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Official UK Distributor for Auburn Gear Power Wheel Drives

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Power Wheel® Model 9 Planetary Gear Drives

260.925.3200 AuburnGear.com

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WHEEL DRIVES

Standard Configurations......4-5 with A2 Series Integral Parking Brake.......6-7 with N-Series Fully Integrated Parking Brake.......8-9

SHAFT OUTPUT DRIVES

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Power Wheel® Model 9 Features



Power Wheel® Model 9 Features A2 Series Integral Parking Brake

GENERAL A2 SERIES DATA:

1. Maximum operating pressure is 3,000 psi (206.4 Bar). Pressure spikes or surges not to exceed 3,500 psi (240.8 Bar). Surge pressure in excess of 3,500 psi (240.8 Bar) caused by spikes in the hydraulic system could shorten brake life and must be avoided.

2. Use only SAE grade 8 mounting bolts and torque to 80-90 lb. ft. (108-122N-m) for motor mounting.

3. <u>PRECAUTION</u>: Bench testing may cause distortion of components or bolt failure. Mounting bolts must be used for supplemental clamping.

4. Minimum Release Pressure is defined as the hydraulic pressure required to obtain full running clearance.

5. Cubic Inch Displacement is the volume of oil required to release the brake piston 1.0 in³ (16.4cc) for a new brake and 2.0 in³ (32.8cc) for a worn brake pack.



BRAKE RATINGS								
MOUNT	MODEL	HOLDING TORQUE	MIN. RELEASE PRESSURE	STYLE				
SAE A & B	B1	1,540 lb-in (174 N-m)	190 PSI (13.1 BAR)	Short				
SAE A & B	B2	1,800 lb-in (203 N-m)	220 PSI (15.1 BAR)	Short				
SAE A & B	B3	2,400 lb-in (271 N-m)	290 PSI (20.0 BAR)	Short				
SAE B	B4	2,400 lb-in (271 N-m)	160 PSI (11.0 BAR)	Long				
SAE C	B4	2,400 lb-in (271 N-m)	135 PSI (9.3 BAR)	-				
SAE A & B	B5	3,200 lb-in (362 N-m)	220 PSI (15.1 BAR)	Long				
SAE A & B	B6	3,600 lb-in (407 N-m)	230 PSI (15.8 BAR)	Long				
SAE C	B6	3,600 lb-in (407 N-m)	185 PSI (12.7 BAR)	-				
SAE A & B	B7	4,200 lb-in (475 N-m)	260 PSI (17.9 BAR)	Long				
SAE C	B7	4,200 lb-in (475 N-m)	210 PSI (14.5 BAR)	-				

Maximum Release Pressure 3,000 PSI (206.4 BAR)

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Model 9 Wheel Drives -Double Reduction

General Specifications						
Max. intermittent output torque ^{1,2} 130,000 lb-in (14,690 Nm)	Approximate Weight	208lbs(94.3kg)				
Max. input speed ²	Approximate Oil capacity	. 57 oz (1,685 cc)				

For Lubrication Data, see Page 22

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.

Dimensions given in: INCHES (mm)





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Wheel Stud – Detail Note that the stud lengths shown in the feature chart represent the total length of the stud under the head. NON-POWERED UNITS ARE ALSO AVAILABLE Contact Auburn Gear for Information

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN		ORDER CODES	USE OPTION ORDER CODES TO BUILD PART NUMBER		ES R		
	B1	•		9WB1					
	B2	•		9WB2					
MOTOR	B3	•		9WB3					
PILOT/HUB	C1		•	9WC1	9WC1				
	C2		•	9WC2					
	C3		•	9WC3					
	13T. ¹⁶ / ₃₂	•	•	13					
INPUT SPLINE	14T. ¹² / ₂₄		•	14		14			
	21T. ¹⁶ / ₃₂		•	21					
	14.39:1	•	•	14					
	17.83:1	•	•	17					
	22.59:1	•	•	22					
RATIO OPTIONS	25.71:1	•	•	25					
	30.50:1	•	•	30					
	34.20:1	•	•	34			34		
	41.42:1	•	•	41					
	49.00:1	•	•	49					
	⁵ / ₈ "by 2.37	•	•	8				8	
	³ / ₄ " by 2.76*	•	•	9					
STUDS	³ / ₄ " by 3.21*	•	•	11					
01000	⁹ / ₁₆ by 2.75	•	•	18					
	NONE	•	•	0					
	Brake Disc**	•	•	D					
	Boot Seal	•	•	Z					Ζ
SPECIAL	Brake Disc Holes		•	DH					
FEATURES	Quick Disconnect		•	Q					
	Oil Plugs/ Spindle Side	•	•	Р					
	H.D. Multi-Lip Oil Seal		•	т					
Select desired characteristics from chart, note correct order codes, 9WC1 14 34 8 Z and order using sample format shown at right:									

FEATURE CHART: MODEL 9 WHEEL DRIVES DOUBLE REDUCTION

* Not available with B2 or C2 mounting

** Customer supplied, Auburn Gear assembled

MOTOR MOUNTING CHART					
MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER				
B1, B2, B3 (2)–.500 (12.70) -13 UNC. 2B Thd on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)				
C1, C2, C3 (4)– .500 (12.70) - 13 UNC. 2B Thd 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 "B" 2–155, SAE "C" 2–159

NOTE:

The data presented in this catalog is for general information and preliminary layout purposes only. Auburn Gear, through its policy of continual improvement, reserves the right to update its products; therefore, the information presented is subject to change. For specific application and/or dimensional information, contact Auburn Gear.



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.

R = All	$LF = \frac{SF \times R}{R'}$ $R = Allowable resultant load for given location from mounting flange$							
R' = Ar ma LF = Lif SF = Sp	 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					

BEARING LOAD, LIFE AND SPEED RELATIONSHIPS

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

AuburnGear

Power Wheel®

Model 9 Wheel Drives -Double Reduction with A2 Series Integral Parking Brake

General Sp	ecifications
Nax. intermittent output torque ^{1,2} 130,000 lb-in (14,690 Nm)	Approximate Weight
/lax. input speed ³ 3,500 RPM	Approximate Oil capacity 62 oz (1,835 cc)

For Lubrication Data, see Page 22 | For Brake Data, see Page 3

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.

³For input speeds exceeding 3,500 rpm contact Auburn Gear for duty cycle analysis.



3.01 (76.5) - B1, B2, B3, B6 - short 3.39 (86.1) - B1, B2, B3, B6 - long SAE C 3.58 (90.9) - C1, C2, C3, C6 Motor Mounting

FEATURE CHART: MODEL 9 WHEEL DRIVES DOUBLE REDUCTION with A2 SERIES BRAKE

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS ORDER USE OPTION ORDER CODES TO BUILD PART NUMBER			ODES Ber					
	B1	•		9WB1						
	B2	•		9WB2						
	B3	•		9WB3						
MOTOR PILOT/HUB	B6	•		9WB6						
T ILO IMIOD	C1		•	9WC1						
	C2		•	9WC2						
	C3		•	9WC3	9WC3					
	C6		•	9WC6						
INPUT	13T. ¹⁶ / ₃₂	•		13						
SPLINE	14T. ¹² / ₂₄	•	•	14		14				
	15T. ¹⁶ / ₃₂	•		15	r					
	14.39:1	•	•	14						
	17.83:1	•	•	17						
	22.59:1	•	•	22						
RATIO	25.71:1	•	•	25						
OPTIONS	30.50:1	·	•	30						
	34.20:1	•	•	34			34			
	41.42:1	·	•	41						
	49.00:1	•	•	49	L.					
	⁵ / ₈ "by 2.37	•	•	8				8		
WHEEL STUDS	³ / ₄ " by 2.76*	•	•	9						
	³ / ₄ " by 3.21*	•	•	11						
	⁹ / ₁₆ " by 2.75	·	·	18						
	NONE	•	•	0						
NOISE	1,540 lb-in	·		B1						
AT VE	1,800 lb-in	•		B2						
PARKING	2,400 lb-in	•		B3						
BRAKE _S	2,400 lb-ln	•	•	B4 D5						
VERS	3,200 lD-l11								De	
ONG	3,000 lb-li1								DU	
-	4,200 ID-III Brake Disc**	•	•							
	Boot Seal	•		7						7
	Brake Disc			2						2
SPECIAL	Holes	·	•	DH						
FEATURES	Quick			0						
	Dissconnect			G						
	Oil Plugs/ Spindle Side	•	•	Р						
	H. D. Multi-Lin									
	Seal		•	Т						
Select desired character	ristics from chart, note corre	ect order codes,			9WC3	14	34	8	B6	Ζ

* Not available with B2, C2, B6, or C6 mounting

** Customer Supplied, Auburn Gear Assembled

MOTOR MOUNTING CHART	
MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER
B1, B2, B3 (2)–.500 (12.70) -13 UNC. 2B Thd on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)
C1, C2, C3, C6 (4)– .500 (12.70) - 13 UNC. 2B Thd 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 "B" 2-155, SAE "C" 2-159



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 LO	AD, LIFE AND	SPEED RE	LATIONSHIPS					
$LF = \frac{SF \times R}{R'}$								
 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) SE = Speed Factor from table (age 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:

The data presented in this catalog is for general information and preliminary layout purposes only. Auburn Gear, through its policy of continual improvement, reserves the right to update its products; therefore, the information presented is subject to change. For specific application and/or dimensional information, contact Auburn Gear.

> AuburnGear **Engineered Drive Solutions**

Power Wheel®

Model 9 Wheel Drives -Double Reduction with N Series Fully Integrated Brake

General Specifications								
Max. intermittent output torque ^{1,2} 130,000 lb-in (14,690 Nm)	Approximate Weight							
Max. input speed ³	Approximate Oil capacity 62 oz (1,835 cc)							

For Lubrication Data, see Page 22

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.

³For input speeds exceeding 3,500 rpm contact Auburn Gear for duty cycle analysis.



FEATURE CHART: MODEL 9 WHEEL DRIVES DOUBLE REDUCTION with N-SERIES BRAKE

OPTIONS	DESCRIPTION	MAKE ALL S WITHIN ON	SELECTIONS IE COLUMN	ORDER CODES	USE To E	OPTIO Build	n ord Part	ER C	DDES Ber	
MOTOR	SAE B7	•		9WB7	9WB7					
PILOT/HUB	SAE C9		•	9WC9						
INPUT	14T - 12/24		•	14						
SPLINE	15T - 16/32	•		15		15				
	14.39:1	•	•	14						
	17.83:1	•	•	17						
	22.59:1	•	•	22						
RATIO	25.71:1	•	•	25						
OPTIONS	30.50:1	•	•	30						
	34.20:1	•	•	34			34			
	41.42:1	•	•	41						
	49.00:1	•	•	49						
	None	•	•	0						
	⁵/ ₈ " by 2.37	•	•	8						
WHEEL	³ / ₄ " by 2.76	•	•	9						
STUDS	³ / ₄ " by 3.21	•	•	11				11		
	⁹ / ₁₆ " by 2.75	•	•	18						
	M20-1.5-6g	•	•	19						
PARKING	2,770 lb-in/125 psi	•	•	N4					N4	
BRAKE	3,600 lb-in/300 psi	•	•	N6						
	None	•	•	00						
SPECIAL	Oil Plug on Spindle Side	•	•	Р						Ρ
. LATONEO	H.D. Multi-lip Seal	•	•	т						т
Select desired characte	ristics from chart, note corre	ect order codes,			9WB7	15	34	11	N4	PT

MOTOR MOUNTING CHART						
DIMENSION "X"	DIM. "Y"					
SAE B7: (2)500 (12.70) - 13 UNC - 2B Thd Holes on 5.750 (146.05) B.C. *	4,001 - 4,006 (101,62 - 101,75)					
SAE C9: (4) - M12 x 1.75 Thd Holes, 1.12 Min Depth, Equally Spaced on 6.375 B.C. *	5.001 - 5.006 (127.02 - 127.15)					

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



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

$LF = \frac{GF \times H}{R'}$							
R = Allowable resultant load for given location from mounting flange							
R ' = Anticipated load at location from mounting flange							
LF = Life	e Factor from	table <i>(see be</i>	elow)				
SF = Sp	eed Factor fro	m table <i>(see</i>	e below)				
OUTPUT SPEED (RPM) SF		LF	BEARING HOURS B-10 LIFE				
5 10 20	2.456 1.994 1.620	.584 .719 .812	500 1000 1500				
30 40 50	1.435 1.316 1.231	.886 .947 1.000	2000 2500 3000				

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 <u>Power Wheel</u> drive gear set.

NOTE:

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AuburnGear //

Engineered Drive Solutions

Power Wheel®

Model 9 Shaft Output Drives -Double Reduction

General Specifications

Max. intermittent output torque ^{1,2} 130,000 lb-in (14,690 Nm)	Approximate Weight 194 lbs (88kg
Max. input speed ²	Approximate Oil capacity 50 oz (1,478 cc

For Lubrication Data, see Page 22

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.



A1, B1, C1, D1



OPTIONS	DESCRIPTION	MAH WI	ke al Thin	l sel One (ECTI(ons Mn	ORDER CODES	USE OPTION ORDER CODES To build part number				
	A1	•					9SA1					
	A2	•					9SA2					
MOTOR	B1				•	•	9SB1					
PILOT/HUB	B2				•	•	9SB2					
	C1	•	•				9SC1	9SC1				
	C2	•	•				9SC2					
	D1			•			9SD1					
	13T ¹⁶ / ₃₂				•		13					
SPLINE	13T ⁸ / ₁₆			•			13					
	14T ¹² / ₂₄	•					14		14			
	1" 6B					•	6B					
	17T ¹² / ₂₄		•				17					
	15.39:1	•		•	•		15					
	18.83:1	•	•	•	•		18					
	23.59:1	٠		•	•		23					
RATIO	26.71:1	•		•	•		26					
OPTIONS	31.50:1	•			•		31			31		
	35.20:1	•			•		35					
	42.42:1	•			•		42					
	50.00:1	•			•	•	50					
	2.5" Hex	•	•	•	•	•	H1				H1	
	2.625" Hex	•	•	•	•	•	H2					
OUTPUT	3.0" Keyed	٠	•	•	•	•	K2					
SHAFTS	20T - ⁸ / ₁₆	•	•	•	•	•	20					
	23T - ⁸ / ₁₆	٠	•	•	•	•	23S					
	23T - ⁸ / ₁₆	•	•	•	•	•	23L					
SPECIAL FEATURES	Oil Plug/ Shaft Side	•	•	•	•	•	Р					Ρ
	H.D. Multi-Lip Seal	•	•	•	•	•	т					
Select desired characte and order using sample	ristics from chart, note corre format shown at right:	ect orde	r codes	8,				9SC1	14	31	H1	Ρ

FEATURE CHART: MODEL 9 SHAFT OUTPUT DRIVES - DOUBLE REDUCTION

MOTOR MOUNTING CHART									
MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER								
A1, A2 (4)–.500 (12.70) -13 UNC 2B Thd Holes on 4.188 (106.38) B.C.	ø 3.251 - 3.256 (82.58 - 82.70)								
B1, B2 (2)–.500 (12.70) -13 UNC. 2B Thd Holes on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)								
C1, C2 (4)– .500 (12.70) - 13 UNC. 2B Thd Holes on 6.375 (161.93) B. C.* AND (2)– .625 (15.88) -11 UNC 2B Thd Holes on 7.125 (180.98) B.C.	ø 5.001 - 5.006 (127.02 - 127.15)								
D1 (4)–.750 (19.05) -10 UNC. 2B Thd Holes on 9.00 (228.60) B. C.	ø 6.001 - 6.006 (152.43 - 152.55)								

* "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, SAE "D" 2-163

NOTE:

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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 <u>Power Wheel</u> drive gear set.

AuburnGear

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Auburn Gear LLC • 400 East Auburn Drive • Auburn, IN (USA)

Power Wheel® Model 9 Shaft Output Drives -Double Reduction with A2 Series Integral Parking Brake¹

General Sp	ecilications
Max. intermittent output torque ^{2,3} 130,000 lb-in (14,690 Nm)	Approximate Weight 211 lbs (96kg)
Max. input speed ⁴	Approximate Oil capacity 50 oz (1,478 cc)

For Lubrication Data, see Page 22 | For Brake Data, see Page 3

¹For vertical applications, shaft up or shaft down, contact Auburn Gear.

²Depending 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.

³If application exceeds published limits, contact Auburn Gear.

⁴For input speeds exceeding 3,500 rpm, contact Auburn Gear.

Dimensions given in: INCHES (mm)



FEATURE CHART: MODEL 9 SHAFT OUTPUT DRIVES -DOUBLE REDUCTION with A2 SERIES BRAKE

OPTIONS	DESCRIPTION	MAKE ALL S WITHIN ON	SELECTIONS	ORDER CODES	USI TO	E OPT Buil	ion 0 .D pa	RDER () Rt nun	ODES Aber	
	B1	•		9SB1	9SB1					
MOTOR	B2	•		9SB2						
PILOT/HUB	C1		•	9SC1						
	C2		•	9SC2						
INPUT	13T. ¹⁶ / ₃₂	•		13		13				
SPLINE	14T. ¹² / ₂₄	•	•	14						
	15.39:1	•	•	15						
	18.83:1	•	•	18						
	23.59:1	•	•	23						
RATIO	26.71:1	•	•	26						
OPTIONS	31.50:1	•	•	31						
	35.20:1	•	•	35						
	42.42:1	•	•	42			42			
	50.00:1	•	•	50						
	3.0" Keyed	•	•	K2						
	2.5" Hex	•	•	H1						
OUTPUT	2.625" Hex	•	•	H2						
SHAFTS	20T - 8/16	•	•	20						
	23T - 8/16	•	•	23S				23S		
	23T - 8/16	•	•	23L						
NOISE	1,540 lb-in	•		B1						
ST VEF	1,800 lb-in	•		B2					B2	
DA DKING S	2,400 lb-in	•		B3						
BRAKE S	2,400 lb-in	•	•	B4						
/ERSI	3,200 lb-in	•		B5						
1 DNC	3,600 lb-in	•	•	B6						
	4,200 lb-in	•	•	B7						
SPECIAL	Oil Plug/ Shaft Side	•	•	Р						Ρ
FEATURES	H.D. Multi-Lip Seal	•	•	т						
Select desired characte and order using sample	ristics from chart, note corr format shown at right:	ect order codes,			9SB1	13	42	23S	B2	Ρ

MOTOR MOUNTING CHART						
MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER					
B1, B2, (2)–.500 (12.70) -13 UNC. 2B Thd Holes on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)					
C1, C2 (4)– .500 (12.70) - 13 UNC. 2B Thd 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 "B" 2–155, SAE "C" 2–159

NOTE:

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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 <u>Power Wheel</u> drive gear set.

AuburnGear

Engineered Drive Solutions

Power Wheel®

Model 9 Spindle Output Drives -Double Reduction

General Specifications

Max. intermittent output torque^{1,2}130,000 lb-in (14,690 Nm)Approximate Weight208 lbs (94kg)Max. input speed²5,000 RPMApproximate Oil capacity57 oz (1,685 cc)

For Lubrication Data, see Page 22

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.



SAE A1, A2 Hole Layout



	DINVEO											
OPTIONS	DESCRIPTION	MAI Wi	MAKE ALL SELECTIONS WITHIN ONE COLUMN			ORDER CODES	USE OPTION ORDER CODES TO BUILD PART NUMBER					
	A1	•					9SA1					
	A2	•					9SA2					
MOTOR	B1				•	•	9SB1					
PILOT/HUB	B2				•	•	9SB2					
	C1	•	•				9SC1	9SC1				
	C2	•	•				9SC2					
	D1			•			9SD1					
	13T ¹⁶ / ₃₂				•		13					
SPLINE	13T ⁸ / ₁₆			•			13					
	14T ¹² / ₂₄	•					14		14			
	1" 6B					•	6B					
	17T ¹² / ₂₄		•				17					
	15.39:1	•		•	•		15					
	18.83:1	•	•	•	•		18					
	23.59:1	•		•	•		23					
RATIO	26.71:1	•		•	•		26					
OPTIONS	31.50:1	•			•		31			31		
	35.20:1	•			•		35					
	42.42:1	•			•		42					
	50.00:1	•			•	•	50					
	Tapped Holes 5/8	•	•	•	•	•	F1				F1	
SPINDLE	Thru Holes	•	•	•	•	•	F2					
OF INDEE	Tapped Holes 3/4	•	•	•	•	•	F5					
	Boot Seal	•	•	•	•	•	Z					Ζ
	Brake Disc Holes	•	•	•	•	•	DH					
SPECIAL	Metal Seal Guard*	•	•		•	•	G					
FEATURES	Oil Plug/ Spindle Side	•	•	•	•	•	Р					
	Metal Spindle Guard*	•	•		•	•	G1					
Select desired characteristics from chart, note correct order codes, 9SC2 14 35 F1 Z												

FEATURE CHART: MODEL 9 SPINDLE OUTPUT DRIVES - DOUBLE REDUCTION

 $^{\ast}\textsc{Only}$ available with A2, B2, AND C2 mountings and the F5 spindle configuration.

MOTOR MOUNTING CHART							
MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER						
A1, A2 (4)–.500 (12.70) -13 UNC 2B Thd Holes on 4.188 (106.38) B.C.	ø 3.251 - 3.256 (82.58 - 82.70)						
B1, B2 (2)–.500 (12.70) -13 UNC. 2B Thd Holes on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)						
C1, C2 (4)– .500 (12.70) - 13 UNC. 2B Thd Holes on 6.375 (161.93) B. C.* AND (2)– .625 (15.88) -11 UNC 2B Thd Holes on 7.125 (180.98) B.C.	ø 5.001 - 5.006 (127.02 - 127.15)						
D1 (4)–.750 (19.05) -10 UNC. 2B Thd Holes on 9.00 (228.60) B. C.	ø 6.001 - 6.006 (152.43 - 152.55)						

* "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, SAE "D" 2-163 NOTE:

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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 <u>Power Wheel</u> drive gear set.

AuburnGear

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Auburn Gear LLC • 400 East Auburn Drive • Auburn, IN (USA)

Power Wheel® Model 9 Spindle Output Drives -Double Reduction with A2 Series Integral Parking Brake¹

General Specifications						
Max. intermittent output torque ^{2,3} 130,000 lb-in (14,690 Nm)	Approximate Weight 220 lbs (100kg)					
Max. input speed ⁴	Approximate Oil capacity 57 oz (1,685 cc)					

For Lubrication Data, see Page 22 | For Brake Data, see Page 3

¹For vertical applications, spindle up or spindle down, contact Auburn Gear.

²Depending 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.

³If application exceeds published limits, contact Auburn Gear.

⁴For input speeds exceeding 3,500 rpm, contact Auburn Gear for duty cycle analysis.

Dimensions given in: INCHES (mm)



FEATURE CHART: MODEL 9 SPINDLE OUTPUT DRIVES - DOUBLE REDUCTION with A2 SERIES BRAKE

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN		ORDER CODES	USE OPTION ORDER CODES TO BUILD PART NUMBER					
	B1	•		9SB1	9SB1					
MOTOR	B2	•		9SB2						
PILOT/HUB	C1		•	9SC1						
	C2		•	9SC2						
INPUT	13T ¹⁶ / ₃₂	•		13		13				
SPLINE	14T ¹² / ₂₄	•	•	14						
	15.39:1	•	•	15						
	18.83:1	•	•	18						
	23.59:1	•	•	23						
RATIO OPTIONS	26.71:1	•	•	26						
	31.50:1	•	•	31						
	35.20:1	•	•	35						
	42.42:1	•	•	42			42			
	50.00:1	•	•	50						
	Spindle Tapped Holes ⁵ / ₈	•	•	F1						
OUTPUT SPINDLE	Spindle Thru Holes	•	•	F2				F2		
	Spindle Tapped Holes ³ / ₄		•	F5						
NOIS	1,540 lb-in	•		B1						
r ver,	1,800 lb-in	•		B2						
	2,400 lb-in	•		B3					B3	
BRAKE* Z	2,400 lb-in	•	•	B4						
ERSIC	3,200 lb-in	•		B5						
NG VI	3,600 lb-in	•	•	B6						
LO	4,200 lb-in	•	•	B7						
	Boot Seal	•	•	Z						Ζ
SPECIAL	Brake Disc Holes	•	•	DH						
FEATURES	Metal Seal Guard**	•	•	G						
	Metal Spindle Guard**		•	G1						
Select desired characteristics from chart, note correct order codes, 9SB1 13 42 F2 B3 Z										

and order using sample format shown at right:

*FOR HORIZONTAL OPERATION ONLY. Where vertical operation is required, contact Auburn Gear.
**Only available with B2, AND C2 mountings and the F5 spindle configuration.

MOTOR MOUNTING CHART

MOTOR MOUNTING HOLE DIMENSIONS	DIAMETER
B1, B2 (2)–.500 (12.70) -13 UNC. 2B Thd Holes on 5.750 (146.05) B. C.*	ø 4.001 - 4.006 (101.62 - 101.75)
C1, C2 (4)– .500 (12.70) - 13 UNC. 2B Thd Holes 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 "B" 2–155, SAE "C" 2–159

NOTE:

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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 <u>Power Wheel</u> drive gear set.



Power Wheel® Model 9 Shaft Input/Shaft Output Drives -Double Reduction

General Specifications

Max. intermittent output torque ^{1,2} 130,000 lb-in (14,690 Nm)	Approximate Weight	224 lbs (101.6kg)
Max. input speed ² 5,000 RPM	Approximate Oil capacity	57 oz (1,685 cc)

For Lubrication Data, see Page 22

¹Depending 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.

²If application exceeds published limits, contact Auburn Gear.

Dimensions given in: INCHES (mm)



FEATURE CHART: MODEL 9 SHAFT INPUT/SHAFT OUTPUT DRIVES - DOUBLE REDUCTION

OPTIONS	DESCRIPTION	MAKE ALL SELECTIONS WITHIN ONE COLUMN	ORDER CODES	USE OPTION ORDER CODES To build part number			DES Ber	
HUB	Small Flange Large Flange	•	9S 9S1	9S				
INPUT SHAFT OPTIONS	1 ¹ / ₂ " Keyed		K00		K00			
	15.39:1	•	15					
	18.83:1	•	18					
	23.59:1	•	23			23		
RATIO	26.71:1	•	26					
OPTIONS	31.50:1	•	31					
	35.20:1	•	35					
	42.42:1	•	42					
	50.00:1	•	50					
	3.0" Keyed	•	K2					
	3.0" Keyed	•	K5					
OUTPUT	20T ⁸ / ₁₆	•	20				20	
SHAFTS	23T ⁸ / ₁₆	•	23S					
	23T ⁸ / ₁₆	•	23L					
Select desired characte and order using sample	Select desired characteristics from chart, note correct order codes, 9S K00 23 20 and order using sample format shown at right:							



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.

$LF = \frac{SF \times R}{R'}$								
R = Allowable resultant load for given location from mounting flange								
R' = Ant mo	ticipated load unting flange	at location fr	rom					
LF = Life	Factor from	table <i>(see be</i>	elow)					
5 F = 5pe	eed Factor fro	m table (see	e Delow)					
OUTPUT SPEED			BEARING HOURS					
(RPM)	SF	LF	B-10 LIFE					
5	2.456	.584	500					
10 20	1.994 1.620	./19 .812	1000 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					
200	812	1.231	7000					
300	719	1.342	8000					

BEARING LOAD, LIFE AND SPEED RELATIONSHIPS

NOTE:

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

1.390

1.435

AuburnGear

9000

10000

19

.659

.617

400

OUTPUT SHAFT OPTIONS





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.



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.)



Quick Disconnect

This optional disconnect is available on all wheel drives. No tools are needed to disengage the drive.

The planetary drive is disengaged with the push of a button. The quick disconnect eliminates removal of the disconnect cover and external contaminates are sealed from the units by internal 0-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 9WB2 and 9WC2 wheel drives, as well as the 9SB2 and 9SC2 spindle output drives with the F5 spindle only. 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.



AuburnGear Engineered Drive Solutions

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Auburn Gear LLC • 400 East Auburn Drive • Auburn, IN (USA)

LUBRICATION DATA

POWER WHEEL PLANETARY DRIVES ARE SHIPPED WITHOUT LUBRICANT AND MUST BE FILLED TO THE PROPER LEVEL PRIOR TO START-UP

1. Type

In normal application 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.

2. Change Interval

Initial lubrication change after 50 hours of operation. Subsequent changes every 1000 hours or yearly whichever occurs first.

3. Lube Temperature

Continuous operating temperatures of 160°F are allowable. Maximum intermittent temperature recommended is 200°F.

4. Amount of Lube

The unit should be half full when mounted horizontal. Lube levels for other mounts will vary. Consult Auburn Gear for details.

5. 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 temperatre for Brookfield Viscosity¹ of 150,000 centipoise of (cP)² per SAE J306 MAR85

¹ Brookfield Viscosity - apparent viscosity as determined under ASTM D 2983

²150,000 cP determined to provide sufficient low temperature lube properties for Auburn Gear Power Wheels

All Power Wheels® are compatible with synthetic lubricants as long as they meet the above specified parameters.

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 OF 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 LLC

AUBURN, INDIANA, U.S.A.





WORKSHEET

<u>2</u> 2

GENERAL	CUSTOMERAPPLICATION MODEL OR TYPE DESIGN LIFE REQUIRED (L10)		DA	TE		
	GVW NO. OF	DRIVING WI	HEELS			
'E DATA	% OF WEIGHT OVER DRIVE WHEELS % GRADEABILITY REQUIRED	FRO	FRONT REAF MAXIMUM AVERAGE			
	SPEED REQUIREMENTS MAXIMUM	FRONT	_ WORKING	GRADE REAR		
	ROLLING RADIUS	FRONT		REAR		
DRIV	RIM OFFSET	FRONT _		REAR		
Ш	ROAD CONDITIONS					
MHE	DUTY CYCLE INFORMATION:					
	COND #1 % @	%	GRADE @	MPH	@	Radial Load (lb)
	COND #2 % @	%	GRADE @	MPH	@	Radial Load (lb)
	COND #3 % @	%	GRADE @	MPH	@	Radial Load (ID)
	COND #4 % @	%	GRADE @		W	
OR SWING DRIVE DATA			CONTINU	OUS		
	MAX. SPEED REQUIRED CONTINUOUS					
	MAX. OVERHUNG LOAD					
	DISTANCE MTG. FLANGE TO OVERHUNG LOAD					
	SPROCKET OR PINION DATA:					
	PITCH DIA GEAR PITCH					
	PRESSURE ANGLE		NO. OF TE	ETH		
DLE	DUTY CYCLE INFORMATION:					
N	COND #1 % @	LE	B. IN. @	RPM	@	Average Load (lb)
Τ, S	COND #2 % @	LE	B. IN. @	RPM	@	Average Load (lb)
IAF	COND #3 % @	LE	B. IN. @	RPM	@	Average Load (lb)
Ś	COND #4 % @	LE	B. IN. @	RPM	@	Average Load (lb)
			MED			
S	TYPE OF OUTPUT SHAFT (13T $-$ 16/32 etc.)	I	IVII F1			
AUL	SAE MOUNTING DESIGNATION (A B etc.) 2-BOLT 4-BOLT					
DR	DISPLACEMENT (CU.IN./REV.) RELIEF SETTINGS (PSI)					
Ŧ	TORQUE LB. IN.	@		PSI MAXIMUM		
A	BRAKE RELEASE TYPE: CHARGE PRESSURE	SYST	EM PRESSU	JRE		
DA	BRAKE MODEL NO MFR. (If not Auburn Gear)					
BRAKE	OTHER (NAME) PRESSURE RANGE (PSI)					
	DHARE I UKUUE					
	- (0					
AL						
ECI						
d L	Z					

AuburnCear 23







Phone 260.925.3200 • Web AuburnGear.com

PW-M9-10/15-500



Our international sales network covers every jurisdiction. Our global shipping partners mean you can be sure we're on hand whenever you need us.

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