



**Model 10  
Power Wheel<sup>®</sup>  
Planetary Gear Drive**



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# AuburnGear® Power Wheel® Final Drives

## INTRODUCTION

Auburn Gear is your reliable source for a variety of power transfer products. This catalog features the Model 10 family of **Power Wheel®** Planetary Gear Drives. Other models of **Power Wheels** are also available; for a complete offering, contact Auburn Gear.

We also offer planetary gear kits and limited-slip differentials. We offer you services for design, engineering, prototype support and full testing and production capabilities. Product applications include access, agricultural, automotive, construction, forestry, industrial and marine. Auburn Gear offers you quality and reliability backed by more than 50 years of experience.

### Greater Design Flexibility

Power Wheel® planetary drives allow greater flexibility than conventional power train systems and often eliminate the need for components such as drive shafts, axles and chain drives. The many models and styles offered meet a wide range of mobile and industrial application requirements. Single, double and triple reduction ratios can be furnished. In addition, they can be supplied with a variety of motor mounts and inputs which allow them to be used with most makes of hydraulic motors.

### High Efficiency and Compact Design

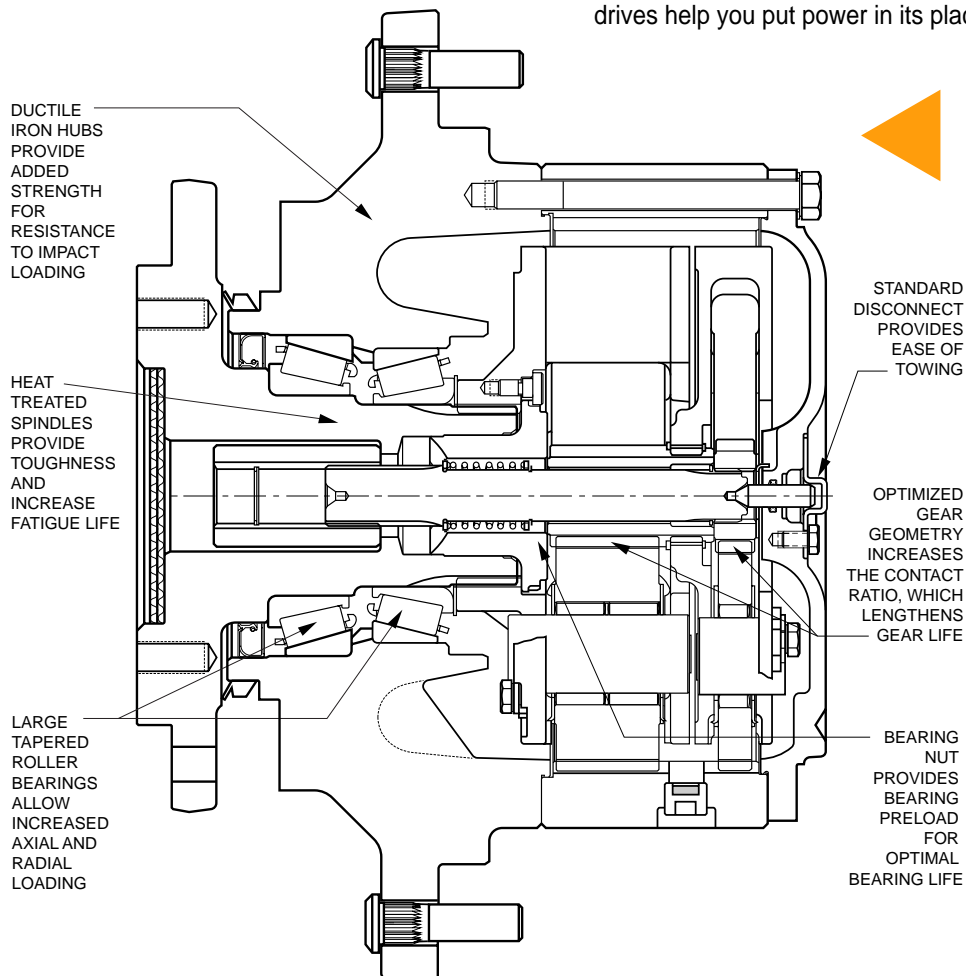
Providing 94 to 98% power transfer efficiency, Power Wheel® planetary drives are significantly more efficient than many other types of drives, including differential design planetaries. The rugged, compact design of these drives saves space and provides for long service life.

All models can be furnished with parking brakes. Auburn Gear has designed integral parking brakes in Models 5, 6, 6B, 7, 8, 8B and 9. These units provide a very compact planetary drive/parking brake package which is particularly useful in applications where space is limited.

### Responsive Performance

Power Wheel® drives deliver the power you require for smooth operation and precise control. These units are also fully reversible. Reverse power is easily obtained by reversing rotation of the input. For vehicle applications, the positive traction provided by individually powered wheels results in superior maneuverability and improved ground clearance than conventional drive systems.

Auburn Gear Power Wheel drives can be an efficient solution for any application where you need to increase torque or reduce speed to achieve usable power. Let Power Wheel® planetary drives help you put power in its place.



## MODEL 10 FEATURES

# Model 10 Wheel Drives - Double Reduction

## GENERAL SPECIFICATIONS

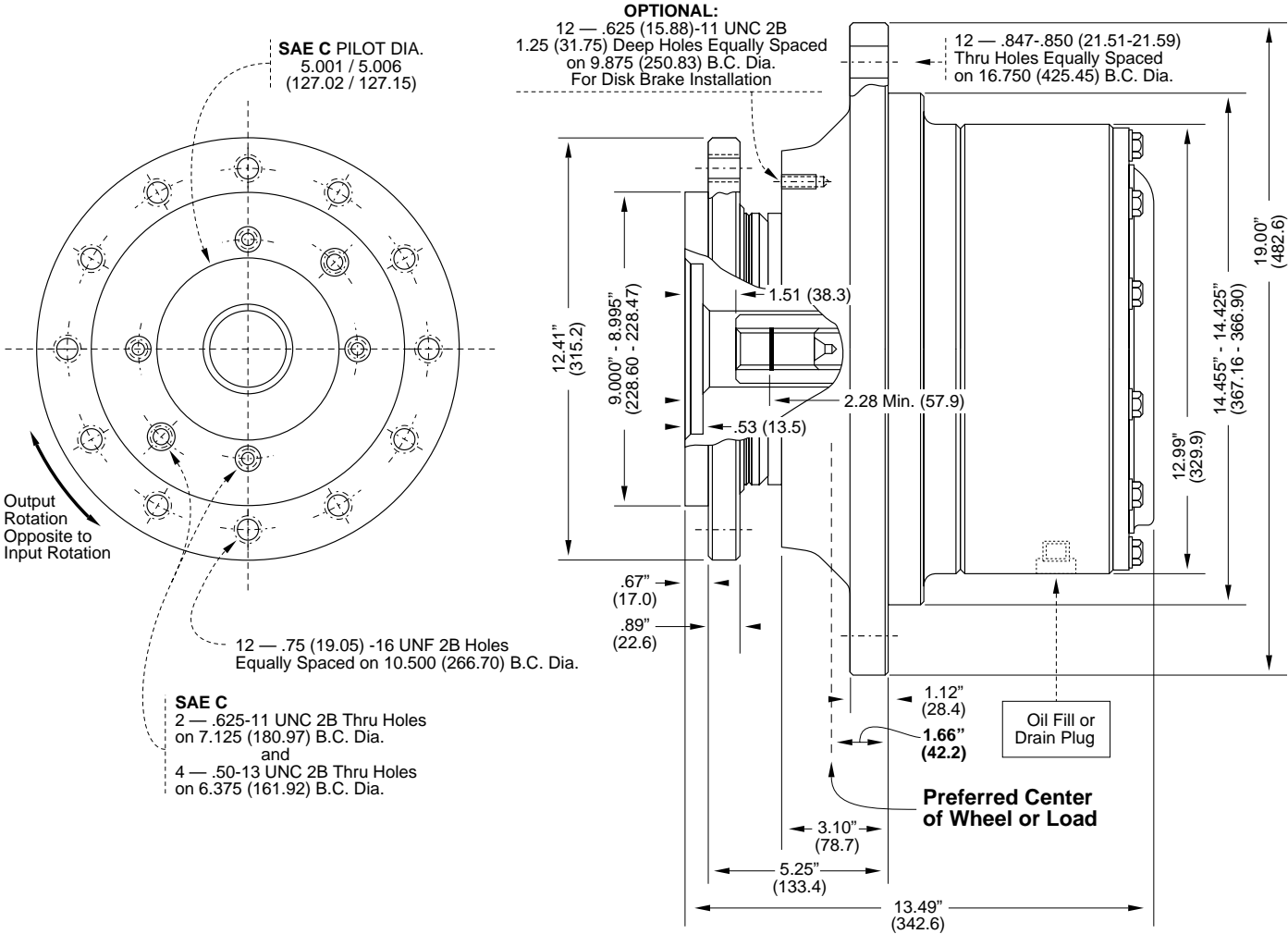
Max. intermittent output torque<sup>1</sup> 180,000 lb-in (20,340Nm)    Approximate Weight ..... 400 lbs (181.4 kg)  
 Max. input speed ..... 5,000 RPM    Oil capacity ..... 150 oz (4,435 cc)

For Lubrication Data, see Page 11

<sup>1</sup> Depending on the duty cycle and the nature of the application, a normal continuous output torque of 1/3 to 1/2 of the maximum Intermittent should yield satisfactory Power Wheel life. Customer testing and application analysis is strongly recommended.

Dimensions given in: INCHES (mm)

"O" Ring or Gasket required (not supplied by Auburn Gear)  
 "O" Ring Size: SAE C 2-159

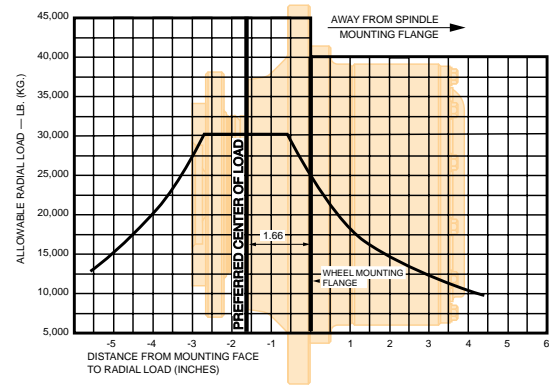


NON-POWERED UNITS ARE ALSO AVAILABLE - Contact Auburn Gear for Information  
 OPTIONAL PARKING BRAKES ARE ALSO AVAILABLE (See Page 11)

## FEATURE CHART: MODEL 10 WHEEL DRIVES - DOUBLE REDUCTION

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN	ORDER CODES	USE OPTION ORDER CODES TO BUILD ORDER NUMBER
MOTOR PILOT/HUB	SAE C	•	0W2C	0W2C
INPUT SPLINE	14T. <sup>12</sup> / <sub>24</sub>	•	14	14
RATIO OPTIONS	16.79:1 19.93:1 26.18:1 36.82:1 44.58:1 51.35:1	• • • • • •	16 19 26 36 44 52	36
WHEEL STUDS	NONE 3/4 x 3.21	• •	0 11	0
SPECIAL FEATURES	Brake Disc Holes Boot Seal Quick Disconnect Pipe Plugs Spindle Side High Strength Carrier	• Std. • • •	DH Z Q P Y	Z
Select desired characteristics from chart, note correct order codes, and order using sample format shown at right:				0W2C 14 36 0 Z

BOLDFACE INDICATES REGULAR VOLUME PRODUCED ITEMS WITH BEST AVAILABILITY.



### NOTE:

These curves are supplied as a design guide and apply to resultant radial load only. They indicate the importance of maintaining wheel position over the bearing center.

For actual analysis, applications should be reviewed by Auburn Gear Engineering using data supplied on Application Data Form.

### BEARING LOAD, LIFE AND SPEED RELATIONSHIPS

$$LF = \frac{SF \times R}{R'}$$

R = Allowable resultant load for given location from mounting flange

R' = Anticipated load at location from mounting flange

LF = Life Factor from table (*see below*)

SF = Speed Factor from table (*see below*)

OUTPUT SPEED (RPM)	SF	LF	BEARING HOURS B-10 LIFE
5	2.456	.584	500
10	1.994	.719	1000
20	1.620	.812	1500
30	1.435	.886	2000
40	1.316	.947	2500
50	1.231	1.000	3000
60	1.165	1.047	3500
70	1.113	1.090	4000
80	1.069	1.130	4500
90	1.032	1.166	5000
100	1.000	1.231	6000
200	.812	1.289	7000
300	.719	1.342	8000
400	.659	1.390	9000
500	.617	1.435	10000

**CAUTION:** The same torsional loading constraints used in the driving mode must be used in the braking mode when braking through the **Power Wheel** drive gear set.

### NOTE:

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# Model 10 Shaft Output Drives - Double Reduction

**GENERAL SPECIFICATIONS**

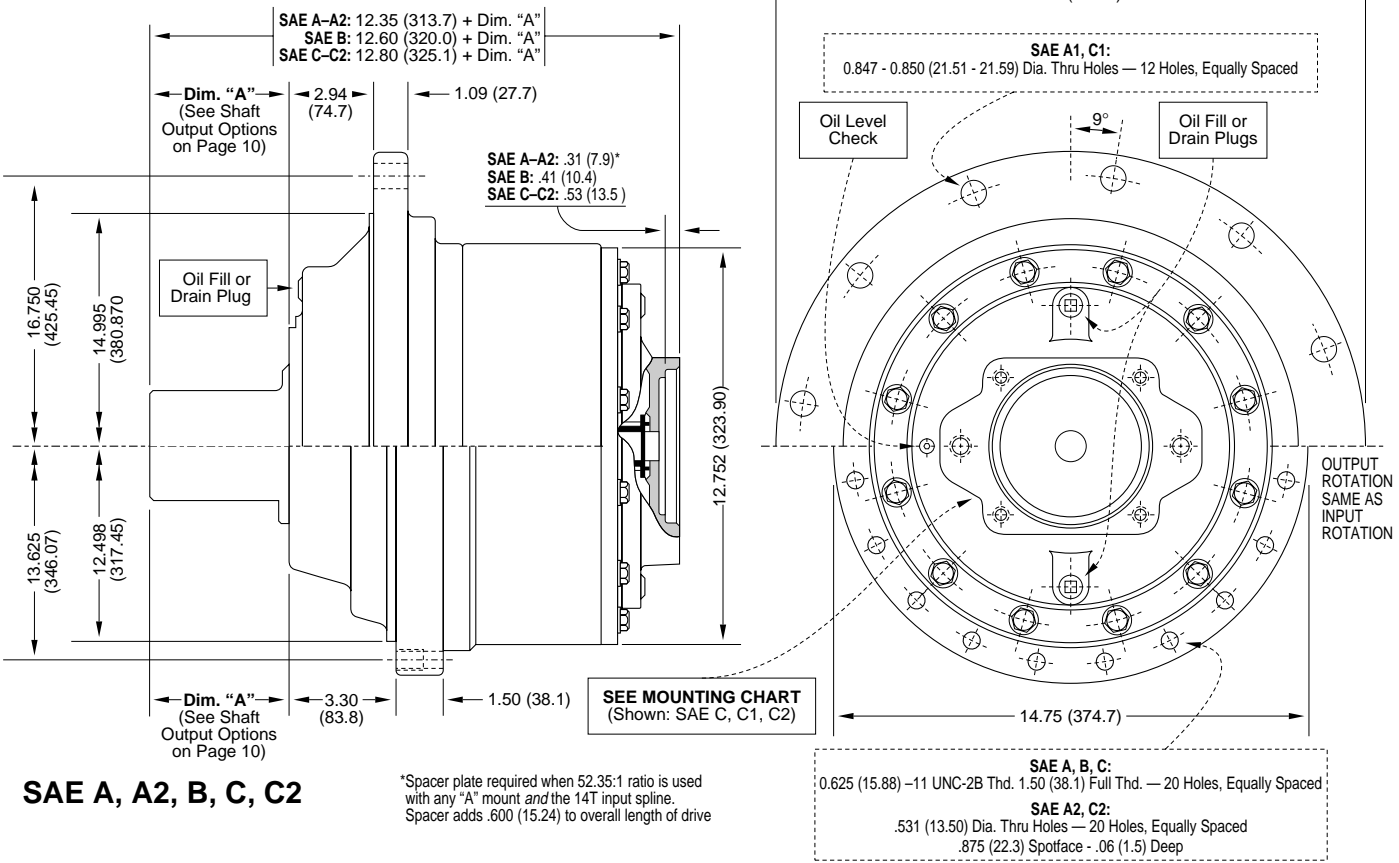
Max. intermittent output torque<sup>1</sup> 180,000 lb-in (20,340 Nm)    Approximate Weight ..... 300 lbs (136 kg)  
 Max. input speed ..... 5,000 RPM    Oil capacity ..... 150 oz (4,435 cc)

*For Lubrication Data, see Page 11*

<sup>1</sup> Depending on the duty cycle and the nature of the application, a normal continuous output torque of 1/3 to 1/2 of the Maximum Intermittent should yield satisfactory *Power Wheel* life. Customer testing and application analysis is strongly recommended.

Dimensions given in: INCHES (mm)

**SAE A1, C1**



**SAE A, A2, B, C, C2**

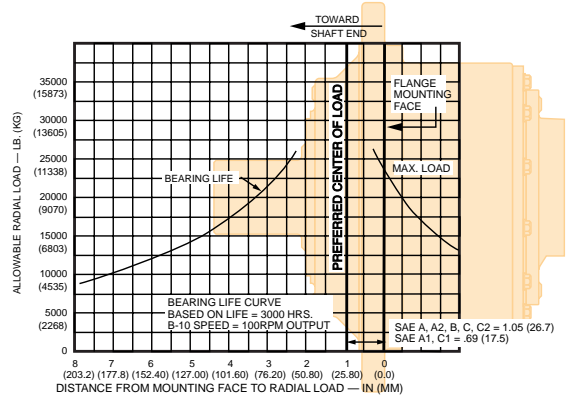
\*Spacer plate required when 52.35:1 ratio is used with any "A" mount and the 14T input spline. Spacer adds .600 (15.24) to overall length of drive

**OPTIONAL PARKING BRAKES ARE ALSO AVAILABLE (See Page 11)**

## FEATURE CHART: MODEL 10 SHAFT OUTPUT DRIVES - DOUBLE REDUCTION

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN			ORDER CODES	USE OPTION ORDER CODES TO BUILD ORDER NUMBER				
MOTOR PILOT/HUB	SAE A A1 A2 SAE B SAE C C1 C2	•			OSA OSA1 OSA2 OSB OSC OSC1 OSC2					
INPUT SPLINE	13T. - <sup>16</sup> / <sub>32</sub> 14T. - <sup>12</sup> / <sub>24</sub>	•	•	•	13 14		13			
RATIO OPTIONS	17.79:1 20.93:1 27.18:1 37.82:1 45.58:1 52.35:1*	•	•	•	17 20 27 37 45 52				52	
OUTPUT SHAFTS	20T - <sup>8</sup> / <sub>16</sub> 23T - <sup>8</sup> / <sub>16</sub> 3.75 Keyed	•	•	•	20 23 K2				20	
SPECIAL FEATURES	Grease Cavity** High Strength Carrier	•	•	•	V Y					V
Select desired characteristics from chart, note correct order codes, and order using sample format shown at right:						OSB 13 52 20 V				

\* Spacer plate required when 52.35:1 ratio is used with any "A" mount and the 14T input spline.  
 \*\* For Vertical Shaft Up Operation  
 BOLDFACE INDICATES REGULAR VOLUME PRODUCED ITEMS WITH BEST AVAILABILITY.



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### BEARING LOAD, LIFE AND SPEED RELATIONSHIPS

$$LF = \frac{SF \times R}{R'}$$

R = Allowable resultant load for given location from mounting flange  
 R' = Anticipated load at location from mounting flange  
 LF = Life Factor from table (see below)  
 SF = Speed Factor from table (see below)

OUTPUT SPEED (RPM)	SF	LF	BEARING HOURS B-10 LIFE
5	2.456	.584	500
10	1.994	.719	1000
20	1.620	.812	1500
30	1.435	.886	2000
40	1.316	.947	2500
50	1.231	1.000	3000
60	1.165	1.047	3500
70	1.113	1.090	4000
80	1.069	1.130	4500
90	1.032	1.166	5000
100	1.000	1.231	6000
200	.812	1.289	7000
300	.719	1.342	8000
400	.659	1.390	9000
500	.617	1.435	10000

**CAUTION:** The same torsional loading constraints used in the driving mode must be used in the braking mode when braking through the Power Wheel drive gear set.

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### MOTOR MOUNTING CHART

MOTOR MOUNTING HOLE DIMENSIONS	PILOT DIAMETER
<b>SAE A, A1, A2</b> (2) - .500 (12.70) -13 UNC - 2B Holes Equally Spaced on 4.187 (106.35) B. C.	Ø 3.251 - 3.256 (82.58 - 82.70)
<b>SAE B</b> (2) - .500 (12.70) -13 UNC - 2B Holes Equally Spaced on 5.750 (146.05) B. C. <b>and</b> (4) - .500 (12.70) -13 UNC - 2B Holes Equally Spaced on 5.000 (127.00) B. C.	Ø 4.001 - 4.006 (101.62 - 101.75)
<b>SAE C, C1, C2</b> (2) - .625 (15.87) -11 UNC - 2B Holes 1.10 (26.9) Deep on 7.125 (180.97) B. C. <b>and</b> (4) - .500 (12.70) -13 UNC - 2B Holes .90 (22.9) Deep on 6.375 (161.93) B. C.	Ø 5.001 - 5.006 (127.02 - 127.15)

\*\*"O" RING OR GASKET REQUIRED (Not Supplied by Auburn Gear)  
 "O" RING SIZES: SAE "A" 2-042, SAE "B" 2-155, SAE "C" 2-159

# Model 10 Spindle Output Drives - Double Reduction

**GENERAL SPECIFICATIONS**

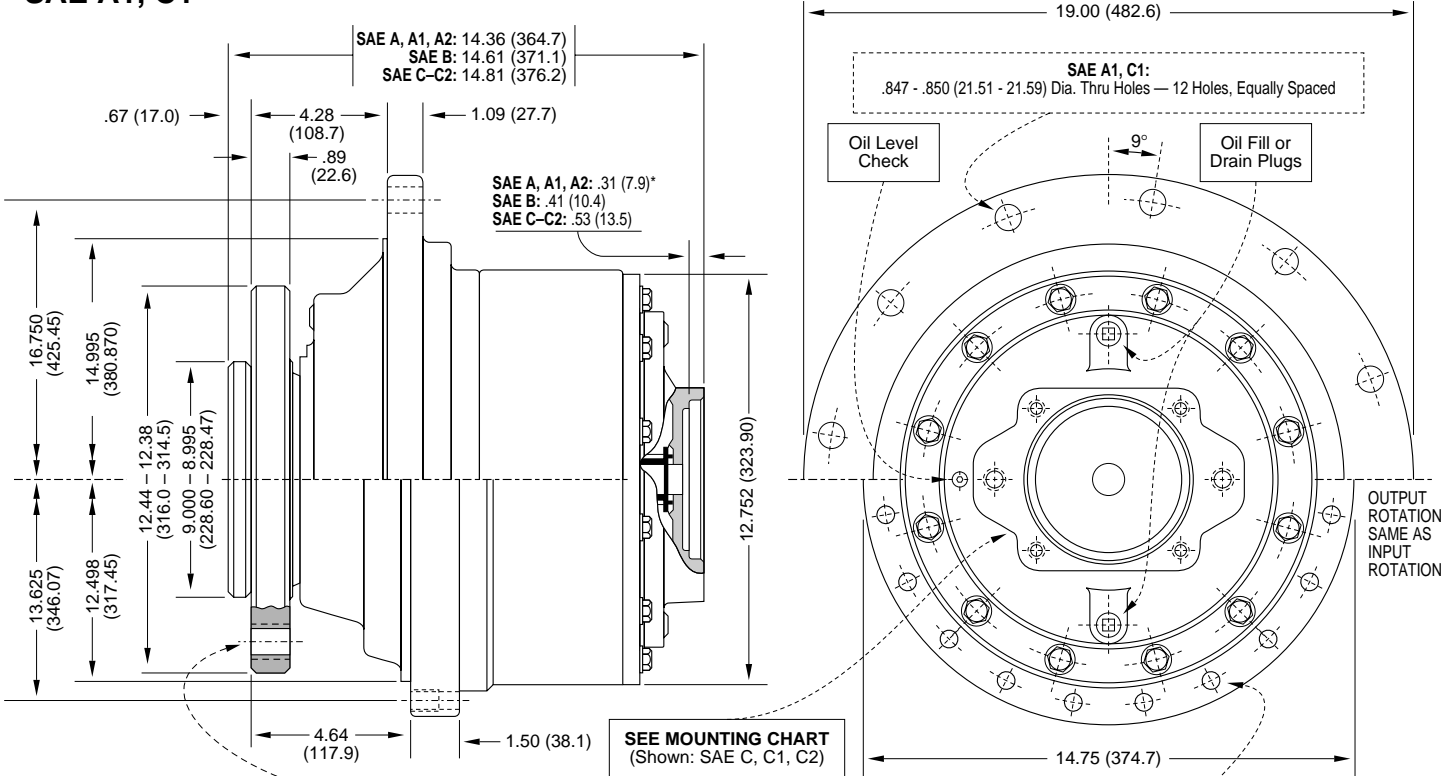
Max. intermittent output torque<sup>1</sup> 180,000 lb-in (20,340 Nm)    Approximate Weight ..... 380 lbs (172 kg)  
 Max. input speed ..... 5,000 RPM    Oil capacity ..... 150 oz (4,435 cc)

*For Lubrication Data, see Page 11*

<sup>1</sup> Depending on the duty cycle and the nature of the application, a normal continuous output torque of 1/3 to 1/2 of the maximum Intermittent should yield satisfactory *Power Wheel* life. Customer testing and application analysis is strongly recommended.

Dimensions given in: INCHES (mm)

**SAE A1, C1**



**SAE A, A2, B, C, C2**

**12 HOLES**  
 0.75 (19.1)–16 UNF Thd. Thru Holes  
 Equally Spaced on 10.500 (266.70) B.C.

**SAE A, B, C:**  
 .625 (15.88)–11 UNC-2B Thd. 1.50 (38.1) Min. Full Thd. — 20 Holes, Equally Spaced  
**A2, C2:**  
 .531 (13.49) –Thru Holes — 20 Holes, Equally Spaced  
 .875 (22.23) Spotface .06 (1.5) Deep

\*Spacer plate required when 52.35:1 ratio is used with any "A" mount and the 14T input spline. Spacer adds .600 (15.24) to overall length of drive

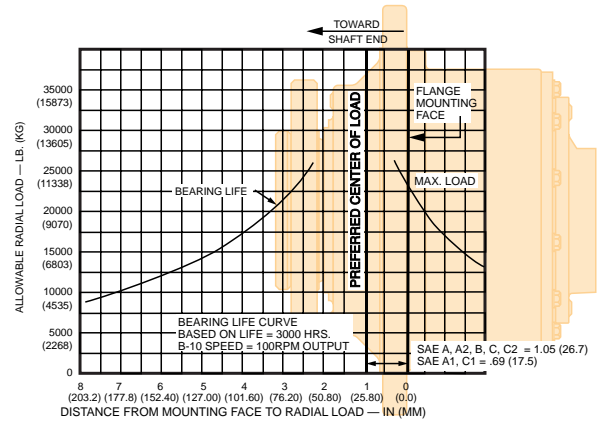
**OPTIONAL PARKING BRAKES ARE ALSO AVAILABLE (See Page 11)**

## FEATURE CHART: MODEL 10 SPINDLE OUTPUT DRIVES - DOUBLE REDUCTION

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN			ORDER CODES	USE OPTION ORDER CODES TO BUILD ORDER NUMBER		
MOTOR PILOT/HUB	SAE A	•			OSA			
	A1	•			OSA1			
	A2	•			OSA2			
	SAE B		•		OSB			
	SAE C			•	OSC			
	C1				OSC1			
	C2			•	OSC2	OSC2		
INPUT SPLINE	13T - <sup>16</sup> / <sub>32</sub>		•		13			
	14T - <sup>12</sup> / <sub>24</sub>	•		•	14		14	
RATIO OPTIONS	17.79:1	•	•	•	17			
	20.93:1	•	•	•	20			
	27.18:1	•	•	•	27			
	37.82:1	•	•	•	37			
	45.58:1	•	•	•	45			
	52.35:1*	•	•	•	52		52	
OUTPUT SPINDLE	Spindle	•	•	•	F1			F1
	Tapped Holes	•	•	•	F1			F1
SPECIAL FEATURES	Grease Cavity**	•	•	•	V			
	Boot Seal	•	•	•	Z			Z
	High Strength Carrier	•	•	•	Y			
	Metal Guard***	•	•	•	G			
Select desired characteristics from chart, note correct order codes, and order using sample format shown at right:					OSC2 14 52 F1 Z			

- \* Spacer plate required when 52.35:1 ratio is used with any "A" mount and the 14T input spline.
- \*\* For Vertical Shaft Up Operation
- \*\*\* Guard available only with SAE A, B, C configurations

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MOTOR MOUNTING HOLE DIMENSIONS	PILOT DIAMETER
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<b>SAE B</b> (2) – .500 (12.70) -13 UNC - 2B Holes Equally Spaced on 5.750 (146.05) B. C. <b>and</b> (4) – .500 (12.70) -13 UNC - 2B Holes Equally Spaced on 5.000 (127.00) B. C.	Ø 4.001 - 4.006 (101.62 - 101.75)
<b>SAE C, C1, C2</b> (2) – .625 (15.87) -11 UNC - 2B Holes 1.10 (26.9) Deep on 7.125 (180.97) B. C. <b>and</b> (4) – .500 (12.70) -13 UNC - 2B Holes .90 (22.9) Deep on 6.375 (161.93) B. C.	Ø 5.001 - 5.006 (127.02 - 127.15)

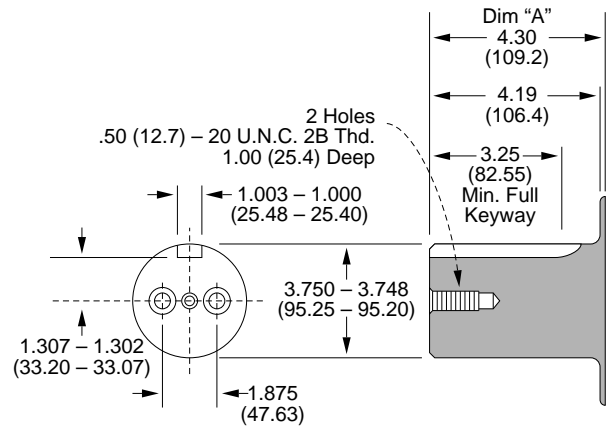
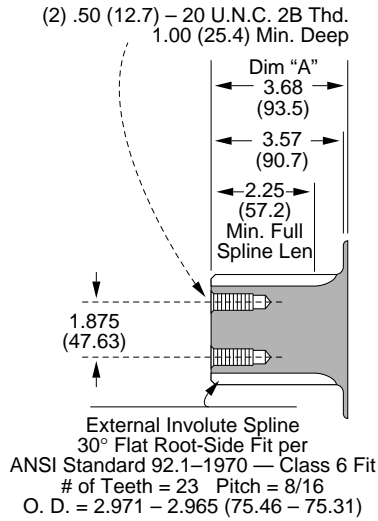
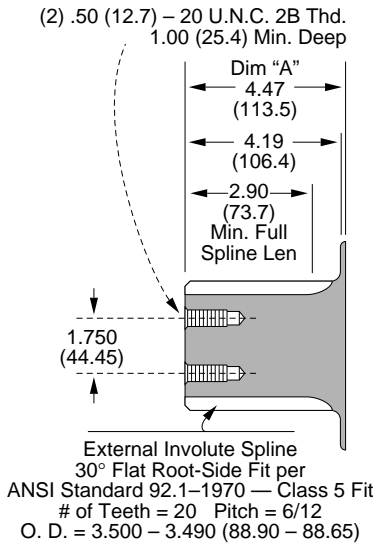
\*\*\*O\*\* RING OR GASKET REQUIRED (Not Supplied by Auburn Gear)  
"O" RING SIZES: SAE "A" 2-042, SAE "B" 2-155, SAE "C" 2-159

# Model 10 Output Shaft Options

20

23

K2

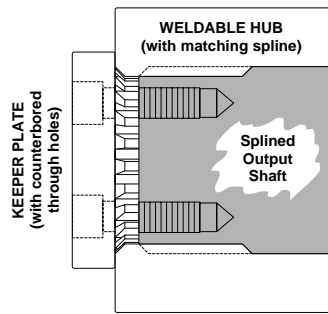


# Model 10 Other Options

## Weldable Hub

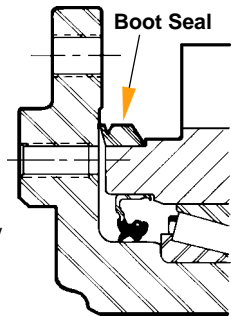
The hubs are 4140H steel and can be turned down and/or welded for mounting sprockets, pulleys, or other devices. A circular keeper plate secures the hub to the splined output shaft with two bolts (keeper plate and bolts included).

KIT NUMBER	SPLINE	FITS MODELS
6420105	23T- <sup>12</sup> / <sub>24</sub>	5, 6, & 8
6420106	23T- <sup>8</sup> / <sub>16</sub>	6B, 7, 8, 8B, 9, & 10
6420107	20T- <sup>8</sup> / <sub>16</sub>	8, 8B, & 9



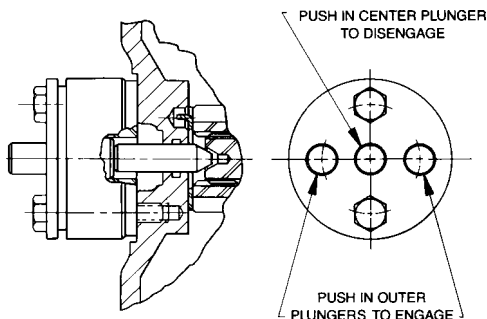
## Boot Seal

An optional seal that protects the main oil seal from dirt and other debris. The boot seal will give extended life on applications operating in extremely muddy or dirty conditions. Boot seals are available on a selective model basis.



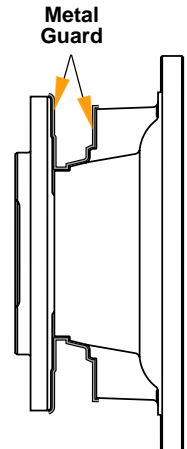
## Quick Disconnect

This optional disconnect is available on all wheel drives. No tools are needed to disengage or re-engage the drive. The planetary drive is disengaged with the push of a button. The quick disconnect eliminates removal of the disconnect cover and external contaminants are sealed from the units by internal o-rings and a gasket that is sandwiched between the disconnect and planetary cover. The rugged, compact design ensures dependable service.



## Guard and Boot Seal System

A boot seal and metal guard are available with the Model 10 SAE A, B and C configurations. These can be ordered separately or together. They function best together. The guard and boot seal system are utilized in extremely high grit applications. The guard protects the boot seal from contaminants which will ultimately wear the boot seal lip.



# C-Mount Parking Brake

## GENERAL SPECIFICATIONS

Maximum Operating Pressure .....	3,000 psi (207 bar)
Pressure Spikes or Surges not to Exceed .....	4,000 psi (276 bar)
Maximum Speed .....	5,000 RPM
Maximum Brake Cavity Cooling Oil Pressure .....	15 psi (1Bar)
Oil Fill Volume .....	150cc - Horizontal, 300cc - Vertical Mounting
Fluid Type .....	Mineral Base Hydraulic Oil

Model 10 drives (wheel, shaft, and spindle) can be supplied with an optional parking brake. The brakes are a bolt-on design, and have an SAE C 4-bolt motor mount. They operate wet and are intended for parking or holding applications only. Two sizes are currently available. The torques and release pressures are shown at right, with the ordering code for each size.

Note these brakes can be used for vertical and horizontal operation. Here is an example of an order code for a Model 10 with the parking brake option:

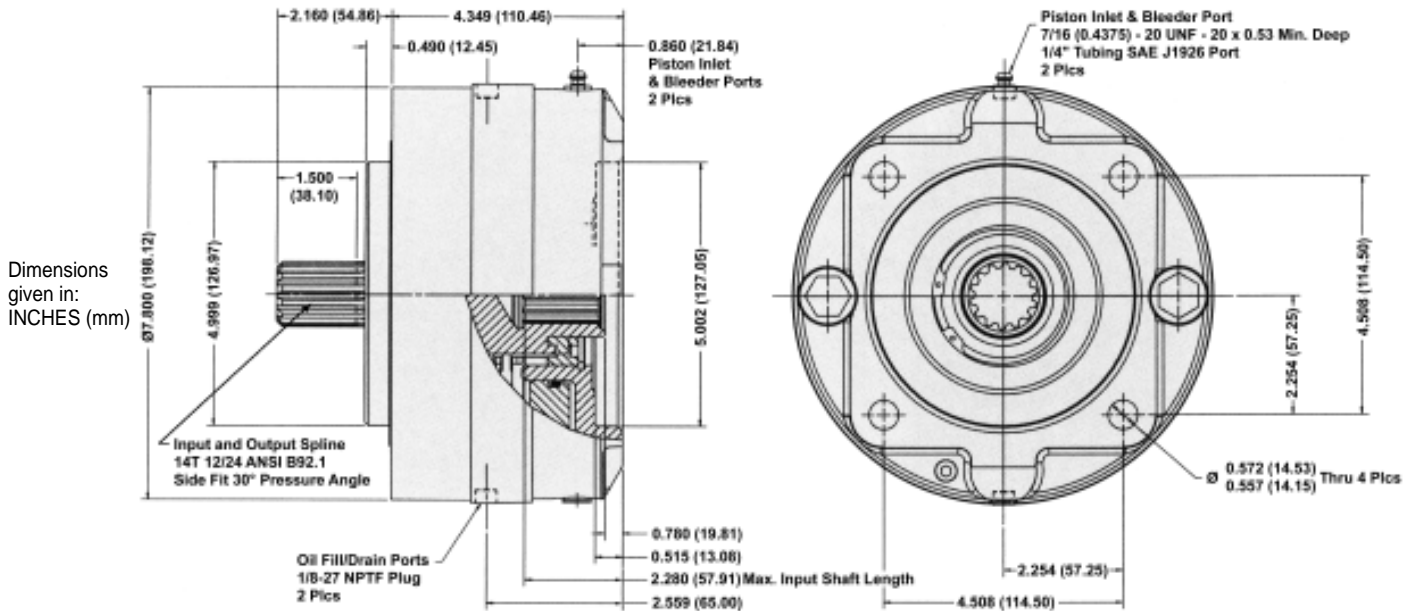
**OSC 14 37 K2 A2**

## BRAKE RATINGS

MODEL	TORQUE	MINIMUM RELEASE PRESSURE
A1	5,400 lb-in (610 N-m)	150 PSI (10.3 Bar)
A2	7,200 lb-in (815 N-m)	190 PSI (13.0 Bar)

Maximum Release Pressure (All Brake Models) = 3,000 PSI (207 Bar)

**TYPICAL MODEL SHOWN** For detailed information on other models, contact Auburn Gear



## Lubrication Data

**Power Wheel Planetary Drives are shipped without lubricant and must be filled to the proper level prior to start-up.**

- Type** - In normal applications use an extreme pressure lubricant API-GL-5 approved. AGI recommends SAE 80W, 90, 80W-90 and 85W-90 grades of lube under normal climate and operating conditions. See chart below. For severe or abnormal applications with special requirements consult either Auburn Gear or a lubricant manufacturer for further assistance.
- Change Interval** - Initial lubrication change after 50 hours of operation. Subsequent changes every 1000 hours or yearly whichever comes first.
- Lube Temperature** - Continuous operating temperatures of 160°F are allowable. Maximum intermittent temperature recommended is 200°F.
- Amount of Lube** - The unit should be half full when mounted horizontal. Lube levels for other mounts will vary. Consult Auburn Gear for details.
- Shaft or Spindle Up Mounting** - If mounting unit vertically with shaft or spindle up, special provisions apply to ensure adequate lubrication of output bearings. Consult Auburn Gear.

### Auburn Gear Power Wheel Low Temperature Gear Lube Requirement

SAE Viscosity Grade	Auburn Gear Recommended Minimum Temperature
75W-90	-40°F (-40°C)*
80W, 80W-90	-15°F (-26°C)*
85W, 85W-90	10°F (-12°C)*
90	35°F (2°C)

\* Maximum temperature for Brookfield Viscosity<sup>1</sup> of 150,000 centipoise (cP)<sup>2</sup> per SAE J306 MAR85  
<sup>1</sup> Brookfield Viscosity - *apparent viscosity* as determined under ASTM D 2983  
<sup>2</sup> 150,000 cP determined to provide sufficient low temperature lube properties for Auburn Gear Power Wheels

# Warranty Information

## Power Wheel® Warranty

Seller warrants to Purchaser that its Power Wheel® planetary gear products are free from defects in material and workmanship under normal use and service for a period of one year from the date the product is shown to have been placed into operation by original user or for two years from date of shipment from seller's plant, whichever shall first occur.

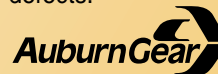
Seller's obligation under this warranty is expressly limited to the repair or replacement at its option, of the Power Wheel which is returned with a written claim of defect f.o.b. seller's factory, Auburn, Indiana, U.S.A., and which is determined by Seller to be defective in fact.

THIS IS THE SOLE AND ONLY WARRANTY OF SELLER AND NO OTHER WARRANTY IS APPLICABLE, EITHER EXPRESSED OR IMPLIED, IN FACT OR BY LAW, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE.

The sole and only remedy in regard to any defective Power Wheel shall be the repair or replacement thereof herein provided, and seller shall not be liable for any consequential, special, incidental, or punitive damages, losses or expenses resulting from or caused by any defects.

AUBURN GEAR, INC.

AUBURN, INDIANA, U.S.A.



**QS-9000**



**ISO-9001**



400 East Auburn Drive  
Auburn, Indiana 46706-3499 • USA  
PH: (219) 925-3200  
FAX: (219) 925-4725  
E-mail: auburngear@mail.fwi.com  
Web: <http://www.auburngear.com>

*All specifications and data contained herein are nominal and subject to change without notice.  
Specific applications should be referred to Auburn Gear for current information.*