



Gear & Engineering Corp.



**PowerSTAR**<sup>®</sup>



## 712 DC Series Gearmotor Guide

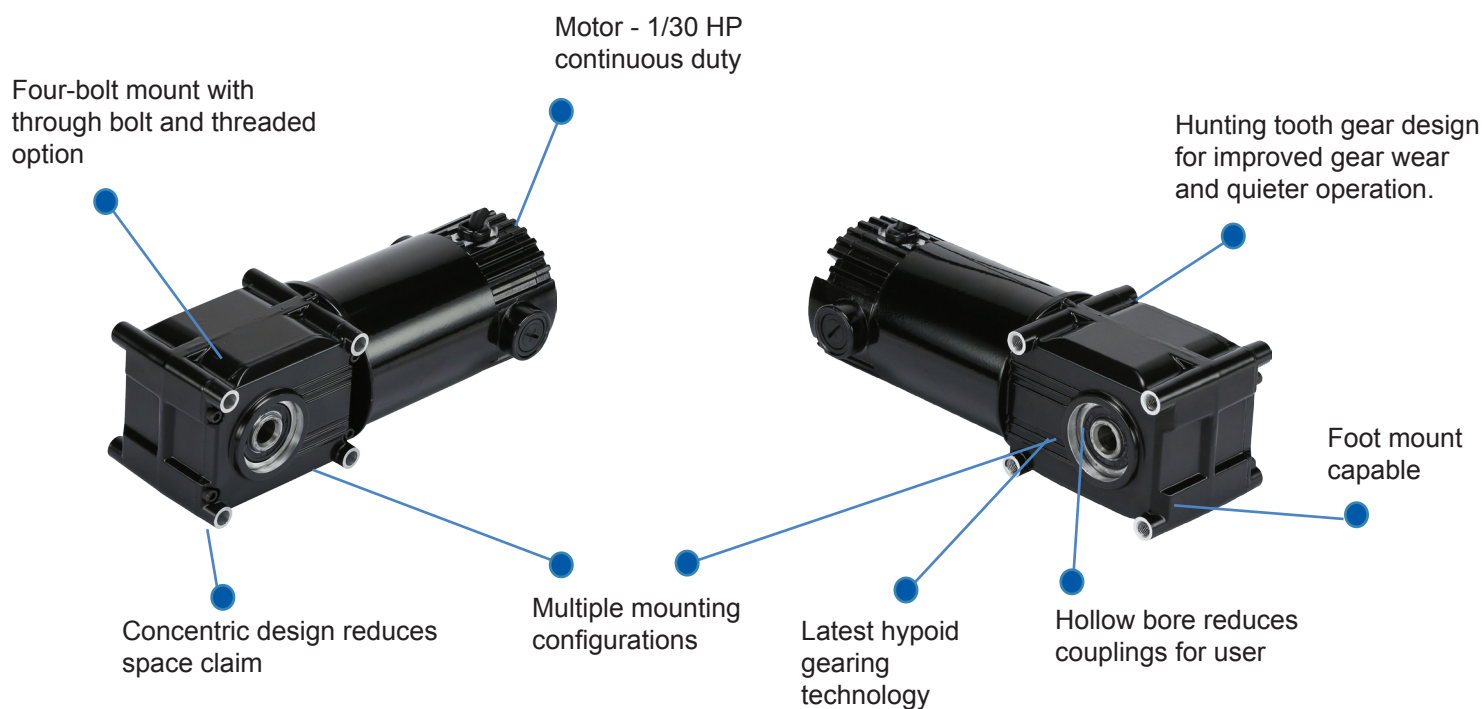
### Best-in-Class Right Angle Hypoid Gearmotors

- Compact size
- Variable speed control
- Advanced hypoid gearing technology for improved energy efficiency
- Maximum power density means a compact profile without compromising performance
- Exclusive PowerSTAR<sup>®</sup> EP lubricant for extended life
- Ground gearing provides whisper quiet operation, low backlash precision
- Custom options available
- Perfect for remote applications, light conveyors and packaging equipment

## New Hypoid Gear Technology from Bison

The new right-angle design PowerSTAR® 712 DC series gearmotor combines the latest technology in hypoid gearing with Bison's long-established reputation of providing best-in-class power transmission solutions under our Robusticity® design philosophy. The PowerSTAR 712 DC series features hypoid gearing manufactured using technology exclusive to Bison to offer several operational advantages:

- Higher torque capability
- Up to 4X more efficient than traditional technology right angle gearmotors
- Quieter operation
- Unmatched energy efficiency
- Smaller size for compact applications



PowerSTAR's 712 DC series product offering includes 12, 24, 90, 130 and 180 voltage options on their 712 series gearbox for all 14 standard ratios offering output torque from 10-240 in-lbs. Other frame sizes and gearing packages coming soon.

Bison's right-angle PowerSTAR 712 gearmotor is ideally suited to drive higher torque at improved efficiencies in packaging, light industrial or other light-to-medium conveying applications, saving the end user on power consumption and cost.

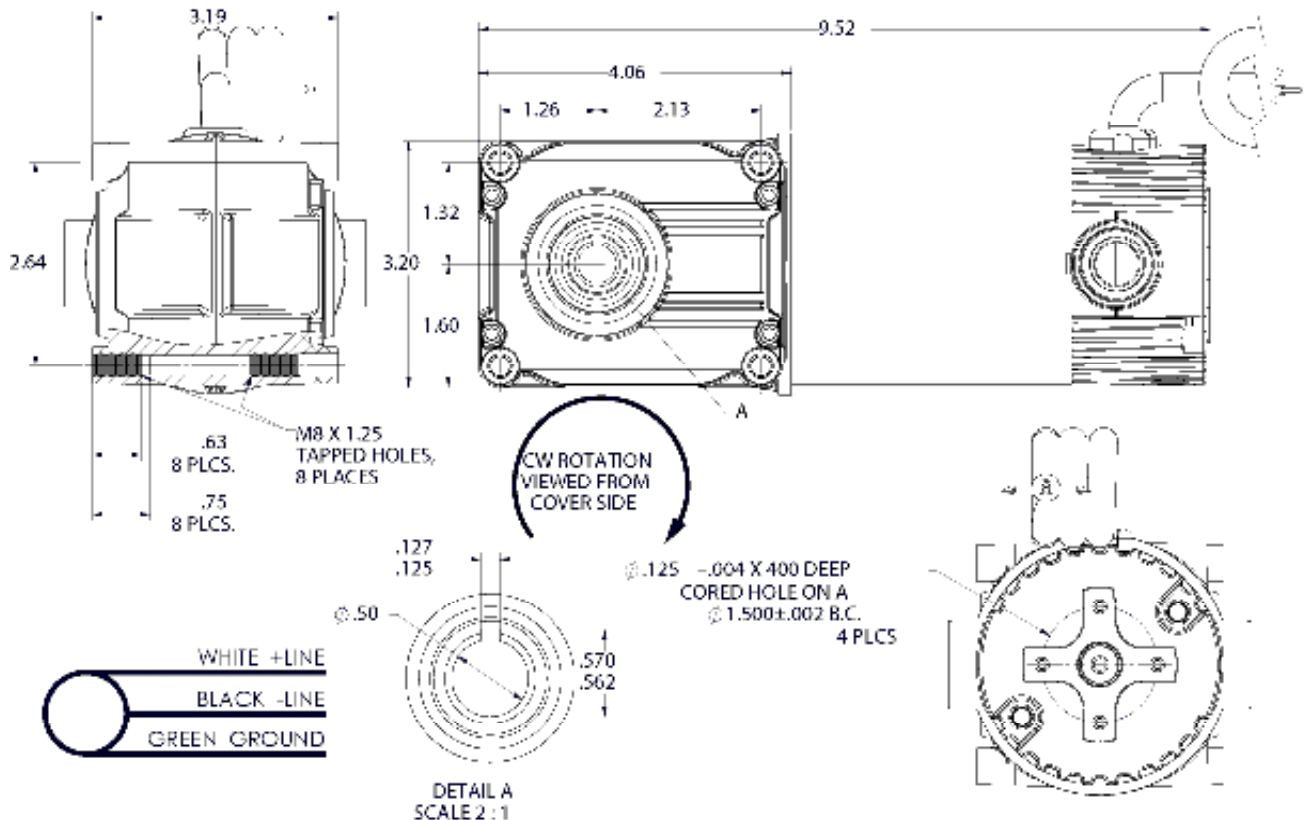
## Maximum Efficiency Right-angle Gearmotors

### 712 Series 12V DC

PowerSTAR® 712 Series 12V DC right-angle gearmotor offers up to 240 in-lbs of torque running continuously for reliable and energy efficient operation.

#### 712 Series 12V DC Gearmotor - TENV\*

Part Number	Speed (RPM)	Torque (in-lbs)	Input HP	Gear Ratio	Stages
021-712A0010	179	10	1/30	10	2
021-712A0015	119	15	1/30	15	2
021-712A0020	89	20	1/30	20	2
021-712A0030	60	30	1/30	30	2
021-712A0040	45	40	1/30	40	2
021-712A0050	36	50	1/30	50	2
021-712A0060	30	60	1/30	60	2
021-712A0080	22	80	1/30	80	3
021-712A0100	18	100	1/30	100	3
021-712A0120	15	120	1/30	120	3
021-712A0150	12	150	1/30	150	3
021-712A0180	10	180	1/30	180	3
021-712A0200	9	200	1/30	200	3
021-712A0240	7.4	240	1/30	240	3

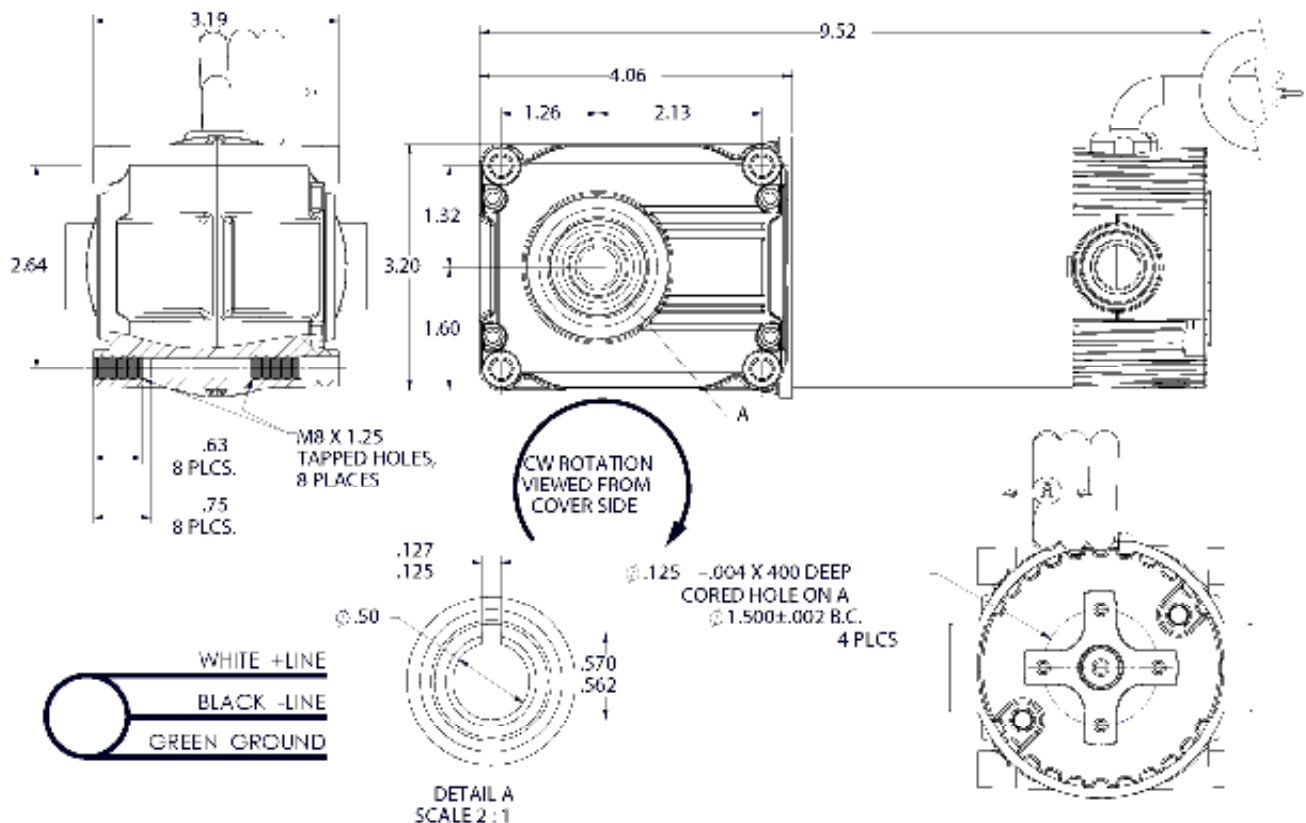


## Maximum Efficiency Right-angle Gearmotors 712 Series 24V DC

PowerSTAR® 712 Series 24V DC right-angle gearmotor offers up to 240 in-lbs of torque running continuously for reliable and energy efficient operation.

### 712 Series 24V DC Gearmotor - TENV\*

Part Number	Speed	Torque	Input HP	Gear Ratio	Stages
021-712C0010	185	10	1/30	10	2
021-712C0015	123	15	1/30	15	2
021-712C0020	92	20	1/30	20	2
021-712C0030	62	30	1/30	30	2
021-712C0040	46	40	1/30	40	2
021-712C0050	37	50	1/30	50	2
021-712C0060	31	60	1/30	60	2
021-712C0080	23	80	1/30	80	3
021-712C0100	19	100	1/30	100	3
021-712C0120	15	120	1/30	120	3
021-712C0150	12	150	1/30	150	3
021-712C0180	10	180	1/30	180	3
021-712C0200	9.2	200	1/30	200	3
021-712C0240	7.7	240	1/30	240	3



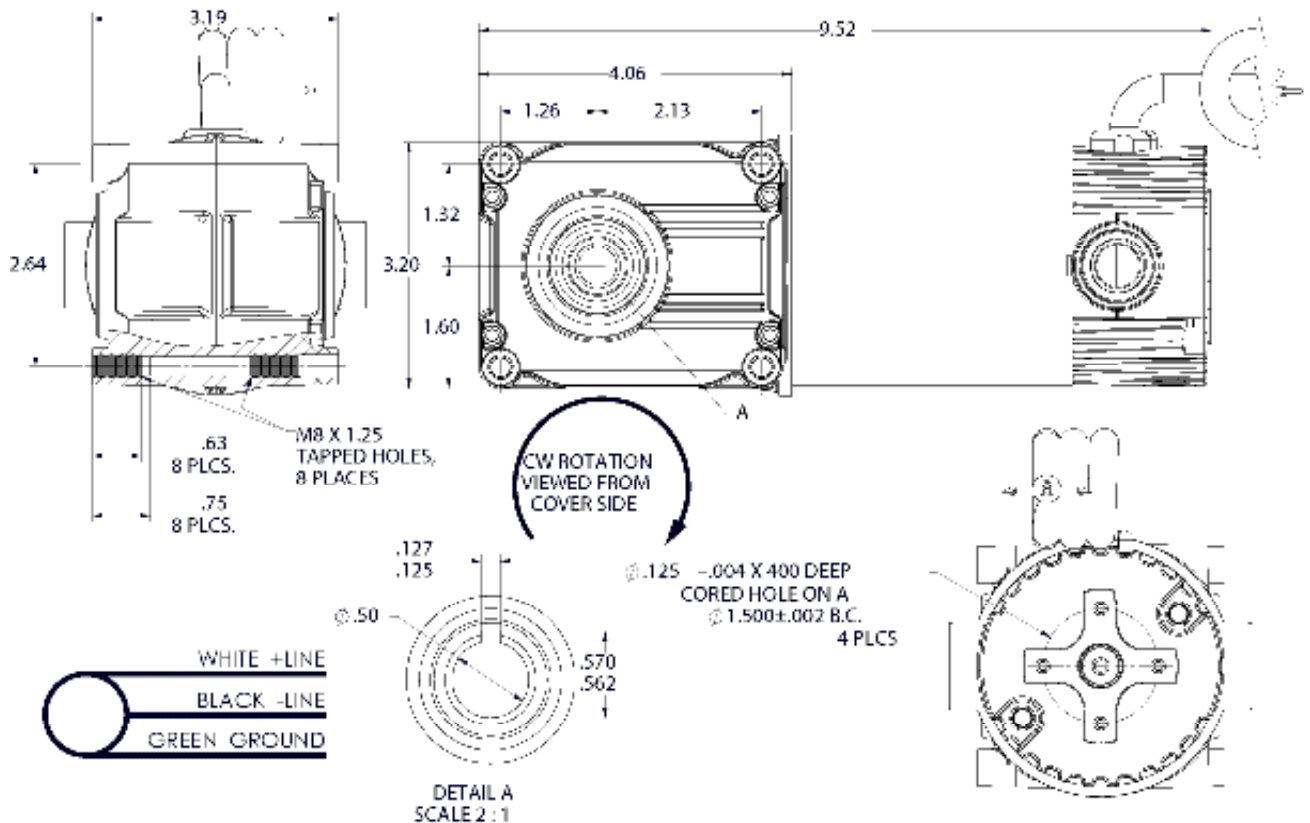
## Maximum Efficiency Right-angle Gearmotors

### 712 Series 90V DC

PowerSTAR® 712 Series 90V DC right-angle inverter duty gearmotor offers up to 240 in-lbs of torque running continuously for reliable and energy efficient operation.

#### 712 Series 90V DC Gearmotor - TENV\*

Part Number	Speed	Torque	Input HP	Gear Ratio	Stages
021-712D0010	185	10	1/30	10	2
021-712D0015	123	15	1/30	15	2
021-712D0020	92	20	1/30	20	2
021-712D0030	62	30	1/30	30	2
021-712D0040	46	40	1/30	40	2
021-712D0050	37	50	1/30	50	2
021-712D0060	31	60	1/30	60	2
021-712D0080	23	80	1/30	80	3
021-712D0100	19	100	1/30	100	3
021-712D0120	15	120	1/30	120	3
021-712D0150	12	150	1/30	150	3
021-712D0180	10	180	1/30	180	3
021-712D0200	9.2	200	1/30	200	3
021-712D0240	7.7	240	1/30	240	3



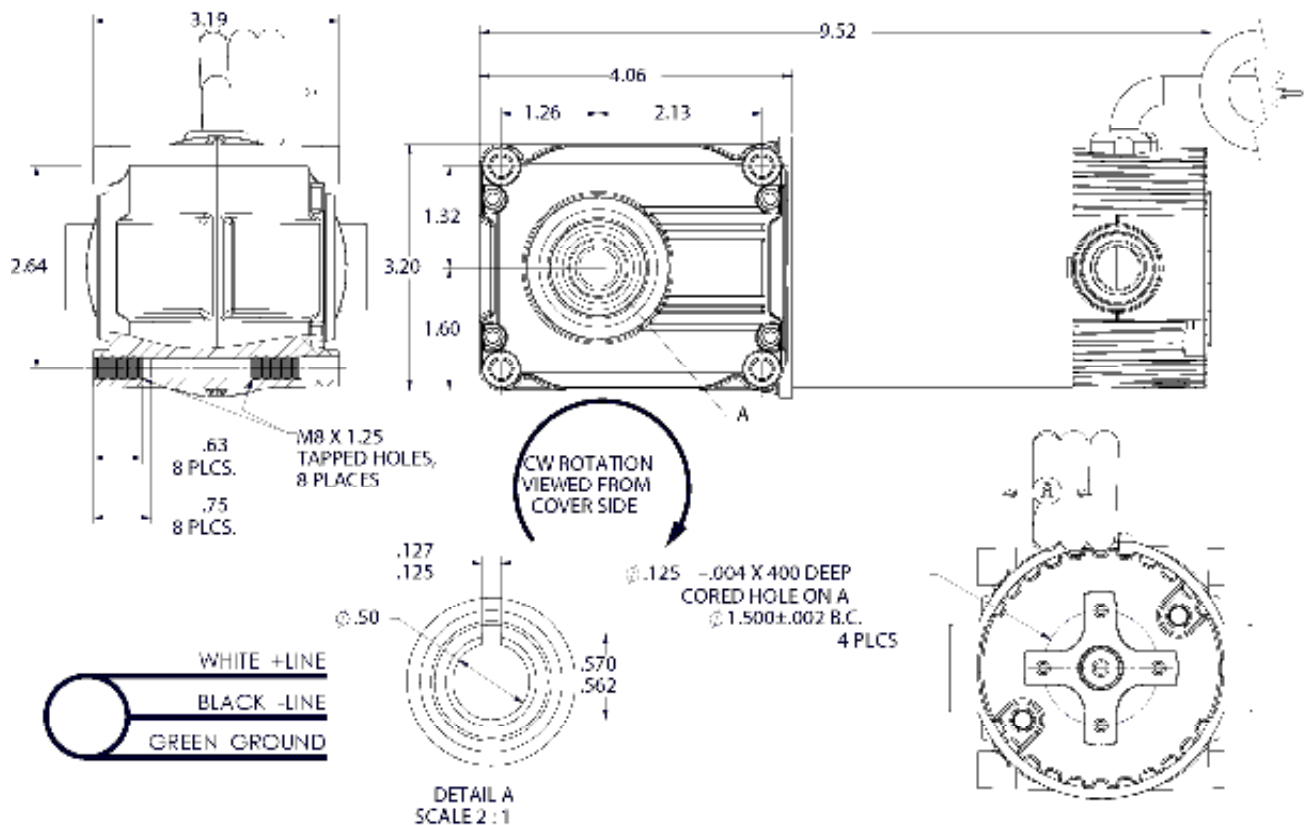
## Maximum Efficiency Right-angle Gearmotors

### 712 Series 130V DC

PowerSTAR® 712 Series 130V DC right-angle gearmotor offers up to 240 in-lbs of torque running continuously for reliable and energy efficient operation.

#### 712 Series 130V DC Gearmotor - TENV\*

Part Number	Speed	Torque	Input HP	Gear Ratio	Stages
021-712F0010	182	10	1/30	10	2
021-712F0015	121	15	1/30	15	2
021-712F0020	91	20	1/30	20	2
021-712F0030	61	30	1/30	30	2
021-712F0040	45	40	1/30	40	2
021-712F0050	36	50	1/30	50	2
021-712F0060	30	60	1/30	60	2
021-712F0080	23	80	1/30	80	3
021-712F0100	18	100	1/30	100	3
021-712F0120	15	120	1/30	120	3
021-712F0150	12	150	1/30	150	3
021-712F0180	10	180	1/30	180	3
021-712F0200	9	200	1/30	200	3
021-712F0240	7.6	240	1/30	240	3



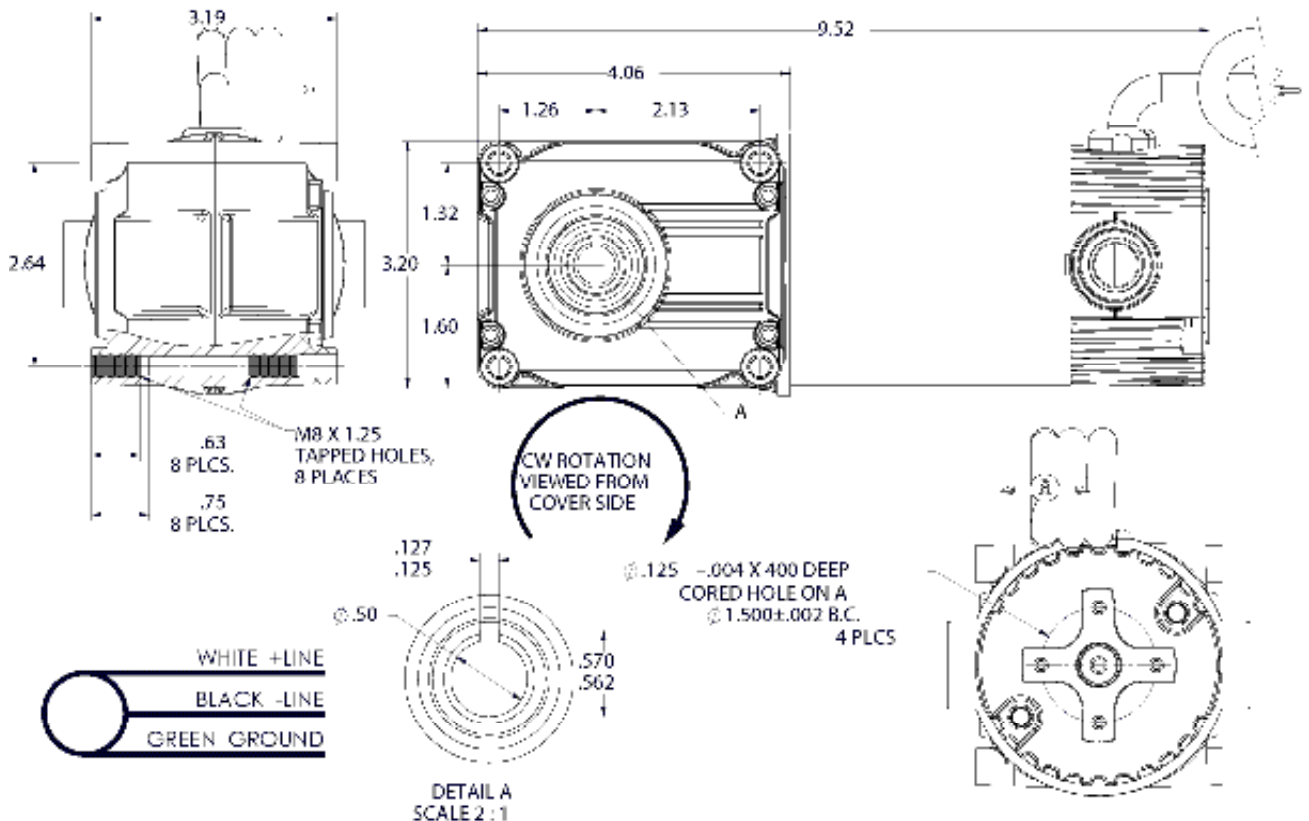
## Maximum Efficiency Right-angle Gearmotors 712 Series 180V DC

PowerSTAR® 712 Series 180V DC right-angle gearmotor offers up to 240 in-lbs of torque running continuously for reliable and energy efficient operation.

### 712 Series 180V DC Gearmotor - TENV\*

Part Number	Speed (RPM)	Torque (in-lbs)	Input HP	Gear Ratio	Stages
021-712A0010	188	10	1/30	10	2
021-712A0015	125	15	1/30	15	2
021-712A0020	94	20	1/30	20	2
021-712A0030	63	30	1/30	30	2
021-712A0040	47	40	1/30	40	2
021-712A0050	38	50	1/30	50	2
021-712A0060	31	60	1/30	60	2
021-712A0080	24	80	1/30	80	3
021-712A0100	19	100	1/30	100	3
021-712A0120	16	120	1/30	120	3
021-712A0150	13	150	1/30	150	3
021-712A0180	11	180	1/30	180	3
021-712A0200	9.4	200	1/30	200	3
021-712A0240	7.8	240	1/30	240	3

\*Capacitors required - Please reference Part Number: 195-712-3000



Bison's filtered pulse-width-modulated (PWM) variable speed DC drives provide exceptional performance. This series of drives, housed within a NEMA 4X enclosure, guarantees protection from washdown, corrosive material, windblown dust, incidental contact with enclosed equipment, or unwanted external objects.

## PWM DC NEMA 4X



### Bison Dual Voltage PWM Speed Controls NEMA 4X

Part Number	HP Rating 120VAC	HP Rating 240 VAC	Field Supply (VDC)	Output Amps	Configuration
170-243-0003	1/20 - 1/3	1/8 - 1/2	50/100/200 (1 amp)	3.0	NEMA 4X

### Dual Voltage SCR Speed Controls NEMA 4X

Input Voltage	115/230VAC ± 10%, 60/50Hz, single phase
Output Voltage	0-130 or 0-240 VDC
Form Factor (AC Amps/DC Amps)	1.05

### Bison Shaft Mount Encoder

Part Number	Voltage	Pulses	Channels
P208-010-0012	5	12	1
P208-010-0030	5	30	1
P208-010-0100	5	100	1
P208-010-2030	5	30	2

### Bison Shaft Mount Encoder (Required for mounting)

Part Number	Dia.	Length
108-100-0316	.184"	0.88'

## Bison Encoder & Armature Shaft Extension



Encoder



Armature Shaft Extension

## Customs and Other PowerSTAR Options

Metric companion sizes are available for all imperial sizes of 712, 720, 725 and 730 series. Consult our customer service or application team for more information at **+1.630.377.4327**.

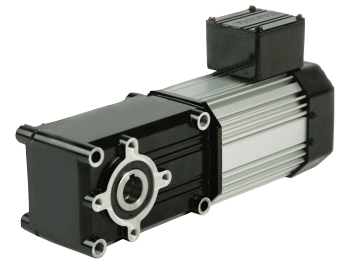
### Metric Part Numbering:

#### Standard PowerSTAR Part Number

026-725A0180 - Standard 725 Series 115 Single Phase 180 Ratio

#### Companion Metric Part Number

026**M**725A0180 - Metric 725 Series 115 Single Phase 180 Ratio



### Metric Sizes

712 Series = 12mm Hollow Shaft ID  
 720 Series = 20 mm Hollow Shaft ID  
 725 Series = 25 mm Hollow Shaft ID  
 730 Series = 30 mm Hollow Shaft ID

Seeking a PowerSTAR solution that isn't in the catalog?

Bison Gear and Engineering can provide custom solutions to specific applications. Consult with our application team today! Examples of custom options include:

- Custom Motor Sizes
- DC Option
- Custom Mounting Components

*Note: Metric and custom options are subject to special lead times. Minimum order quantities may apply. Consult Bison for more information.*