# QUICK CHANGES AND DRIVELINE COMPONENTS





# ADVANTAGE

# THE PERMANENT MOLD

We've raised the bar with our Permanent Mold Independent diffs-the strongest production quick changes on the market.

In addition to being structurally reinforced to strengthen high-stress areas, the most significant improvement is in the A356-T6 aluminum castings. Permanent Mold casting is a state-of-the-art process that achieves stronger mechanical properties (tensile, yield, and elongation), tighter tolerances, and better density and grain structure than is possible with the sand casting process used for all other quick change centers on the market. The result is the strongest quick change available.

### **REINFORCED CENTER SECTION FEATURES**

• Thicker and longer internal ribs extending into the front snout and rear gear cavity

• Dual support ribs between the change gear cavity and the ring gear cavity

• Larger fillets (thicker metal) at mounting flanges for added torsional strength

## **MECHANICAL PROPERTY COMPARISON**

Sand Cast ASTM A356-T6 Alum	Sand Cast ASTM AZ91E-T6 Mag	Permanent Mold A356-T6 Alum (lab tested)	% Increase vs Sand Cast Alum	% Increase vs Sand Cast Mag
Tensile: 34,000	Tensile: 34,000	Tensile: 38,400	+ 13%	+ 13%
Yield: 24,000	Yield: 16,000	Yield: 32,400	+ 35%	+ 103%
Elongation: 3.5%	Elongation: 3%	Elongation: 5%	+ 43%	+ 67%

\*ASTM - American Society for Testing and Materials

\*\*Permanent Mold center sections tested by an independent lab (report available on request).

Scan QR code or click Video #05 on wintersperformance.com to watch our new Permanent Mold center sections being cast



#### ADVANTAGE IS AT THE HEART OF COMPETITION. IT'S THE EDGE THAT PUTS ONE RACER IN VICTORY LANE AND THE OTHERS ON THE TRAILER. WINTERS QUICK CHANGES HAVE AN ADVANTAGE. SEVERAL, ACTUALLY. KEEP READING.



# WHAT'S THE ADVANTAGE OF NEAR NET SHAPE FORGING?

Our latest side bells are Near Net Shape (NNS) Forged 2014-T6 Aluminum. NNS means that the raw forging (left) is as close in shape to the finished, machined part (right) as possible. The strength of a forging is partially due to the grain structure that is established in the forging process. Using NNS forgings means only the mounting surfaces and integral oil check/fill ports on our bells are machined. The rest of the forging, like the critical crown of the bell, remain as-forged for increased strength (machining a forged surface like the crown cuts into the metal's grain structure, exposing the grain ends and making parts susceptible to cracking and fatigue). Also, 2014-T6 aluminum exceeds ASTM 6061-T6 aluminum by 56% tensile strength, 50% yield and 8% elongation.





#### Standard Equipment and Options on All Full-Size Winters Independent Quick Change Diffs: \* indicates a quick change industry exclusive

- Permanent Mold A356-T6 aluminum center section\*
- Near Net Shape\* Forged 2014-T6 aluminum side bells
- Ground 9310 ring & pinion\*
- Hardened steel or optional 350M\* lower shaft
- Timken<sup>®</sup> or NTN<sup>®</sup> bearings
- ARP<sup>®</sup> ring gear bolts

- Forged 4340 steel output flanges (standard 31-spline 930 or optional 35-spline 930 and 934-style)
- Steel-lined forged 7075 aluminum spools\* (standard 31-spline or optional 35-spline)
- Forged 1350-series yoke
- Standard As-Cast finish or optional Black Thermal Coated



See inside back cover of catalog or visit website for limited warranty and venue provision.

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# PERMANENT MOLD INDEPENDENT QUIÇK CHANGE



All 10-inch independent diffs are built with a Permanent Mold A356-T6 aluminum center section and NNS forged 2014-T6 aluminum side bells, ground 9310 4.12 ring & pinion, forged 4340 output flanges, 1350-Series yoke, Timken® or NTN® bearings, and ARP® ring gear bolts.

See assembly variations, including lower shaft and output flange options, and additional upgrade options below.

#### ASSEMBLY P/N WP1958 (Standard) See Additional Assy Configurations at Right

Since the very first quick change was slammed in a drift car, Winters has been an integral part of drifting. We've worked with drivers and crews to develop components and evolve the sport, providing more diffs and equipping more championship teams than any other manufacturer in the world. Our Permanent Mold Independent Quick Changes are the next step in that evolution. They've been structurally reinforced to strengthen high-stress areas and ensure our quick changes continue landing in victory lane.

And they're **loaded with components you can only get from Winters,** including a Permanent Mold center section casting, NNS forged 2014-T6 side bells, ground 9310 ring & pinion, heavy-duty forged aluminum, steel-lined spool, and available 350M lower shaft. Track tested by the highest horsepower, most torque-heavy machines in professional drifting, these diffs will stand up to anything you can throw at them.

### ASSEMBLIES

ASSY #	DESCRIPTION
WP1958	Quick Change Assy w/31-Spline HD Alum Spool, 930-Style Output Flanges, Heat-Treated Lower Shaft, 1350-Series Yoke
WP1958PROAM	WP1958 QC Assy w/35-Spline Spool and Flanges
WP1958PRO	WP1958 QC Assy w/35-Spline Spool and Flanges, and Heavy-Duty 350M Lower Shaft
WPC1958	Inverted QC Assy for Corvette w/31-Spline HD Alum Spool, 930-Style Output Flanges, Heat-Treated Lower Shaft, 1350-Series Yoke
WPC1958PROAM	Inverted WP1958 QC Assy for Corvette w/35-Spline Spool and Flanges
WPC1958PRO	Inverted WP1958 QC Assy for Corvette w/35-Spline Spool and Flanges, and Heavy-Duty 350M Lower Shaft
FOR LIMITED SLIP DIFFERENTIAL ASSEMBLIES	Add "-LSD" to end of Assy P/N above (Ex. WP1958-LSD)

## **OPTIONS**

OPTION #	
SR9154-35	934-Style Output Flanges, 35-Spline
SR8208	Black Thermal Dispersant Coating
SR8218-BRG	REM Bearings

### **DIMENSIONAL DATA**





#### \*Denotes Variable P/Ns Depending on Diff Assembly Configuration (See Assemblies List at Left)

#	DESCRIPTION	P/N	QTY		-1	C.
1	Center Section, Permanent Mold, Alum	13251-INDY	1	# DESCRIPTION	P/N	QTY
2	Side Bell, NNS Forged, Alum, Right	13228-R	1	35 Gear Cover, Forged, Alum	12175B	1
3	Side Bell, NNS Forged, Alum, Left	13228-L	1	36 High Nut, 3/8-16, Alum	7794ASBK	6
4	Ring & Pinion, 4.12 Ratio, Ground 9310, 10-Spline	5714	1	37 Steel Ball, 5/16" Dia.	7398	6
5	3/8-24 x 1" HHCS, Drive Yoke	7109Y	1	38 3/8-16 x 1 <sup>3</sup> /4" Stud, Gear Cover	7802	6
6	Retaining Washer, Drive Yoke	5037	1	39* Output Flange, Porsche® 930-Style, 31-Spline	SR2944-31	2
7	Drive Yoke, Steel, 1350, 32-Spline	3566	1	39* Output Flange, Porsche® 930-Style, 35-Spline	SR2944-35	2
8	Spacer, Drive Yoke	6532-01	1	39* Output Flange, Porsche® 934-Style, 35-Spline	SR4874-01	2
9	3/8-16 x 11/4" HHCS, Seal Plate	7107	6	40 5/16-18 x 3/4" 12 Pt Bolt, Seal Plate	7195	16
10	3/8" SAE Flatwasher	7114	12	41 Seal Plate, Output Flange	2945	2
11	Seal Plate	5018-01M	1	42 O-Ring, Seal Plate	7413	2
12	O-Ring, Seal	7474	1	43 Seal, Seal Plate	7236V	2
13	Seal, Seal Plate	7204V	1	44 Bearing (Remove Shields)	7531	2
14	Retaining Ring, Seal Plate	7652	1	45 Snap Ring, Output Flange	7619	2
15	Ball Bearing, Lower Shaft, Front	7390	1	46 7/16-20 Flanged Locknut	7177	10
16	O-Ring, Seal Plate	7413	1	47 7/16" SAE Flatwasher	7178	22
17*	Lower Shaft, Heat-Treated Steel (Std), 32-Spline	5003-32	1	48 Bearing Cup, Side Bell	7357	2
17*	Lower Shaft, 350M, 32-Spline	5003V-32	1	49 Bearing Cone, Spool/Differential	7358	2
17*	Lower Shaft, Heat-Treated Steel, 10-Spline	5003	1	50 Shim Kit	6115	1
17*		5003-V	1	51 O-Ring, Side Bell	7403T	2
18	Retaining Ring, Lower Shaft	7610	1	52 -10 AN Plug, Short, Steel	8035-01	1
19	Ball Bearing, Lower Shaft, Rear, Shielded	7339	1	53 O-Ring, -10 AN Plug	8406	2
20	· · · · · · · · · · · · · · · · · · ·	12062	1	54 -6 AN Plug, Steel	7874S	5
21	O-Ring, Spacer, Lower Shaft	9405	1	55 O-Ring, -6 AN Plug	8405	5
22	Spacer, Lower Shaft	12885	1	56* Spool, Forged Alum, Steel Lined, 31-Spline	SR3353-31HD	1
23	<u>, , , , , , , , , , , , , , , , , , , </u>	7331	1	56* Spool, Forged Alum, Steel Lined, 35-Spline	SR3353-35HD	1
24		7308	2	56* Winters Track Limited Slip Differential, 31-Spline		1
_ 25		7528	1	56* Winters Track Limited Slip Differential, 35-Spline		1
26		7110	6	57 3/8" Flatwasher, ARP®	7815ARP	12
_ 27		5055	1	58 3/8-24 x 11/8" 12 Pt Bolt, ARP®	7852ARP	12
28		6485R	1	59 Thrust Block	5010	1
_ 29		7445	1	60 1/2-13 Adjusting Screw, Thrust Block	6149	1
30		6484	1	61 1/2" SAE Flatwasher	7167A	1
31	Quick Change Gear Set (Specify Ratio)	85XX	1	62 1/2-13 Jam Nut, Adjusting Screw	7137A	1
32		12417	2	63 Thru-Bolt, 7/16-20 x 51/2" HHCS	7176	10
33	Ball Bearing, Gear Cover	8659	2	64 7/16-14 x 1 <sup>1</sup> /4" HHCS	7117	2
34	O-Ring, Gear Cover	8447	1	65 -10AN Plug, Steel	8035	1

Part Numbers in this list may vary depending on options ordered at time of purchase. Please check the assembly tag included with your rear. See inside back cover of catalog or visit website for limited warranty and venue provision.

# QUICK CHANGE COMPONENTS

# FORGED OUTPUT FLANGES

All output flanges are precision machined from 4340 steel forgings. 930-style flanges are available in both 31-spline and heavy-duty 35-spline configurations, while the 934-style flanges come only in 35-spline.



P/N SR2944-35 35-Spline

930-Style Output Flange



P/N SR4874-35 35-Spline 934-Style Output Flange

# **STEEL-LINED SPOOLS & LIMITED SLIP DIFFERENTIALS**

Heavy-duty spools feature forged 7075 aluminum bodies with a 31 or 35-spline steel lining-an industry exclusive only available from Winters. CNC machined to exacting tolerances, the Winters Track LSD's race-proven parallel gear design automatically senses wheel spin and delivers positive traction.

P/N SR3353-31HD 31-Spline Heavy-Duty Steel-Lined Spool

P/N SR3353-35HD 35-Spline Heavy-Duty Steel-Lined Spool P/N SR2418-31 31-Spline Winters Track LSD

**P/N SR2418-35** 35-Spline Winters Track LSD

**HEAT TREATED STEEL & 350M LOWER SHAFTS** 

Diffs come standard with our 32-spline heat-treated steel lower shaft. For higher horsepower applications, we offer a cobalt-hardened 350M lower shaft—the strongest lower shaft on the market. *All use Retaining Ring P/N 7610* 

**P/N 5003-32** Heat-Treated Steel Lower Shaft, 32-spline For 10-Spline Heat-Treated Steel Lower Shaft use **P/N 5003** 

> P/N 5003V-32 350M Lower Shaft, 32-spline w/spacer For 10-Spline 350M Lower Shaft use P/N 5003-V

#### 717-764-9844

# **RING & PINION ASSEMBLY**

#### **10" STANDARD PINION BEARING, 12-BOLT**

Assembly includes Ground 9310 Ring & Pinion, Pinion Posi-Lock Nut, Roller Nose Bearing, ARP® Ring Gear Bolt Kit, and one-piece race.

**P/N 5714** 4.12 R&P w/o Bearings **P/N 5715** 4.12 R&P w/Bearings

### **OPTIONS**

OPTION #	MOST POPULAR OPTIONS
8218-RP	REM <sup>®</sup> Ring & Pinion
8218-BRG	REM <sup>®</sup> Bearing (# is per bearing)
8202-412	EDM Ring Gear (specify ratio)

**U-JOINTS & U-BOLTS** 

ARP® RING GEARBOLT KIT KIT P/N 9381 For 10" R&P

#### **U-BOLT KITS**

Kits Includes (2) U-Bolts, (4) Lock Washers, and (4) Hex Nuts

> TORQUE SPEC Torque nuts to 15 ft.-Ibs.



A	В	SERIES	JOURNAL DIAMETER	P/N
1.640″	2.000"	1350	1-3/16″	6999
1.406″	1.684″	1310	1-1/16''	5855*
1.406"	1.934″	1310	1-1/16"	5855L*

P/N 6996 • 1350-Series 1 3/16" Journal Assembly 3 5/8" across bearing caps

P/N 5382\* • 1310-series, caps with grease fittings  $1\,{}^{1}\!{}^{16''}$  Journal Assembly, 3  $^{7}\!{}^{32''}$  across bridge

P/N 6847\* • 1310-series, HD caps without grease fittings 11/16" Journal Assembly, 3 7/32" across bridge

\*1310-series components for use with V8-size diffs only. For full-size Champ diffs use 1350-series components

### BREATHER 9/16-18



Assembly	P/N	2966
Assembly	F/14	2900

#	DESCRIPTION	P/N
1	O-Ring	8405
2	#6-AN Fitting	8070
3	Tube Adapter	8074
4	Poly Tubing, 16" Length	8075

# GEAR OIL

#### HIGH PERFORMANCE SUPREME GEAR OIL P/N 1730

Using the correct gear oil is critical to the performance and longevity of your quick change rear end. Our High Performance Supreme Gear Oil is an 80W/90 semisynthetic with Moly that will keep your rear properly lubricated and running cool race after race.

For SDS, please call or visit our website.

See inside back cover of catalog or visit website for limited warranty and venue provision.

# COMPACT MINI INDEPENDENT QUICK CHANGE

Compact "V8" independent diffs are built with cast A356-T6 aluminum center section and side bells with integral caliper mounts and feature an 8-3/8" 3.78 ring & pinion, Winters Wedgelock LSD, forged 4340 output flanges, 1310-Series yoke, Timken® or NTN® bearings, and ARP® ring gear bolts.

Assembly SRP437-838 shown in natural As-Cast finish with billet aluminum gear cover Option SR8211-V8B

## ASSEMBLY P/N SRP437-838

The compact V8-size quick change was developed for applications where horsepower and torque is low and space within the confines of the chassis is limited. Depending on transmission, tire size, and other determining factors, the V8 quick change is typically rated up to approximately 600 horsepower. It's compact size makes it the perfect solution for those seeking the versatility of quick change gearing without needing the heavy-duty performance of our full-size diffs.

V8 independent diffs are equipped with our all gear-driven Winters Wedgelock limited slip differential, and are available with either 31-spline 930-style or 1310-series Corvette-style output flanges. Additional options are listed at right.

### **OPTIONS**

PART/OPTION #	
SR12626	930-Style Output Flange Adapter
3702	Steel 1310-Series Flange Yoke
3453-01	Aluminum 1310-Series Flange Yoke
4862	U-Bolt 1310-Series Flange Yoke
SR8275-1	1350-Series Yoke, 10-Spline

#### **DIMENSIONAL DATA**









Scan QR code or click Video #01 on wintersperformance.com to see a tour of our manufacturing plant in York, PA.

#### 717-764-9844



#### \*Denotes Option

#	DESCRIPTION	P/N	QTY
1	Center Section, Alum	2524HD	1
2	Side Bell, Alum	4658	2
3	Ring & Pinion, 3.78, 6-Spline	6811	1
4	3/8-24 x 1" HHCS, Drive Yoke	7109Y	1
		5037	1
 	Retaining Washer, Drive Yoke		1
6*	Drive Yoke, Steel, 1310, 10-Spline	5038	1
	Drive Yoke, Alum, 1310, 10-Spline	5038AS	1
	Seal, Seal Plate, Viton	7204V	1
	O-Ring, Seal	7474	-
9	3/8-16 x 11/4" HHCS, Seal Plate	7110	6
10	3/8" SAE Flatwasher	7114	6
11	Seal Plate, .750" Seal	6854-01M	1
12	O-Ring, Seal Plate	7413	1
13	Ball Bearing, Lower Shaft, Front	7390	1
14	Steel Spacer, Bearing	6680	1
15	Lower Shaft, Heat-Treated Steel, 10-Spline	6881-01	1
16	Retaining Ring, Lower Shaft	7658	1
	Retaining Ring, Lower Shaft Bearing	7655	1
18	Ball Bearing, Lower Shaft, Rear, Shielded	7534	1
19	Bearing Retainer	6751	1
20	Roller Bearing, Pinion Nose	7392	1
21	Bearing Cone, Pinion Shaft	7527	2
22	Flanged Bearing Cup, Pinion	7525	1
23	3/8-16 x 1" BHCS (Torx®),	9308	5
	Bearing Cup/Retainer Plate		
_24	Thrust Washer	6824	1
_ 25	Posi-Lock Nut, Pinion Shaft, 11/4-20-2B Thread	6821-02	1
26	O-Ring, Posi-Lock	7455	1
_ 27	Posi-Lock Retainer, Pinion Shaft	6822	1
28	Quick Change Gear Set (Specify Ratio)	45XX	1
29	Ball Bearing, Gear Cover	7532-01	2
30	Gasket, Gear Cover, HD	6703HD	1
31	Gear Cover, Alum	3056	1
32	High Nut, 3/8-16, Aluminum, Short, Black	7794ASBK	10
33	Steel Ball, 5/16" Dia.	7398	10
34	3/8-16 x 1 <sup>3</sup> /4" Stud, Gear Cover	7802	10
35	Adapter Ring, Porsche <sup>®</sup> 930-Style Output Flange	12626	2

#	DESCRIPTION	P/N	QTY
36	7/16-20 x 3" SHCS	9363	2
37	Belleville Washer	7921	2
38	Output Flange, Porsche® 930-Style, 31-Spline, Right	4610-01	1
38*	Output Flange, Corvette <sup>®</sup> -Style, 31-Spline, Right	4846-01	1
39	Retaining Ring	8390	2
40	Seal, Side Bell	8976V	2
41	O-Ring, Side Bell Seal	8419	2
42	3/8-16 X 11/4" BHCS (Torx®)	7953	20
43	3/8" SAE Flatwasher	7151	20
44	Bearing Cup, Side Bell	7302	2
45	Bearing Cone, Differential	7301	2
46	O-Ring, Side Bell	7451	2
47	-6 AN Plug, Steel	7874S	2
48	O-Ring, -6 AN Plug	8405	2
49	O-Ring, -12 AN Inspection Plug	7454	1
50	-12 AN Inspection Plug	6857-01	1
51	Output Flange, Porsche <sup>®</sup> 930-Style, 31-Spline, Left (Long)	4610-02	1
51*	Output Flange, Corvette <sup>®</sup> -Style, 31-Spline, Left (Long)	4846-02	1
52	Shim Kit	6709	1
53	Bushing, Differential	8834	2
54	Main Housing, Wedgelock Differential	3250	1
55	Side Gear, Right, 31-Spline	1693-01	1
56	Retaining Ring, Side Gear Insert	8336	2
57	Insert, Side Gear	4639	2
58	Side Gear, Left, 31-Spline	1693-02	1
59	Scalloped Spacer	1996	1
60	Cover, Wedgelock Differential	3251	1
61	3/8" Flatwasher, ARP®	7815ARP	10
62	3/8-24 x 11/8" 12 Pt Bolt, ARP®	7852ARP	10
63	1/4-28 x 11/4" 12pt Bolt	8045	5
64	Pinion Gear, Short	1692-01	5
65	Pinion Gear, Long	1692-02	5
66	-8 AN Plug with O-Ring	7875	2

Part Numbers in this list may vary depending on options ordered at time of purchase. Please check assembly tag included with quick change. \*\*Used only with P/N 5038AS

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# WINTERS MERCHANDISE





FOR THE WIN T-SHIRT P/N SR13



10-SPLINE GEAK CHAKI 18" x 24" • Heavy-Duty w/Grommets P/N POSTER10

36" x 24" • Full-Color Vinyl Banner w/Grommets

P/N BANNER1

# **IMPORTANT INFO**

### **BREAK-IN PROCEDURE**

As with any new or rebuilt product, be it an engine, transmission or rear end, it is important to avoid premature wear on the gears and bearings by avoiding full throttle loads and high RPM conditions for at least 20 miles. Start break-in at 30% power and gradually increase not to exceed 80% power.

Drain and refill the gear lube in both the rear end and the quick change gear cavity to the proper oil levels with the car sitting level (over filling will cause excessive heat).

### **QUICK CHANGE TORQUE SPECS**

For 10" quick change diffs

Pinion Retainer Bolts.....25 ft.-lbs. Left Bell Adjuster Screw: Yoke Bolt......40 ft.-lbs. red thread lock on jam nut Side Bell Thru-Bolts......35 ft.-lbs.

Ring Gear Bolts......60 ft.-lbs. Gear Cover High Nuts.....20 ft.-lbs.

### IMPORTANT QUICK CHANGE OILING INFO

Dil level RIGHT SIDE Make sure diff is level when checking oil

**GEAR OIL** 

PROPER OIL LEVEL IS CRITICAL! Always maintain oil level at 1-1/2" below axle center line as indicated (3 quarts/2.8 liters for 10" diffs).

Use Winters High Performance Supreme 80W-90 semi-synthetic hypoid lube with Moly P/N 1730 or Mobil-1® 70W-90 full-synthetic.



#### HIGH PERFORMANCE SUPREME GEAR OIL P/N 1730

Using the correct gear oil is critical to the performance and longevity of your guick change rear end. Our High Performance Supreme Gear Oil is an 80W/90 semi-synthetic with Moly that will keep your rear properly lubricated and running cool race after race. For SDS, please call or visit our website.

### **6-SPLINE (MINI DIFF) GEAR CHART** (10-SPLINE/FULL-SIZE DIFF GEAR CHART ON NEXT PAGE)

Numerical R	atio Listed				&P Ratio Teeth)	Numerical R					&P Ratio Teeth)
GEAR SET #	LOW SPUR RATIO	HIGH SPUR RATIO	# OF TEETH	LOW	нісн	GEAR SET #	LOW SPUR RATIO	HIGH SPU RATIO	<sup>R</sup> # OF TEETH	LOW	HIGH
01	1.000	1.000	24/24	3.78	3.78	12	0.655	1.526	19/29	2.48	5.77
02	0.958	1.043	23/24	3.62	3.94	13	0.652	1.533	15/23	2.47	5.80
03	0.920	1.087	23/25	3.48	4.11	14	0.636	1.571	14/22	2.41	5.94
03B	0.895	1.118	17/19	3.38	4.22	15	0.625	1.600	15/24	2.36	6.05
03A	0.880	1.136	22/25	3.33	4.30	16	0.615	1.625	16/26	2.33	6.14
04	0.846	1.182	22/26	3.20	4.47	17	0.600	1.667	18/30	2.27	6.30
05	0.808	1.238	21/26	3.05	4.68	18	0.591	1.692	13/22	2.23	6.40
05A	0.792	1.263	19/24	2.99	4.77	18A	0.571	1.750	16/28	2.16	6.62
06	0.778	1.286	21/27	2.94	4.86	19	0.560	1.786	14/25	2.12	6.75
24	0.767	1.304	23/30	2.90	4.93	20	0.556	1.800	15/27	2.10	6.80
25	0.750	1.333	18/24	2.84	5.04	27	0.542	1.846	13/24	2.05	6.98
07	0.741	1.350	20/27	2.80	5.10	21	0.531	1.882	17/32	2.01	7.12
23	0.727	1.375	16/22	2.75	5.20	28	0.528	1.895	19/36	2.00	7.16
08	0.714	1.400	20/28	2.70	5.29	29	0.522	1.917	12/23	1.97	7.25
22	0.704	1.421	19/27	2.66	5.37	26	0.517	1.933	15/29	1.96	7.31
09	0.696	1.438	16/23	2.63	5.43	30	0.500	2.000	20/40	1.89	7.56
10	0.682	1.467	15/22	2.58	5.54	31	0.488	2.050	20/41	1.84	7.75
11	0.667	1.500	18/27	2.52	5.67	32	0.475	2.105	19/40	1.80	7.95

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# **10-SPLINE QUICK CHANGE GEARS**

ΟΓΛ	N C			When ordering add "85" to gear set # (e						
n				4.12 R&P Ratio		4.57 R&P Ratio		4.86 R&P Ratio (7/34 Teeth)		
GEAR	LOW SPUP	HIGH SPUR	# OF	(8/33	Teeth)	(1/32	Teeth)	(//34	Ιθέτη)	
SET #	RATIO	RATIO	TEETH	LOW	HIGH	LOW	HIGH	LOW	HIGH	
01	1.000	1.000	21/21	4.12	4.12	4.57	4.57	4.86	4.86	
02	.964	1.037	27/28	3.97	4.27	4.41	4.74	4.69	5.04	
05	.960	1.042	24/25	3.96	4.29	4.39	4.76	4.67	5.06	
15A	.955	1.048	21/22	3.93	4.32	4.36	4.79	4.64	5.09	
15	.950	1.053	19/20	3.91	4.34	4.34	4.81	4.62	5.11	
26	.931	1.074	27/29	3.84	4.43	4.26	4.91	4.53	5.22	
06	.920	1.087	23/25	3.79	4.48	4.20	4.97	4.47	5.28	
25	.909	1.100	20/22	3.75	4.53	4.16	5.03	4.42	5.34	
12	.897	1.115	26/29	3.69	4.60	4.10	5.10	4.36	5.42	
07	.885	1.130	23/26	3.65	4.66	4.04	5.17	4.30	5.49	
07A	.875	1.143	21/24	3.61	4.71	4.00	5.22	4.25	5.55	
17	.867	1.154	26/30	3.57	4.75	3.96	5.27	4.21	5.60	
17A	.857	1.167	24/28	3.53	4.81	3.92	5.33	4.17	5.67	
08A	.852	1.174	23/27	3.51	4.84	3.89	5.37	4.14	5.70	
08	.846	1.182	22/26	3.49	4.87	3.87	5.40	4.11	5.74	
19	.840	1.190	21/25	3.46	4.91	3.84	5.44	4.08	5.78	
09A	.833	1.200	25/30	3.43	4.94	3.81	5.48	4.05	5.83	
09	.826	1.211	19/23	3.40	4.99	3.78	5.53	4.02	5.88	
11	.815	1.227	22/27	3.36	5.06	3.72	5.61	3.96	5.96	
03	.806	1.240	25/31	3.32	5.11	3.69	5.67	3.92	6.02	
13	.800	1.250	20/25	3.30	5.15	3.66	5.71	3.89	6.07	
18	.793	1.261	23/29	3.27	5.20	3.62	5.76	3.85	6.12	
18A	.786	1.273	22/28	3.24	5.24	3.59	5.82	3.82	6.18	
04A	.783	1.278	18/23	3.22	5.26	3.58	5.84	3.80	6.21	
20A	.778	1.286	21/27	3.20	5.30	3.55	5.88	3.78	6.25	
04	.774	1.292	24/31	3.19	5.32	3.54	5.90	3.76	6.27	
20	.769	1.300	20/26	3.17	5.36	3.52	5.94	3.74	6.31	
22	.760	1.316	19/25	3.13	5.42	3.47	6.01	3.69	6.39	
16	.750	1.333	18/24	3.09	5.49	3.43	6.09	3.65	6.48	
10	.739	1.353	17/23	3.05	5.57	3.38	6.18	3.59	6.57	
10A	.733	1.364	22/30	3.02	5.62	3.35	6.23	3.56	6.62	
34A	.727	1.375	16/22	3.00	5.67	3.32	6.28	3.54	6.68	
34	.724	1.381	21/29	2.97	5.69	3.31	6.31	3.52	6.71	
14	.719	1.391	23/32	2.96	5.73	3.29	6.36	3.49	6.76	
14A	.714	1.400	20/28	2.94	5.77	3.26	6.40	3.47	6.80	
35	.708	1.412	17/24	2.92	5.82	3.24	6.45	3.44	6.86	
32	.704	1.421	19/27	2.90	5.86	3.22	6.49	3.42	6.90	
32A	.697	1.435	23/33	2.87	5.91	3.19	6.56	3.39	6.97	
24	.690	1.450	20/29	2.84	5.97	3.15	6.63	3.35	7.04	





#### **GEAR CHART POSTERS**

This complete list of quick change gears is available in an 18" x 24" poster printed on grease-resistant, heavy-duty paper with grommets for easy hanging in your shop or rig P/N POSTER10 (see page 10)

ST	STANDARD QUICK CHANGE GEARS (continued) When ordering add "85" to gear set #			4.12 R&P Ratio (8/33 Teeth)		4.57 R&P Ratio (7/32 Teeth)		4.86 R&P Ratio (7/34 Teeth)		
	GEAR SET #	LOW SPUR RATIO	HIGH SPUR RATIO	# OF TEETH	LOW	HIGH	LOW	HIGH	LOW	HIGH
•	36	.680	1.471	17/25	2.80	6.06	3.11	6.72	3.31	7.14
	37	.677	1.476	21/31	2.79	6.08	3.10	6.75	3.29	7.17
	23	.667	1.500	22/33	2.75	6.18	3.05	6.86	3.24	7.29
	21	.655	1.526	19/29	2.70	6.29	2.99	6.98	3.18	7.41
	21A	.652	1.533	15/23	2.69	6.32	2.98	7.01	3.17	7.45
	27	.647	1.545	22/34	2.67	6.37	2.96	7.06	3.15	7.51
	43	.640	1.563	16/25	2.64	6.44	2.93	7.14	3.11	7.59
	28	.633	1.579	19/30	2.61	6.51	2.89	7.22	3.08	7.67
	28A	.630	1.588	17/27	2.59	6.54	2.88	7.26	3.06	7.71
	29	.625	1.600	15/24	2.58	6.59	2.86	7.31	3.04	7.77
	39	.621	1.611	18/29	2.56	6.64	2.84	7.36	3.02	7.83
	30	.615	1.625	16/26	2.54	6.70	2.81	7.43	2.99	7.89
	40	.613	1.632	19/31	2.53	6.72	2.80	7.46	2.98	7.93
	41	.607	1.647	17/28	2.50	6.81	2.76	7.53	2.95	8.00
	31	.600	1.667	21/35	2.47	6.87	2.74	7.62	2.92	8.10
	33A	.593	1.688	16/27	2.44	6.95	2.71	7.71	2.88	8.20
	33	.588	1.700	20/34	2.42	7.00	2.69	7.77	2.86	8.26
	31A	.583	1.714	21/36	2.40	7.06	2.67	7.83	2.84	8.33
	30A	.577	1.733	15/26	2.38	7.14	2.64	7.92	2.80	8.42
ER	50	.571	1.750	20/35	2.35	7.21	2.61	8.00	2.78	8.50
MO	51	.567	1.765	17/30	2.34	7.27	2.59	8.07	2.75	8.57
TED HORSEPOWER PLICATIONS	52	.563	1.778	18/32	2.32	7.32	2.57	8.12	2.73	8.64
0R TIO	53	.559	1.789	19/34	2.30	7.37	2.55	8.18	2.72	8.69
D H ICA	54	.556	1.800	15/27	2.29	7.42	2.54	8.23	2.70	8.74
LIMITED H	55	.552	1.813	16/29	2.27	7.47	2.52	8.28	2.68	8.80
AF	56	.548	1.824	17/31	2.26	7.51	2.51	8.33	2.67	8.86
FOR L	57	.533	1.875	16/30	2.20	7.73	2.44	8.57	2.59	9.11
F	58	.531	1.882	17/32	2.19	7.76	2.43	8.60	2.58	9.14





# **RPM** (BASED ON RATIO)

Ratio X MPH Tire Diameter X 336

#### **RATIO** (BASED ON RPM) **RPM × Tire Diameter** MPH × 336

**GEARING FORMULAS GEAR-BASED RPM CHANGE** 

> Current Ratio X New Ratio = New RPM RPM

#### **FINAL DRIVE RATIO**

Top Gear # of Teeth Bottom Gear # of Teeth x R&P Ratio

See inside back cover of catalog or visit website for limited warranty and venue provision.

LOW

short gear

on top

# **ORDERS & RETURNS**

- **ORDER POLICY**
- Please provide your customer number. If you are a new customer, one will be provided.
- Order by part number. Winters will not be responsible for incorrect orders placed by description only.
- Specify shipping instructions otherwise use our discretion.
- Refused orders will have a \$25.00 handling charge and applicable freight charges billed to the customer's account.
- Special orders cannot be canceled after the order is in process.
- PLEASE NOTE: Part numbers are listed showing required quantity. If two or more quantities are listed, you must order two or more of that part number.

**RETURN POLICY** All returns must include a Return Authorization Number (RA#). Issuing of an RA# does not constitute a guarantee of credit or replacement. Credit, refund or replacement will only be issued after an inspection and determination at our discretion. No returns are accepted on special order merchandise, obsolete products, damaged, used or altered merchandise. Returns will not be accepted after six (6) months from date of purchase.

ALL RETURNED MERCHANDISE MUST INCLUDE:

- □ RA# clearly written on outside of box/boxes
- □ Customer number, name & phone number
- □ Copy of invoice
- Written explanation of reason for return
- □ Specify Credit, Refund or Replacement
- 90 days from date of purchase, and a 25% restocking fee from 91 days to 6 months.

• Except for seller's error, returned merchandise is subject to a 15% restocking fee up to

- Returns must be freight pre-paid (except seller's error).
- Returned parts must be packaged properly to avoid damage in transit.
- SHIPPING DAMAGES MUST BE REPORTED IMMEDIATELY TO YOUR CARRIER.
- SHORTAGE CLAIMS MUST BE REPORTED IMMEDIATELY.
- SAVE YOUR PACKAGING.

# **LIMITED WARRANTY**

**BACKGROUND** Winters Performance Products, Inc., referred to herein as Winters, manufactures parts and equipment which are purchased by persons in various industries, who may install and use Winters parts and equipment in applications which may not be suitable for that Purchaser's intended purpose. Purchaser understands, recognizes and acknowledges that all parts and equipment manufactured or sold by Winters are exposed to many, varied and unforeseeable uses and conditions. As a consequence, Winters can make no promise, warranty, affirmation or representation as to the performance of its parts or equipment, nor does Winters make any description of the parts or equipment sold to Purchaser, nor does Winters make any description or affirmation of fact concerning any sample or model of parts or equipment except as specifically set forth in this Limited Warranty. As further consideration for Purchaser using Winters' parts or equipment, Purchaser acknowledges that, due to differing conditions and circumstances under which all parts and equipment are installed and used, Purchaser is not relying on Winters' skill and judgement to select or furnish the proper part or equipment. Purchaser expressly affirms that it is relying on its own expertise, skill, and judgement to select, purchase and install parts or equipment which are suitably safe and durable for their intended purpose. Purchaser assumes all risks associated with the performance of Winters' parts.

LIMITED WARRANTY Winters warrants to Purchaser that any part or equipment manufactured by Winters ("a Part") will conform to the description of such Part contained in the catalog most recently published by Winters prior to the time of sale of such part or equipment to Purchaser ("the Description").WINTERS MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED WITH RESPECT TO ANY PART. WINTERS EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE AND EXPRESSLY DISCLAIMS ANY WARRANTY AS TO THE PERFORMANCE OF ANY PART. The liability of Winters for breach of the foregoing warranty is limited to repair or replacement of any Part determined to fail to conform to its Description prior to installation and use. The burden of establishing that any Part fails to conform to its Description shall be upon Purchaser. In order to be entitled to repair or replacement of any Part, Purchaser must (i) inspect the part upon receipt; and (ii) notify Winters in writing of the defect PRIOR TO INSTALLATION OF THE PART. In no event shall Winters be liable hereunder for any Part which has been installed. Purchaser assumes all risks relating to a Part once such Part is installed. WINTERS SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES (INCLUDING BUT NOT LIMITED TO LOST PROFITS) OR FOR LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF A PART. Every claim under this Limited Warranty shall be deemed waived unless made in writing within ninety (90) days of delivery of the Part by Winters to Purchaser. Purchaser acknowledges that, due to the multiple uses of Parts, it is impossible for Winters to predict the performance of any Parts once installed or the suitability of any Parts for any particular use. Purchaser expressly acknowledges its obligation to inform all users (customers) of the above disclaimer.

## INDEMNITY AGAINST THIRD PARTY CLAIMS PURCHASER HEREBY AGREES TO INDEMNIFY AND HOLD HARMLESS

WINTERS FROM AND AGAINST ANY AND ALL CLAIMS, LIABILITY, LOSS AND DAMAGES, INCLUDING ATTORNEYS FEES, MADE BY ANY THIRD PARTY AGAINST WINTERS RELATING TO A PART OR THE USE OF ANY PART. Purchaser understands and agrees that no officer, director, employee or agent of Winters (including but not limited to any vendor, dealer or distributor) has any authority to make any statements contrary to the terms of this Limited Warranty. Winters specifically disavows any statements contrary to what is written above.

CHOICE OF LAW/VENUE This Limited Warranty shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. Any legal action which may arise as a result of disputes, controversies, or claims arising out of or related to this Limited Warranty or the purchase or use of any Part shall be litigated exclusively in the Court of Common Pleas of York County, Pennsylvania or the United States District Court for the Middle District of Pennsylvania.

MISCELLANEOUS This writing constitutes the full, complete and final statement of Winters' Limited Warranty for Parts. All prior oral and written correspondence, test data, negotiations, representations, understandings and the like regarding Parts are merged in this writing and extinguished by it. This Limited Warranty may not be altered, amended, extended or modified except by a writing signed by the President or Vice President of Winters. Winters' failure at any time to enforce any of the terms and conditions stated herein shall not constitute a waiver of any of the provisions herein. This Limited Warranty shall not be assigned by Purchaser. Winters' responsibility for merchandise shipped via common carrier ceases upon delivering the order to the carrier. Winters is not responsible for merchandise lost or damaged in transit. Purchaser must file a claim with the delivery carrier for merchandise lost or damaged during transit. Winters will assist Purchaser by supplying any information necessary for submission of a claim. It is the responsibility of the Purchaser to comply with all laws and regulations, Federal, State and Local, governing resale of products sold by Winters. NSF Charge: \$38.00 per returned check/payment. Repayments must be made by cashier check or money order.

On request, all parts in Winters Performance Products, Inc. inventory and/or catalog are available in super strength heat treated steel (300,000/350,000 P.S.I. tensile strength) at extra cost and special order. Refer to machinery handbook for strengths of other materials.

RACING IS A DANGEROUS SPORT THAT CAN RESULT IN SERIOUS INJURY OR DEATH. THE ULTIMATE RESPONSIBILITY FOR PARTICIPANT AND VEHICLE SAFETY LIES WITH THE PARTICIPANT.

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