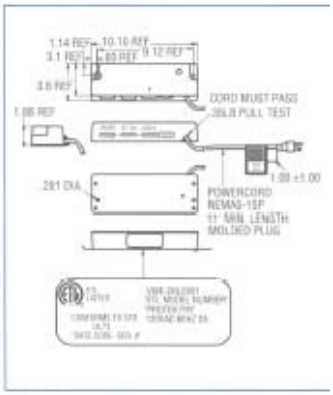
ACCESSORIES

Junction Box

VWE-2RL0001 -
2 motor junction box

VWE-3RL0001 -
3 motor junction box



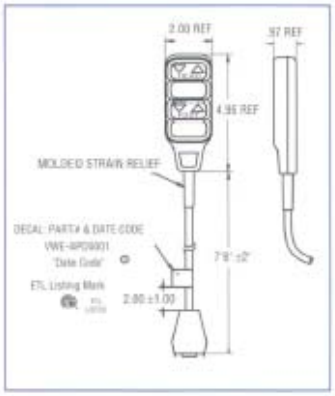


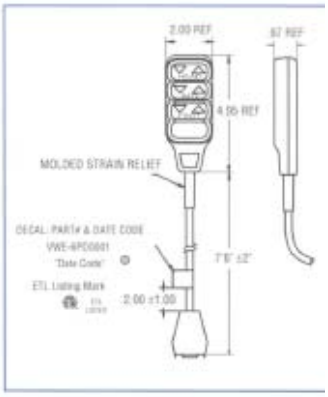
- ETL listed per UL73 standard
- 120/60 vac input
- Max. motor rating - 1200/2.0 amps/1/8 hp
- Motor connector - Burndy SMS6PH-3TK
- Pendant rating - 12 vds, 50 mA
- Pendant connector - 9 position male D-sub

Pendant

VWE-4PD0001 -
4 function/2 motor pendant

VWE-4PD0001 -
6 function/3 motor pendant

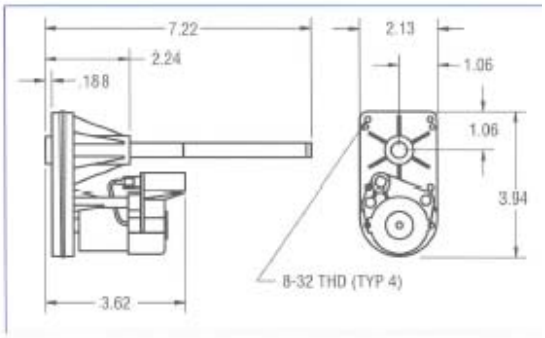




- Power Input - 12 vdc, 50 mA
- Connector - 9 position female D-sub
- ETL listed per UL73 standard
- Color - beige

VW96

Overhung load 10 lbs., .75" from output boss

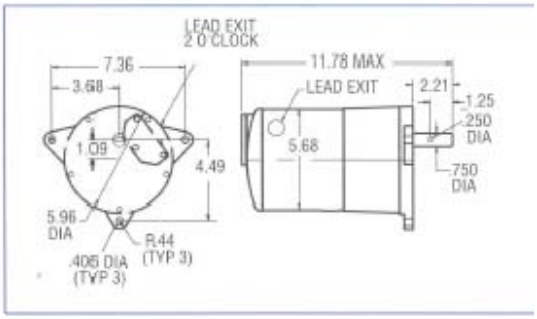


Input Motor	Gearmotor Characteristic	Standard Gear Ratios	
		51	102
2550 RPM	F.L. Speed (RPM)	50	25
	F.L. Torque (in-lbs.)	2	4

Options • Double Output Shaft

VW44

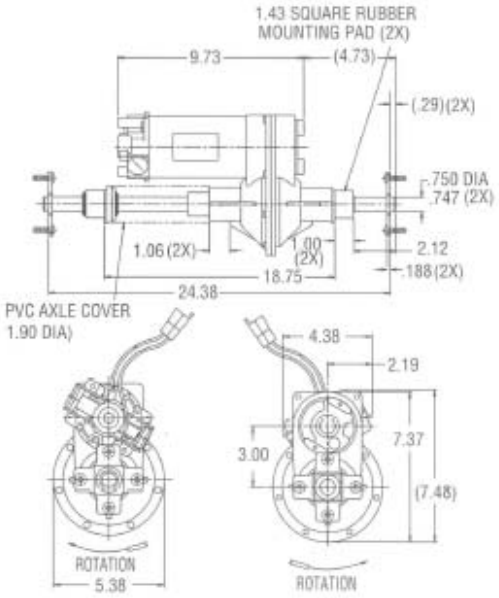
Overhung load 400 lbs., .75" from output boss



Input Motor	Gearmotor Characteristic	Standard Gear Ratios	
		31	49
4 Pole 60 Hz.	F.L. Speed (RPM)	56	36
	F.L. Torque (in-lbs.)	65	100

Options • Shaded Pole • P.S.C. Motor • Split Phase • Capacitor Start • Brake • Double Output Shaft • Conduit Box • 3-Phase • Overload Protection

Transaxle



Options • Available 12 - 90 Volt • Replaceable Brushes • Hall Effect Encodes

Brakes

- Disc brake
- Cone brake
- Armature brake
- Solenoid brake
- Electro-Magnetic brake
- Clutch

Brakes are available for most items in the catalog.

APPLICATION MATRIX

APPLICATION	AC		DC		Linear Actuators		Specials	
Medical	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Hospital Beds	US76AC Gear Motor VW76AC Gear Motor	10 10	VW76DC Gear Motor	31	US76AC VW76AC US76DC VW76DC	46 42 44 44		
Home Healthcare Beds	US76AC - Gear Motor VW76AC - Gear Motor	10 10	VW76DC - Gear Motor	31	US76AC VW76AC US76DC	42 44 44		
Nursing Beds	US76AC - Gear Motor VW76AC - Gear Motor	10 10	US76DC - Gear Motor VW76DC - Gear Motor	31 31	VW76DC US76DC VW02AC VW76AC US76AC	44 44 48 42 46		
Birthing Beds	US76AC - Gear Motor VW76AC - Gear Motor	10 10	VW76DC - Gear Motor	3	US76AC VW76AC VW02AC US76DC VW76DC	46 42 48 44 44		
Examination Tables					VW02AC	48		
Dental Chairs			US76DC - Gear Motor VW76DC - Gear Motor	31 31	US76AC VW76AC VW02AC US76DC VW76DC	46 42 48 44 44		
Medical Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW100AC VW110AC VW400AC	4 4 5 5 2 2 3 3 14 14 15	D1H/L D1P D3P/L D3H D10P/L D10H D10PA D10HA US76DC - Gear Motor VW130DC VW375DC VW400DC	24 24 25 25 22 22 23 23 31 34 36 36	VW02AC	48		
Peristaltic Pumps	D1H/L D1P/L D3PL D3H D10P/L D10H D10PA D10HA VW11AC VW14AC VW80AC	4 ?? 5 5 2 2 3 3 8 8 9	D1H/L D1P/L D3P/L D3H D10P/L D10H D10PA D10HA US76DC - Gear Motor VW70DC VW83D	24 24 25 25 22 22 23 23 31 29 28				
Medical Instrumentation	D9 D14 VW26AC	6 6 20	D9 D25 D100 VW06DC VW26DC	28 27 28 38 38				
X-Ray Development	D1H/L D1P D3PL D3H D10 VW53AC	4 4 5 5 ?? 11	D1H/L D1P D3PL D3H D10 VW53DC VW80DC	24 24 25 25 ?? 32 30				
Handicap Vehicles			VW62DC	37			Transaxles	51
Lift-Out Chairs					US76AC VW76AC US76DC VW76DC Rack & Pinion	46 42 44 44 48		

APPLICATION MATRIX

APPLICATION	AC		DC		Linear Actuators		Specials	
Food Service	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Icemakers	VW11AC VW14AC VW34AC VW53AC VW58AC VW62AC VW80AC VW84AC VW100AC VW110AC VW400AC	8 8 19 11 18 18 9 16 14 14 15	VW53DC VW70DC US76DC - Gear Motor VW130DC VW400DC VW62DC	32 29 31 34 36 37				
Commercial Dishwashers	VW100AC VW110AC VW400AC	14 14 15	VW130DC VW400DC	34 36				
Food Service Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW33AC VW62AC VW84AC	4 4 5 5 2 2 3 3 19 18 16	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW62DC VW185DC VW375DC	24 24 25 25 22 22 23 23 37 39 36				
Restaurant Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW08AC VW31AC VW51AC VW62AC VW84AC	4 4 5 5 2 2 3 3 12 11 13 18 16	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW62DC VW185DC VW375DC	24 24 25 25 22 22 23 23 37 39 36				
Milk Stirring							VW44AC	50
Vending Machines	W1 D1HL D1P	7 4 4						
Popcorn Poppers	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW08AC	4 4 5 5 2 2 3 3 12	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	24 24 25 25 22 22 23 23				
Rotisseries	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW08AC VW62AC VW88AC	4 4 5 5 2 2 3 3 12 18 12	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	24 24 25 25 22 22 23 23				
Poultry Equipment	VW20AC VW40AC VW47AC	17 17 15						
Office Equipment								
Automated File Systems			VW62DC VW84DC	37 35				
Conference Room Equipment	VW100AC VW110AC VW400AC	14 14 15	US76DC - Gear Motor VW130DC VW130DC	31 34				

APPLICATION MATRIX

APPLICATION	AC		DC		Linear Actuators		Specials	
	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Business Machines	D9 D14 VW11AC VW14AC VW26AC VW53AC VW80AC	6 6 8 8 20 11 8	D9 D25 VW06DC VW15DC VW16DC VW26DC VW53DC VW70DC VW80DC VW83DC VW185DC VW375DC	28 27 38 26 27 38 32 29 30 28 39 36				
Postal Machines	D11H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	4 4 5 5 2 2 3 3	D11H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW83DC	24 24 25 25 22 22 23 23 28				
Laminating Machines	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW11AC VW14AC VW80AC	4 4 5 5 2 2 3 3 8 8 9	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW70DC VW80D VW83DC	24 24 25 25 22 22 23 23 29 30 28				
Computer Periferels	D9 D14	6 6	D9 VW06DC	28 38				
Fax Machine			VW06DC	38				
Copy Machine	D9 D14	6 6	D9 VW06DC	28 38				
Paper Shredders	VW34AC	19	US76DC - Gear Motor	31				
Ribbon Drives	D9 D14	6 6	D9 VW06DC	28 38				
Floor Sweepers			US76DC - Gear Motor VW83DC VW88DC	31 28 33	US76DC	44		
Automated Displays	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW11AC VW14AC VW62AC VW80AC VW88AC	4 4 5 5 2 2 3 3 8 8 18 9 12	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW15DC VW16DC VW63DC VW70DC	24 24 25 25 22 22 23 23 26 27 26 29				
Recreational Equipment								
Exercise Equipment	VW03AC/DC VW33AC VW80AC	41 20 9	VW03AC/DC VW15DC VW16DC VW70DC VW80DC	41 26 27 29 30				
Tread Mills	VW33AC VW88AC	20 12			U576AC VW76AC VW02AC VW87AC U576DC VW76DC Rack & Pinion	46 42 48 42 44 44 48		

APPLICATION MATRIX

APPLICATION	AC		DC		Linear Actuators		Specials	
	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Recreational Equipment	US76AC - Gear Motor VW76AC - Gear Motor	16 10	VW07DC VW23DC VW31DC VW33DC VW76DC - Gear Motor	39 40 32 40 31				
Gaming	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	4 4 5 5 2 2 3 3	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA D9	24 24 25 25 22 22 23 23 28				
Financial Equipment								
Security Cameras			VW06DC	38				
Banking Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW89AC	4 4 5 5 2 2 3 3 13	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW06DC	24 24 25 25 22 22 23 23 38				
Banking Machines	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	4 4 5 5 2 2 3 3	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	24 24 25 25 22 22 23 23				
Industrial Equipment								
Switch Gear	VW58AC VW77AC VW84AC	18 21 16	VW07DC	39				
Storage Retrieval Equipment	VW77AC	21						
Robotics	VW26AC VW51AC	20 13	D25 VW26DC VW51DC VW375DC	27 38 34 36				
Conveyers	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW03AC/DC VW08AC VW34AC VW47AC VW51AC VW53AC VW58AC VW62AC US76AC - Gear Motor VW76AC - Gear Motor VW80AC VW84AC VW88AC VW89AC VW100AC VW110AC VW400AC	4 4 5 5 2 2 3 3 41 12 19 16 13 11 18 18 10 10 9 16 12 13 14 14 15	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW03AC/DC VW31DC VW51DC VW53DC VW70DC VW76DC - Gear Motor VW88DC VW89DC VW130DC VW185DC VW400DC	24 24 25 25 22 22 23 23 41 32 34 32 29 31 33 33 34 39 36				

APPLICATION MATRIX

APPLICATION	AC		DC		Linear Actuators		Specials	
	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Machine Tools	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	4 4 5 5 2 2 3 3	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW07DC VW23DC VW33DC VW88DC VW89DC	24 24 25 25 22 22 23 23 39 40 40 33 33				
Woodworking Equipment	VW58AC	18	VW84DC VW88DC VW89DC	35 33 33				
Pump Drive Lubricator	VW53AC	11	VW53DC	32				
Valve Actuators	D1H/L D1P D3PL D3H D9 D10P/L D10H D10PA D10HA D14	4 4 5 5 6 2 2 3 3 6	D1H/L D1P D3PL D3H D9 D10P/L D10H D10PA D10HA D100 VW53DC VW16DC VW63DC US76DC - Gear Motor VW83DC	24 24 25 25 28 22 22 23 23 28 32 27 26 31 28				
Welding Equipment	US76AC - Gear Motor VW76AC - Gear Motor	10 10	VW07DC VW15DC VW16DC VW23DC VW31DC VW33DC VW76DC - Gear Motor VW80DC VW88DC VW89DC VW185DC	39 26 27 40 32 40 31 30 33 33 39			Transaxles	51
Packaging Equipment	VW51AC VW53AC	13 11	VW51DC VW53DC	34 32				
Chemical Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA US76AC - Gear Motor VW76AC - Gear Motor	4 4 5 5 2 2 3 3 10 10	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW31DC VW76DC - Gear Motor	24 24 25 25 22 22 23 23 32 31				
Compactors	VW20AC VW40AC	17 17						
Can Crushers	VW20AC VW40AC	17 17						
Laboratory Mixers/Grinders	VW53AC	11	VW53DC	32				
Firefighting Equipment	VW47DC	16						
Pellet Stove	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW11AC VW14AC	4 4 5 5 2 2 3 3 8 8	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW70DC VW76DC - Gear Motor	24 24 25 25 22 22 23 23 29 31				

APPLICATION MATRIX

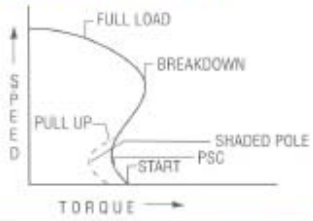
APPLICATION	AC		DC		Linear Actuators		Specials	
	Part #	Page#	Part #	Page#	Part #	Page#	Part #	Page#
Pellet Stove (con't)	VW31AC US76AC - Gear Motor VW76AC - Gear Motor VW80AC	11 10 10 9						
Mechanical Pool Covers	VW20AC	17						
Gate Openers	VW53AC	11	VW53DC	32	US76DC - SATELLITE VW76DC - SATELLITE	45 45		
Binding Equipment	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA	4 4 5 5 2 2 3 3	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW83DC	24 24 25 25 22 22 23 23 28				
Printing Equipment			VW06DC VW63DC	38 26				
Agricultural Equipment								
Agricultural Equipment			VW23DC VW33DC VW62DC VW84DC VW375DC	40 40 37 35 36				
Agricultural Ventilation	VW47AC	16	VW80DC US76AC US76DC VW76AC VW76DC	30 46 44 42 44	US76DC - SATELLITE VW76DC - SATELLITE VW76AC VW76DC US76AC US76DC	45 45 42 44 46 44		
Wire Feeds	VW51AC	13	VW51DC	34				
Electronic Equipment								
Ticket Dispensers	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW11AC VW14AC VW80AC	4 4 5 5 2 2 3 3 8 8 9	D1H/L D1P D3PL D3H D10P/L D10H D10PA D10HA VW63DC VW70DC VW83DC	24 24 25 25 22 22 23 23 26 29 28				
Positioning Devices	VW26AC	20	D25 VW26DC	27 38				
Satellite Dish Positioning			VW23DC VW33DC VW47DC	40 40 35	US76DC - SATELLITE VW76DC - SATELLITE	45 45		
Solar Panels					US76DC - SATELLITE	45		
Signal Flashers					VW76DC - SATELLITE	45	VW96DC	50
Louver Control	VW100AC VW110AC VW400AC	14 14 14	VW130DC VW400DC	34 36	US76DC - SATELLITE VW76DC - SATELLITE	45 45		
Ribbon Drives	D9 D14	6 6	D9 VW06DC	28 38				

Motor Wiring and Performance

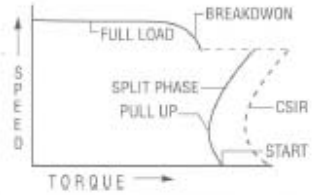
(see following page for wiring diagrams)

- Geartrains simply take input speed and torque and multiply or divide them depending on ratio. Some torque is lost due to friction, but the basic output performance mimics the input performance, just scaled up or down for ratio. Therefore, the motor performance characteristics you see on this page will be the same characteristics that you would see from a gearmotor.
- Shaded pole motors run on AC voltage and only rotate in one direction. Standard models have only two lead wires and can be turned on and off by putting voltage across the two wires. Performance characteristics are similar to PSC. Wiring (1). Performance (1).
- PSC (permanent split capacitor motors) run on AC voltage and are reversible. The capacitor must be in the circuit at all times for the unit to run properly. Standard models have three or five lead wires and should be hooked up as shown in Wiring (2a) or (2b) Performance (1).
- Split phase motors run on AC voltage and are reversible. Split phase motors have one winding that is always on line and one that is only used for starting. A centrifugal switch releases when the motor comes up to speed, or a relay releases when the motor's inrush current subsides and removes the start winding from the circuit. If the start winding remains on line for an extended period, the motor will overheat. Wiring (3a) and (3b). Performance (2).
- CSIR (capacitor start-induction run) motors run on AC voltage and are reversible. They are constructed like split phase motors, but they have a capacitor connected between the run winding and the start winding for additional starting and pull-up torque. Wiring (4). Performance (2).
- Series wound motors run on either AC or DC voltage and are reversible. They are brush commutated and have fairly short brush life (less than 500 hours in some cases). Standard models have four wires lead and are wired as shown in Wiring (5). Performance (3).
- PMDC (permanent magnet DC) motors run on DC or rectified AC voltage and are reversible. The more closely the input voltage resembles pure DC, the more efficiently the motor runs (less heat rise, longer brush life). These motors have two lead wires and the direction of rotation is determined by the polarity of the input voltage. Wiring (6). Performance (4).

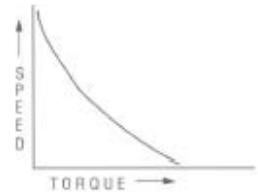
Shaded Pole & PSC Performance 1



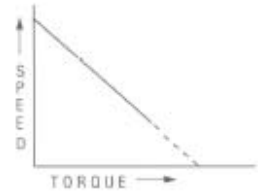
Split Phase & CSIR Performance 2



Series Performance 3

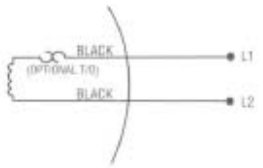


PMDC Performance 4

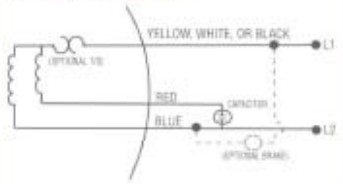


Motor Wiring and Performance (cont.)

Shaded Pole Wiring 1

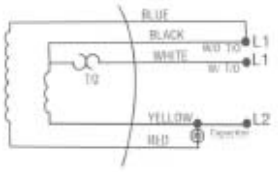


PSC (3 wire) Wiring 2a



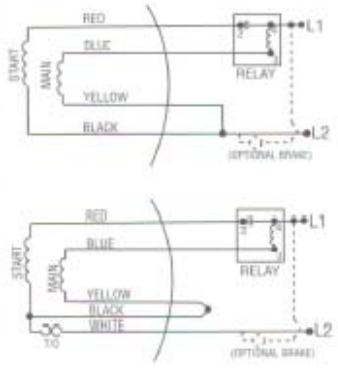
TO REVERSE INTERCHANGE RED & BLUE

PSC (5 wire) Wiring 2b



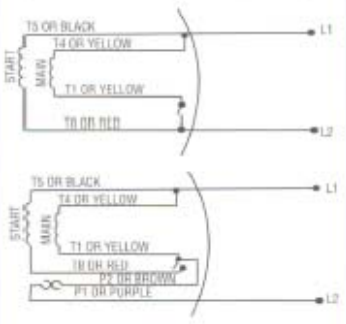
TO REVERSE INTERCHANGE RED & BLUE

Split Phase (relay) Wiring 3a



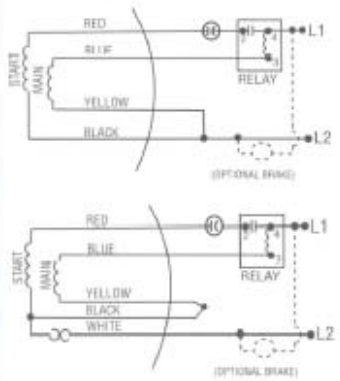
TO REVERSE INTERCHANGE BLUE & YELLOW

Split Phase (centrifugal switch) Wiring 3b



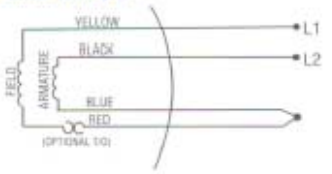
TO REVERSE INTERCHANGE BLUE & YELLOW

CSIR Wiring 4



TO REVERSE INTERCHANGE BLUE & YELLOW

Series Wiring 5



TO REVERSE INTERCHANGE BLUE & BLACK

PMDC Wiring 6

TO REVERSE INTERCHANGE BLUE & BLACK

Torque Ratings vs. Duty Cycle

All gearmotors have duty cycle specified on individual pages.

For those that are rated continuous, the motor, bearings, gears and shafts are designed to run continuously at the listed torque value without overheating. Lower torque amounts can extend life or specifying a particular life can help you. Torque levels higher than specified are sometimes possible on an intermittent basis, at times up to 1.5 times rated load. If, however, these loads will be frequent, premature failure may occur.

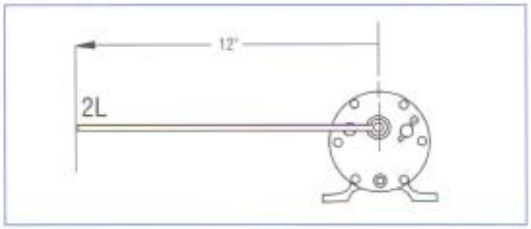
For the right angle models rated as intermittent, the motor and power train can operate for sustained periods (up to several hours) at rated torque values, but when run continuously the motor can deteriorate rapidly. Used typically in cycling operations, where the duty cycle preludes mechanical overheating, these units can provide many years of reliable service.

For intermittent applications, many times a smaller, more cost effective motor or gearbox can be used. Be sure to specify duty cycle completely on application data sheets so that the optimum gearmotor can be selected.

Torque Overhung Load

All gearmotors have torque and overhung load specified on individual pages.

Torque is the tendency of your load to twist the output shaft of a gearmotor. Torque is measured as a force x a distance. For example, a (2) lbs. weight supported (12) inches away from the centerline of the output shaft of a gearmotor would require 2 lbs. X 12 in = 24 lb-ins of torque to move.



Knowing your exact torque requirements helps you optimize your gearmotor selection. You can get just the gearmotor you need, or if you want some safety margin, you'll know how much safety margin you've got. Torque can be measured using a torque wrench or using a wheel of a known diameter and force scale (similar to a postage or fish scale). Torque can also be calculated based on load and its vectoral distance from the gearmotor output shaft.

Your torque load is made up of a force at a distance and that force constitutes an overhung load. If the gearmotor/shaft couples to a shaft that is supported at each end, then you have isolated the overhung load from the gearmotor. In this case, be sure that the coupling arrangement allows for proper alignment between the gearmotor shaft and the supported shaft. If it doesn't, it can preload the bearings in the gearmotor and cause poor performance and premature failure.

If the gearmotor output shaft transmits its torque through a chain, pulley, gear train or rack and pinion, these devices will create an overhung load on the shaft. This load can be figured by the equation below:

$$\text{Overhung Load} = \frac{\text{Torque} \times K}{\text{Radius (of pulley, sprocket or pinion)}}$$

Or

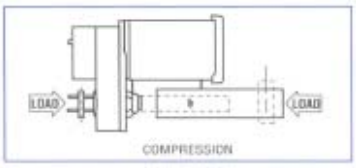
$$\text{Overhung Load} = \frac{\text{Torque} \times 2 \times K}{\text{Diameter (of pulley, sprocket or pinion)}}$$

K is a load factor for the type of transmission you use. For chain and sprocket, K = 1.0; for gear and pinion or rack and pinion, K = 1.25; for belt and pulley, K = 1.5. Be sure that your pulley, sprocket or pinion diameter is large enough to stay within the published overhung load capacities.

Thrust Rating vs. Duty Cycle

All linear actuators in catalog are intermittent duty rated.

The thrust ratings shown in the catalog are set up around 25% on-time per minute of operation. For infrequent bursts of power, most units can handle up to 1.5 times rated load. Consistent heavy cycling of loads in excess of the rating may cause units to fail. When in the design stage, keep in mind that although linear actuators are designed to provide equal thrust in both directions, the load bearing capacity is higher in compression than in tension.

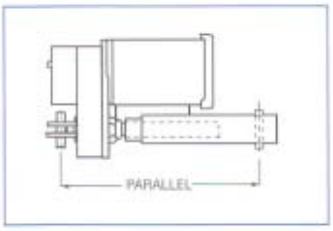


As with the gearmotors before, the performance of the linear actuators mimic the performance of the motors that drive them. The only difference is that rotary speed and torque are replaced by linear speed and thrust. However, start thrust, breakdown thrust and pull-up thrust all exist just as would be expected.

Mounting and Alignment

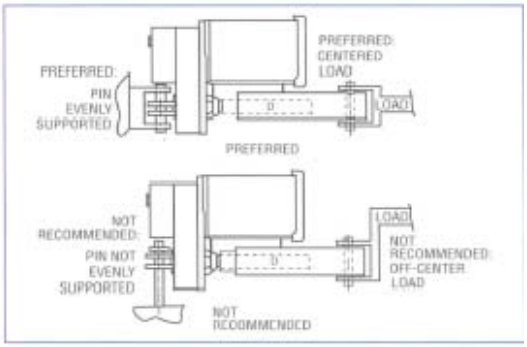
In order to get proper performance and maximum life, linear actuators should be mounted to be free of side loads. The best way to ensure this is to use clevis mounting at each end and to ensure that the clevis mounting pins remain parallel at all times.

Also, be sure that the pins are evenly supported on each side and the load is centered about the actuator.



The last consideration in mounting is restraining torque. All linear actuators have rotating output shafts and the travel tube or acme nut will simply rotate as well unless it is kept from rotating. The restraining torque requirement can be calculated as:

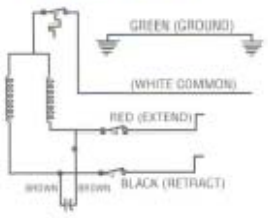
Restraining Torque (lb-inches) = .2 x Axial Load (lbs.)



Wiring

AC linear actuators come standard with PSC motors that have capacitors already mounted and wired in. DC linear actuators have two wiring diagrams depending on the amp draw of the motor. All units are prewired through limit switches that shut the actuator off at either end of travel. (Wiring 7a, 7b, 7c)

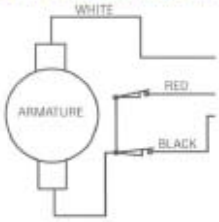
AC Linear Actuator



RED AND WHITE TO EXTEND*
BLACK AND WHITE TO RETRACT**

Wiring 7a

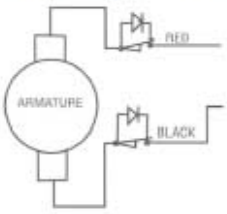
DC Linear Actuator (High Current)



(+) RED, (–) WHITE TO EXTEND*
(–) BLACK AND (+) WHITE TO RETRACT**

Wiring 7b

DC Linear Actuator (Low Current)



(+) RED, (–) BLACK TO EXTEND*
(–) RED, (+) BLACK TO RETRACT**

Wiring 7c

How to use the Selection Guide of Stocked Gearmotors

Two key requirements in selecting a gearmotor are Speed (RPM) and Torque (in.lb.). These two specifications quickly determine the available models to consider. From this group, the best choice can be made by reviewing mounting configurations, shaft dimensions, voltage, etc.

Example:

A gearmotor is required to rotate a large display case at 6 RPM. The amount of torque needed – measured by a torque wrench – is 200 in.lb.

Step 1: Go to the AC section of the Selection Guide, since adjustable speed is not needed.

Step 2: Read down the RPM column to the grouping of 6 RPM models.

Step 3: In the adjacent Torque column find all the 6 RPM models with at least 200 in.lb. torque.

Step 4: With this group of gearmotors, review their voltage, mounting configuration, shaft characteristics, etc. for the gearmotor that best suits the application.

AC Gearmotors

(continued)

F/L RPM	F/L Torque in. Lbs.	Input HP	Volts 60Hz	Volts 50HZ	Motor Type	Grainger SKU	Gearbox Reference and Page
1	50	1/400	115		Shaded Pole	2ZB04	VW11 Pg. 8
1	100	1/100	115	115	Shaded Pole	4LL05	VW11 Pg. 8
1	100	1/100	115		Shaded Pole	2L001	VW707*
1	3000	1/15	115/230	115/230	P.S.C.	1L570	VW47 Pg. 16
1.3	250	1/50	115/230	115/230	P.S.C.	1L554	VW33 Pg. 20
2	25	1/400	115		Shaded Pole	2ZB05	VW11 Pg. 8
2	113	1/10	115		Shaded Pole	1L490*	VW08 Pg. 12
2	113	1/20	115		Shaded Pole	3M125	VW08 Pg. 12
2	1900	1/12	115/230	115/230	P.S.C.	1L571	VW47 Pg. 16
3	200	1/20	115/230	115/230	P.S.C.	1L555	VW33 Pg. 20
3.5	50	1/250	115/230	115/230	P.S.C.	1L548	VW14 Pg. 8
4	130	1/90	115		Shaded Pole	6Z906	VW707*
5.6	200	1/14	115/230	115/230	P.S.C.	1L556	VW33 Pg. 20
6	22.5	1/330	115		Shaded Pole	2ZB06	VW11 Pg. 8
6	40	1/100	115	115	Shaded Pole	4LL06	VW11 Pg. 8
6	113	1/10	115		Shaded Pole	1L489*	VW08 Pg. 12
6	113	1/20	115		Shaded Pole	3M126	VW08 Pg. 12
6	113	1/10	115		Shaded Pole	3M135	VW08 Pg. 12
6	250	2/85	115		Shaded Pole	6Z907	VW707*
6	500	1/15	115/230	115/230	P.S.C.	2H417	VW102 Pg. 14
6	500	1/15	115/230	115/230	P.S.C.	2H431	VW104 Pg. 14
6	600	1/12	115/230	115/230	P.S.C.	1L572	VW84 Pg. 16
6	600	1/4	115		Split Phase	5K933	VW20 Pg. 17
7	50	1/125	115/230	115/230	P.S.C.	1L549	VW14 Pg. 8
8	500	1/12	115/230	115/230	P.S.C.	2H433	VW104 Pg. 14
9	200	1/16	115/230	115/230	P.S.C.	1L557	VW33 Pg. 20
10	500	1/10	115/230	115/230	P.S.C.	2H419	VW102 Pg. 14
10	500	1/10	115/230	115/230	P.S.C.	2H435	VW104 Pg. 14
12	25.7	1/135	115		Shaded Pole	2ZB07	VW11 Pg. 8
12	40	1/85	115	115	Shaded Pole	4LL07	VW11 Pg. 8
12	113	1/10	115		Shaded Pole	1L488*	VW08 Pg. 12
12	113	1/20	115		Shaded Pole	3M127	VW08 Pg. 12
12	113	1/10	115		Shaded Pole	3M136	VW08 Pg. 12
12	400	1/14	115/230	115/230	P.S.C.	1L573	VW84 Pg. 16
12	500	1/9	115/230	115/230	P.S.C.	2H437	VW104 Pg. 14
12	600	1/4	115		Split Phase	5K934	VW20 Pg. 17
15	340	1/10	115/230	115/230	P.S.C.	2H421	VW102 Pg. 14
15	500	1/8	115/230	115/230	P.S.C.	2H439	VW114 Pg. 14
18	550	1/4	115		Split Phase	5K935	VW20 Pg. 17
19	250	1/12	115/230	115/230	P.S.C.	1L574	VW84 Pg. 16
20	15.2	1/120	115		Shaded Pole	2ZB08	VW11 Pg. 8
20	500	1/6	115/230	115/230	P.S.C.	2H441	VW114 Pg. 14
21	170	1/12	115/230	115/230	P.S.C.	1L558	VW33 Pg. 20
25	45	1/85	115		Shaded Pole	6Z908	VW707*
28	175	1/13	115/230	115/230	P.S.C.	1L575	VW84 Pg. 16
29	150	1/13	115/230	115/230	P.S.C.	1L586	VW89 Pg. 13
29	185	1/10	115/230	115/230	P.S.C.	2H423	VW102 Pg. 14
30	11.6	1/120	115		Shaded Pole	2ZB09	VW11 Pg. 8
30	42	1/20	115		Shaded Pole	3M128	VW08 Pg. 12
30	113	1/10	115		Shaded Pole	3M137	VW08 Pg. 12
30	113	1/10	115		Shaded Pole	3M158*	VW08 Pg. 12
30	400	1/4	115		Split Phase	5K939	VW20 Pg. 17
30	800	1/2	115		Split Phase	2Z794	VW40 Pg. 17
31	360	1/5	115/230	110/220	P.S.C.	2H444	VW114 Pg. 14
35	50	1/25	115/230	115/230	P.S.C.	1L550	VW14 Pg. 8
39	89	1/12	115/230	115/230	P.S.C.	1L559	VW33 Pg. 20
40	330	1/4	115		Split Phase	5K941	VW20 Pg. 17
42	125	1/10	115/230	115/230	P.S.C.	2H425	VW102 Pg. 14
43	265	1/5	115/230	110/220	P.S.C.	2H446	VW114 Pg. 14
48	100	1/12	115/230	115/230	P.S.C.	1L576	VW84 Pg. 16
50	25	1/45	115		Shaded Pole	6Z909	VW707*
57	85	1/13	115/230	115/230	P.S.C.	1L587	VW89 Pg. 13
60	4.7	1/120	115		Shaded Pole	2ZB10	VW11 Pg. 8
60	59	1/10	115		Shaded Pole	1L487*	VW08 Pg. 12
60	59	1/10	115		Shaded Pole	3M138	VW08 Pg. 12
60	93	1/10	115/230	115/230	P.S.C.	2H427	VW102 Pg. 14
60	200	1/4	115		Split Phase	5K940	VW20 Pg. 17
60	400	1/2	115		Split Phase	2Z795	VW40 Pg. 17
63	180	1/5	115/230	110/220	P.S.C.	2H449	VW114 Pg. 14
67	30	1/25	115/230	115/230	P.S.C.	1L551	VW14 Pg. 8
86	55	1/12	115/230	115/230	P.S.C.	1L588	VW89 Pg. 13
90	150	1/4	115		Split Phase	6K993	VW20 Pg. 17
90	287	1/2	115		Split Phase	2Z796	VW40 Pg. 17
91	130	1/5	115/230	110/220	P.S.C.	2H451	VW114 Pg. 14
107	20	1/20	115/230	110/220	P.S.C.	1L552	VW14 Pg. 8
120	2.7	1/120	115		Shaded Pole	2ZB11	VW11 Pg. 8
120	100	1/4	115		Split Phase	5K942	VW20 Pg. 17
155	30	1/12	115/230	115/230	P.S.C.	1L589	VW89 Pg. 13
155	36	1/10	115/230	115/230	P.S.C.	2H429	VW102 Pg. 14
156	77	1/5	115/230	110/220	P.S.C.	2H453	VW114 Pg. 14
185	12	1/20	115/230	115/230	P.S.C.	1L553	VW14 Pg. 8
200	1.18	1/120	115		Shaded Pole	2ZB12	VW11 Pg. 8
200	4	1/45	115	115	Shaded Pole	4LL08	VW11 Pg. 8
360	3	1/45	115	115	Shaded Pole	4LL09	VW11 Pg. 8

** Not in catalog*

DC Gearmotors

F/L RPM	F/L Torque in Lbs.	Input HP	Volts DC	Grainger SKU	Gearbox Reference and Page
0.45	50	1/1200	12	4Z832	D10HA Pg. 23
1.5	75	1/1000	12	4Z833	D10HA Pg. 23
3.4	30	1/400	12	4Z834	D10HA Pg. 23
4.5	38	1/200	12	4Z835	D10HA Pg. 23
6	50	1/30	12	1L480	VW83 Pg. 29
6	500	1/15	12	1L474	VW84 Pg. 35
9	35	1/120	12	4Z836	D10HA Pg. 23
9	50	1/30	12	1L479	VW83 Pg. 29
12	40	1/90	12	4Z837	D10H Pg. 23
12	250	1/15	12	1L473	VW84 Pg. 35
17	16	1/160	12	4Z838	D10H Pg. 22
20	150	1/15	12	1L472	VW84 Pg. 35
21	50	1/30	12	1L478	VW83 Pg. 29
25	15	1/160	12	4Z839	D10H Pg. 22
32	40	1/30	12	1L477	VW83 Pg. 29
40	75	1/8	12	1L471	VW84 Pg. 35
50	10	1/90	12	4Z840	D10H Pg. 22
50	26	1/30	12	1L476	VW83 Pg. 29
60	75	1/8	12	1L470	VW84 Pg. 35
90	50	1/8	12	1L469	VW84 Pg. 35
102	13	1/30	12	1L475	VW83 Pg. 29
3.2	250	1/15	90	4Z723	VW33 Pg. 40
6	177	1/12	90	4Z724	VW33 Pg. 40
6	500	1/15	90	2H455	VW132 Pg. 34
6	500	1/15	90	2H467	VW134 Pg. 34
6.5	500	1/15	90	4Z530	VW84 Pg. 35
7	50	1/100	90	4Z534	VW83 Pg. 29
10	228	1/12	90	4Z725	VW33 Pg. 40
11	50	1/75	90	4Z535	VW83 Pg. 29
12	350	1/12	90	2H457	VW132 Pg. 34
12	350	1/12	90	2H469	VW134 Pg. 34
13	250	1/15	90	4Z531	VW84 Pg. 35
21	50	1/30	90	4Z536	VW83 Pg. 29
21	150	1/15	90	4Z532	VW84 Pg. 35
23.5	102	1/12	90	4Z726	VW33 Pg. 40
29	156	1/12	90	2H459	VW132 Pg. 34
29	156	1/12	90	2H471	VW134 Pg. 34
32	43	1/30	90	4Z537	VW83 Pg. 29
42	75	1/15	90	4Z533	VW84 Pg. 35
43	105	1/12	90	2H461	VW132 Pg. 34
43	105	1/12	90	2H473	VW134 Pg. 34
45	56	1/12	90	4Z727	VW33 Pg. 40
50	26	1/30	90	4Z538	VW83 Pg. 29
61	78	1/12	90	2H463	VW132 Pg. 34
61	78	1/12	90	2H475	VW134 Pg. 34
89	34	1/15	90	4Z728	VW33 Pg. 40
102	13	1/30	90	4Z539	VW83 Pg. 29
157	30	1/12	90	2H465	VW132 Pg. 34
157	30	1/12	90	2H477	VW134 Pg. 34

** Not in catalog*

Universal AC/DC Series

F/L RPM	F/L Torque in. Lbs.	Input HP	Volts 60Hz	Volts 50HZ	Volts 50HZ	Motor Type	Grainger SKU	Gearbox Reference and Page
2.8	250	1/15	115	115	115	Left Hand	2Z797	VW03 Pg. 41
4.0	250	1/15	115	115	115	Right Hand	1L486	VW03 Pg. 41
6.7	162	1/15	115	115	115	Left Hand	2Z798	VW03 Pg. 41
6.7	162	1/15	115	115	115	Right Hand	1L485	VW03 Pg. 41
12.8	110	1/15	115	115	115	Left Hand	2Z799	VW03 Pg. 41
12.8	110	1/15	115	115	115	Right Hand	1L484	VW03 Pg. 41
21	100	1/15	115	115	115	Left Hand	2ZB00	VW03 Pg. 41
21	100	1/15	115	115	115	Double	2ZB01	VW03 Pg. 41
21	100	1/15	115	115	115	Right Hand	1L483	VW03 Pg. 41
50	45	1/15	115	115	115	Left Hand	2ZB02	VW03 Pg. 41
50	45	1/15	115	115	115	Right Hand	1L482	VW03 Pg. 41
100	27	1/15	115	115	115	Left Hand	2ZB03	VW03 Pg. 41
100	27	1/15	115	115	115	Right Hand	1L481	VW03 Pg. 41

NOTE: DC and AC/DC Gearmotors are listed with F/L RPM at maximum voltage shown. They are typically operated with a speed control allowing speed adjustment from 0 to the F/L RPM listed. Please refer to the index for motor controls. For Linear Actuators, see page 42.

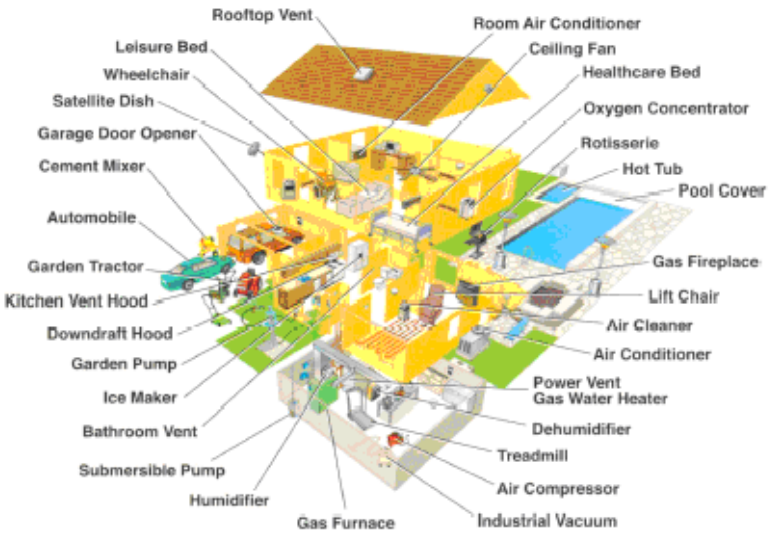
SOLUTIONS. SELECTION. SUPPORT.

VonWeise ... Powering Industry Through Innovation.

Today, VonWeise is committed to an entirely new way of doing business through a powerful combination of Solutions, Selection and Support.

Engineering expertise and innovative thinking drive VonWeise to improve products and services for our customers, assuring the highest quality products at the most competitive cost.

The applications for VonWeise Motors products are virtually endless.



Solutions

VonWeise provides customized solutions beyond bare shaft motors. We work with you to maximize your creativity providing innovative and cost-effective solutions for your application.

Selection

We deliver solutions from our complete selection of VonWeise AC and DC motors, blowers, gearmotors, linear actuators and controls. Our ability to package motors with other components helps you eliminate additional outsourcing and reduces assembly time.

Support

At VonWeise we take a very advanced approach to design and manufacturing, but our commitment to customer service is a time-honored one that will continue. Our hands-on support team includes comprehensive design assistance and rapid prototyping. In addition, facilities are equipped with a certified UL testing laboratory designed to perform tests including acoustic and vibration analysis.