WINTERS

DIRT MOD RACING

5 ON 5" & 5 ON 4 3/4"

DIRT MODIFIED QUICK CHANGE ASSEMBLIES

QUICK CHANGE ASSEMBLIES

Before purchasing your new rear end, Winters encourages you to compare quality, innovation and design of ALL Quick Change Rears available. YOU BE THE JUDGE!

MODIFIED ASSEMBLY

TO COMPLETE YOUR ASSEMBLY ADD:
(1) 8270: 5 x 5" Hubs, Rotors & Solid Axles
(1) 8270-4750: 5 x 4 3/4" Hubs, Rotors & Solid Axles
(1) 8270-2875: 2 7/8" Hubs, Rotors & Solid Axles
(2) 9120: Platinum Series Upgrade
(1) 8228: Gundrilled Axle Upgrade

Complete Assembly Weighs 110 lbs. 6.4 oz.

10", 10 BOLT ALUMINUM ASSEMBLY
5063-MOD

10", 10 BOLT MAGNESIUM ASSEMBLY
K5063-MOD

Assembly includes 4.86 Ring & Pinion, standard, 8104 Aluminum Pinion Posi-Lock Assembly, 8115 31 Spline Aluminum Spool, 8133 Sprint Center, 10 Bolt, 8143 Pinion Nose Roller Bearing and 8186P 6 Rib Bell with Inspection Plug. **Specify tread width and offset when ordering.**

PRO-MOD ASSEMBLY

Assembly Shown with Option 8155PMHD Heavy Duty Permanent Mold 8 Rib Side Bells

Complete Assembly Weighs 97 lbs. 3.2 oz.

TO COMPLETE YOUR ASSEMBLY ADD:
(1) 8270: 5 x 5" Hubs, Rotors & Solid Axles
(1) 8270-4750: 5 x 4 3/4" Hubs, Rotors & Solid Axles
(1) 8270-2875: 2 7/8" Hubs, Rotors & Solid Axles
(2) 9120: Platinum Series Upgrade
(1) 8228: Gundrilled Axle Upgrade

10", 6 BOLT ALUMINUM ASSEMBLY
5063-PROMOD

10", 6 BOLT MAGNESIUM ASSEMBLY
K5063-PROMOD

Assembly includes 4.86 Ring & Pinion, standard, 8104 Aluminum Pinion Posi-Lock Assembly, 8130 Ultralight 31 Spline Aluminum Spool, 8133-10-6 Sprint Center, 6 Bolt, 8143 Pinion Nose Roller Bearing, 8186P 6 Rib Bell with Inspection Plug, 8199 Seal Plate, Low Drag Viton, 8208 Thermal Dispersant Coating, 8218-BRG Low Drag REM® Bearings, 8218-RP Low Drag REM® Ring & Pinion, and 8298 Low Drag Viton Seals. **Specify tread width and offset when ordering. Add Option 9145 for Bare, No Logo O'Ringed Billet Gear Cover.**

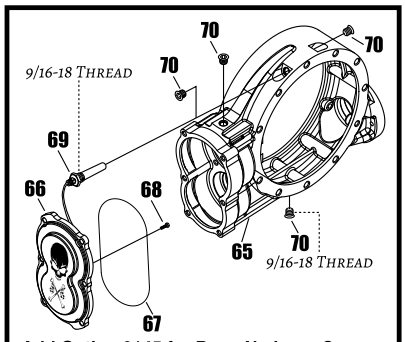
ADDITIONAL WEIGHT SAVING OPTIONS

Compared to Standard 4.86 Rear

OPTION	DESCRIPTION	SAVINGS	OPTION	DESCRIPTION	SAVINGS
8111	4.12 Ring & Pinion	0.65 lbs.	8263-55	2 7/8" Tubes/Hubs, 5 on 5"	5.00 lbs./Rear
8130	Ultralight Aluminum Spool	0.65 lbs.	8265	0.156" Wall Tubing	4.00 lbs./Rear
8182B	Aluminum Yoke w/ Stainless Steel Sleeve	1.45 lbs.	8299	Gundrilled Pinion Shaft	0.45 lbs.
8184	Gundrilled Lower Shaft	1.30 lbs.	9143	Scalloped 5 on 5" Drive Flange	1.00 lbs.

10" STANDARD PINION BEARING, 12 BOLT

5400 4.86 Ring & Pinion w/o Bearings
5401 4.86 Ring & Pinion w/ Bearings
5714 4.12 Ring & Pinion w/o Bearings
5715 4.12 Ring & Pinion w/ Bearings
OPTION 8104 Pinion Posi-Lock Nut
OPTION 8143 Roller Nose Bearing

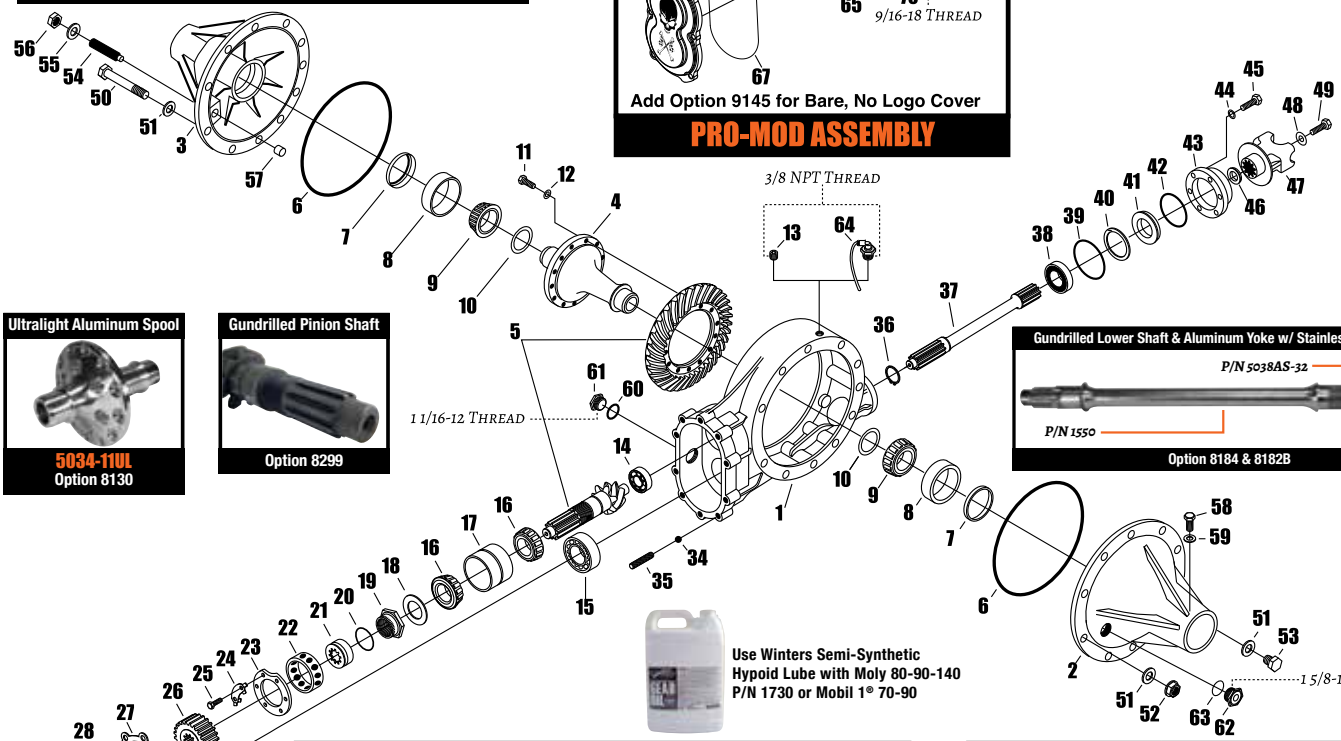


Add Option 9145 for Bare, No Logo Cover

PRO-MOD ASSEMBLY

DOUBLE SPLINED AXLES

Specify length when ordering.
5067 Solid, 31/24 Spline
5067G Gundrilled, 31/24 Spline



Ultralight Aluminum Spool

5034-11UL
Option 8130

Gundrilled Pinion Shaft

Option 8299

Gundrilled Lower Shaft & Aluminum Yoke w/ Stainless Steel Sleeve

Option 8184 & 8182B

Use Winters Semi-Synthetic Hypoid Lube with Moly 80-90-140 P/N 1730 or Mobil 1® 70-90

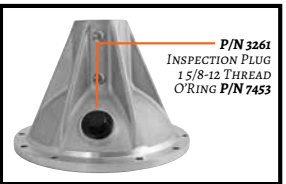
OPTION 8155PMHD
P/N 8035
Level Plug
7/8-14 Thread
O'Ring P/N 8406

12080M
Heavy Duty Permanent Mold 8 Rib
Left Side Bell

OPTION 8155PMHD
P/N 3643
Inspection Plug
1 1/16-12 Thread
O'Ring P/N 7454
P/N 7874A Aluminum
P/N 7874S Steel
Level Plug
9/16-18 Thread
O'Ring P/N 8405

12083M
Heavy Duty Permanent Mold 8 Rib
Right Side Bell

1663-02
6 Rib Left Side Bell
OPTION 8186P



1663-01B
6 Rib Right Side Bell
OPTION 8186P

#	DESCRIPTION	P/N	QTY
1*	Aluminum "Sprint" Center Section	5840	1
2*	Aluminum 6 Rib Right Side Bell	1663-01B	1
3*	Aluminum 6 Rib Left Side Bell	1663-02	1
4*	31 Spline Aluminum Spool	5034-11A	1
5*	4.86 Ratio Ring & Pinion, Standard	5400	1
6*	O'Ring, 8 Rib Bell	7403	2
6*	O'Ring, 4 & 6 Rib Bell	7403T	2
7*	Seal, Side Bell	7205	2
7*	Seal, Side Bell, Viton	7283V	2
8*	Bearing Cup, Side Bell	7310	2
9*	Bearing Cone, Steel Spools & Differentials	7309	2
9*	Bearing Cone, Aluminum Spools & Differentials	7340	2
10*	Shim Kit, Steel Spools & Differentials	5097	1
10*	Shim Kit, Aluminum Spools & Differentials	5295	1
11	Ring Gear Bolt, Threaded Ring Gear	7852	12
12	3/8" Belleville Washer, Threaded Ring Gear	7815	12
13	3/8" Recessed Socket Head Pipe Plug	7111B	2
14	Roller Bearing, Pinion Nose	7331	1
15	Shielded Ball Bearing, Lower Shaft	7339	1
16*	Bearing Cone, Pinion Shaft	7308	2
17*	Double Bearing Cup, Pinion Shaft	7307	1
18	Bearing Washer	5055	1
19	Posi-Lock Nut, Pinion Shaft	6485R	1
20	O'Ring, Posi-Lock	7445	1
21	Posi-Lock Retainer, Pinion Shaft	6484	1
22	Retaining Ring, Pinion	5020	1
23	Retaining Plate, Pinion	6296A	1
24	Lock Tab	2374	3
25	3/8-16 x 1" HHCS, Retaining Plate	7110	6

#	DESCRIPTION	P/N	QTY
26	Quick Change Gear Set (Not Included)	8500	1
27*	Gasket, Gear Cover	6729	1
28*	Gear Cover, Less Bearings	6655	1
29*	Ball Bearing, Gear Cover	7524	2
30*	O'Ring, Bearing Cap	7476	2
31*	Bearing Cap	1667	2
32*	1/4-20 x 1" SHCS	7842	6
33	3/8-16 Aluminum High Nut	7794A	10
34	5/16" Diameter Ball, Gear Cover	7398	10
35*	3/8-16 x 1 3/4" Stud, Gear Cover	7802	10
36	Retaining Ring, Lower Shaft	7610	1
37*	Standard Lower Shaft	5003-02	1
37*	Option, Gundrilled, Open Drive Lower Shaft	1550	1
38	Front Ball Bearing, Lower Shaft	7390	1
39	O'Ring, Seal Plate	7413	1
40*	Retaining Ring, Seal Plate, .750" Seal	7652	1
41*	Seal, Seal Plate, .750" Thick Seal	7204T	1
41*	Seal, Seal Plate, .750" Viton Seal	7204V	1
42	O'Ring, Seal	7474	1
43	Seal Plate, .750" Seal	5018-01M	1
44	3/8" SAE Flatwasher	7114	6
45*	3/8-16 x 1" HHCS, Seal Plate	7110	6
45*	3/8-16 x 1 1/4" HHCS, Seal Plate	7107	6
46*	Spacer, Drive Yoke (Not Used w/ 3533)	6532	1
47*	Drive Yoke, Steel, 1310 Series	5038	1
47*	Drive Yoke, Steel, Threaded, 1310 Series	5038B	1
47*	Drive Yoke, Billet Aluminum, 1310 Series	5038AS	1
47*	Drive Yoke, Billet Aluminum, 32 Spline	5038AS-32	1
47*	Drive Yoke, Steel w/ Integral Spacer	3533	1

#	DESCRIPTION	P/N	QTY
48	Retaining Washer, Drive Yoke	5037	1
49	3/8-24 x 1" HHCS, Drive Yoke	7109Y	1
50*	7/16-20 x 5 1/2" Thrubolt	7176	10
51	7/16" SAE Flatwasher, Thrubolt	7178	22
52	7/16-20 Flanged Locknut, Thrubolt	7177	10
53	7/16-14 x 1 1/4" HHCS	7117	2
54*	1/2-13 Adjusting Screw, 8 Rib Side Bell	7155	1
54*	1/2-13 Adjusting Screw, 4 & 6 Rib Side Bell	6149	1
55	1/2" SAE Flatwasher, Adjusting Screw	7167	1
56	1/2-13 Jam Nut, Adjusting Screw	7137	1
57	Thrustblock, Adjusting Screw	5010	1
58*	3/8-24 x 1" HHCS, 4 Rib Side Bell	7109	16
58*	3/8-24 x 3/4" HHCS, 6 & 8 Rib Side Bell	7109S	12
59	3/8" SAE Flatwasher	7114	16
60	O'Ring, Inspection Plug	7454	1
61	Inspection Plug	6857	1
62	Inspection Plug, Side Bell	3261	1
63	O'Ring, Inspection Plug, Side Bell	7453	1
64	Top Mount Breather	2966T	1
	PRO-MOD ASSEMBLY		
65	Magnesium Center Section	K12088	1
66	Billet Aluminum 6 Bolt Gear Cover	12175	1
67*	O'Ring, Billet Aluminum 6 Bolt Gear Cover	8447	1
67*	Gasket, Billet Aluminum 6 Bolt Gear Cover	12185	1
68	#10-24 x 1/2" FHCS Bearing Retainer	12417	2
69	Breather Assembly (Sold Separately)	2966-02	1
70	Aluminum Level Plug w/ O'Ring	7874A	4
70	Steel Level Plug w/ O'Ring	7874S	4

*** Part Numbers in this list may vary depending on Options ordered at time of purchase. Please check the assembly tag included with your rear.**

TUBES & HUBS

5 ON 5” & 5 ON 4 3/4” HUB ASSEMBLIES

The superior quality of Winter’s 5 on 5” and 5 on 4 3/4” Platinum Series Hub Assemblies are UNMATCHED!

5 ON 5” COARSE THREAD
2255C

5 ON 4 3/4” COARSE THREAD
2566C

PLATINUM HUB OPTION
9120

OPTION 9143
Scalloped 5 on 5” Drive Flange
1 lb Weight Savings!

LOW DRAG!
Purchase Separately
P/N 7301 ACS

OPTION 8254S-25
Super Free Angular Contact Bearings with Steel Balls

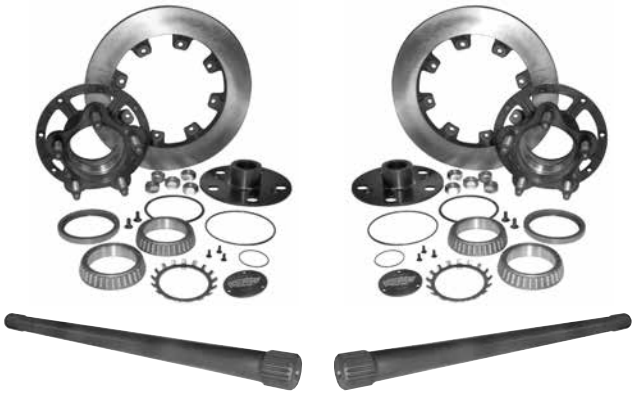
OPTION 9122
Low Friction Seal (Part No. 7201LF)

HEAVY WALL TUBE

OPTION 9151-200 2” Tube I.D. (*Adds Approx. 10 lbs. per Side)
OPTION 9151-175 1 3/4” Tube I.D. (*Adds Approx. 13 lbs. per Side)
OPTION 9151-150 1 1/2” Tube I.D. (*Adds Approx. 16 lbs. per Side)
* Based off 24” end to end axle tube. Weights will vary depending on length of tube & application.

2 1/2” 5 ON 5 STEEL SIDE TUBE

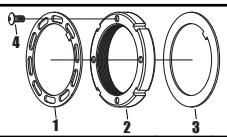
TUBE & SPINDLE ASSEMBLY
5052R



HUBS, ROTORS & AXLES OPTIONS

Add one of the options listed below to your rear end assembly and receive (2) 5 on 5 Hub Kits P/N 2255C, (2) Rotors P/N 2394GM* & (2) Axles P/N 5067 (Specify Length).

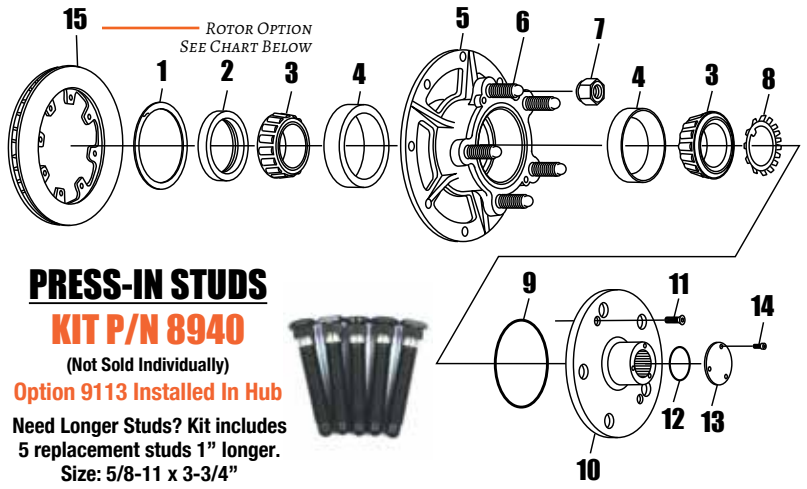
OPTION 8270 5 on 5” Hub **OPTION 8270-4750** 5 on 4 3/4” Hub
OPTION 8228 Gundrilled Axles
* See below for available rotors.



2 1/2” GN LOCKNUT KIT
P/N 12236

#	DESCRIPTION	P/N	QTY	#	DESCRIPTION	P/N	QTY
1	Lockwasher	12210	1	3	Tab Washer	12209	1
2	2 1/2” GN Steel Locknut	12208	1	4	10-32 x 1/2” BHCS	8392	2

2 1/2” GN SPINDLE NUT WRENCH SOCKET
P/N 5319



PRESS-IN STUDS
KIT P/N 8940
(Not Sold Individually)
Option 9113 Installed In Hub
Need Longer Studs? Kit includes 5 replacement studs 1” longer.
Size: 5/8-11 x 3-3/4”

#	DESCRIPTION	P/N	QTY
1	Retaining Ring	7644	1
2	Seal	7201	1
3	Bearing Cone	7301	2
4	Bearing Cup	7302	2
5	Hub, 5 on 4 3/4”	1750-475	1
5	Hub, 5 on 5”	1750	1
6	5/8-11 x 3” Stud, Coarse	1701-01	5
6	5 on 4 3/4” Stud, Coarse	2884C	5
7	5/8-11 Lug Nut	5712	5
8	Bearing Lockwasher	7118	1

#	DESCRIPTION	P/N	QTY
9	O’Ring, Hub, 5 on 5”	7478	1
9	O’Ring, Hub, 5 on 4 3/4”	7494	1
10	Flange, 5 on 5”	1680	1
10	Flange, 5 on 4 3/4”	1680-475	1
11	5/16-18 x 5/8” FHCS	7913	2
12	O’Ring, Dust Cap	7479	1
13	Red Dust Cap	1726	1
14	10-24 x 3/8” SHCS	7938	3
15	Rotor Option	See Chart Below	

ROTOR OPTIONS (Additional Charge)
Rotor Options applicable with hub assembly purchase only.

OPTION	DIMENSION	ROTOR P/N
8240	0.810” x 12 1/8”	2394
8241	0.810” x 11 3/4”	2394GM
8243	1 1/4” x 11 3/4”	6608GM

OPTION	DIMENSION	ROTOR P/N
*8243L	1 1/4” x 11 3/4”	6608GML
*8241L	0.810” x 11 3/4”	2394GML

* Drilled Rotor

TUBES & HUBS

PRO ELIMINATOR 2 7/8" HUB ASSEMBLY

This super trick hub assembly comes standard with free spinning 2 7/8" Roller Bearings. The Inverted Drive Flange uses lighter, shorter axles. This 2 7/8" Tube/Hub Assembly saves an additional 5 lbs. of rotating and unsprung weight per rear end assembly! ONLY FROM WINTERS!

OPTION 9143-2875
Scalloped 5 on 5" Drive Flange
1 lb Weight Savings!

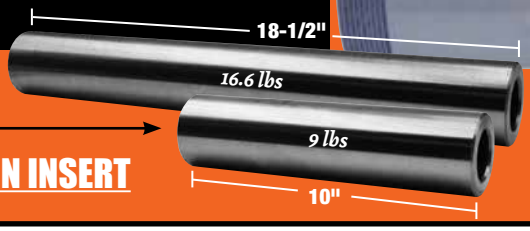
COARSE THREAD
3935C
FINE THREAD
3935F

LOW DRAG!
Purchase Separately P/N 8658 ACS
OPTION 8254S-287
Super Free Angular Contact Bearings with Steel Balls

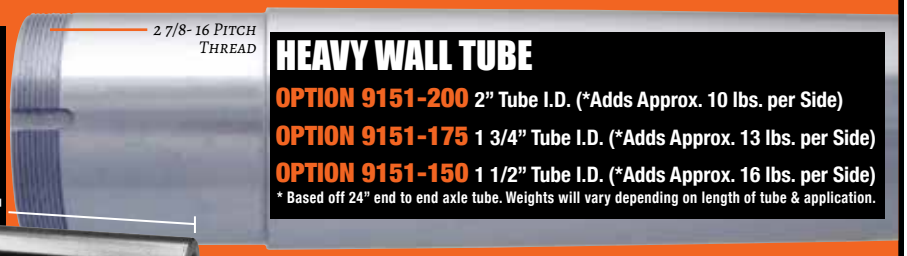
SCREW-IN STUDS
KIT P/N 8941
(Not Sold Individually)
Option 9114 Installed In Hub

2 7/8" 5 ON 5 STEEL SIDE TUBE

TUBE & SPINDLE ASSEMBLY
3916

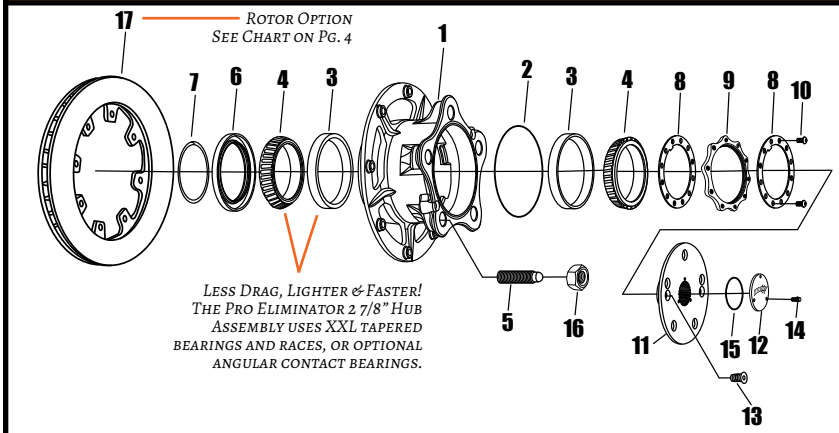


P/N 12767-18-1/2
P/N 12767-10
HEAVY WALL SLIDE IN INSERT



HEAVY WALL TUBE

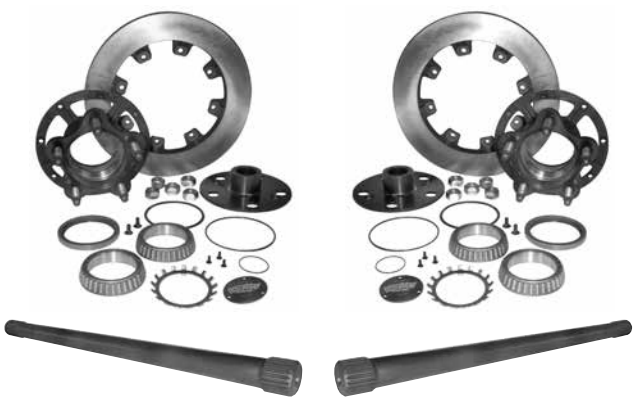
OPTION 9151-200 2" Tube I.D. (*Adds Approx. 10 lbs. per Side)
OPTION 9151-175 1 3/4" Tube I.D. (*Adds Approx. 13 lbs. per Side)
OPTION 9151-150 1 1/2" Tube I.D. (*Adds Approx. 16 lbs. per Side)
* Based off 24" end to end axle tube. Weights will vary depending on length of tube & application.



Less Drag, Lighter & Faster! The Pro Eliminator 2 7/8" Hub Assembly uses XXL tapered bearings and races, or optional angular contact bearings.

#	DESCRIPTION	P/N	QTY
1	Rear Hub	3601	1
2	O'Ring	8423	1
3	Bearing Cup	8682-2	2
4	Bearing Cone	8682-1	2
5	5/8-11 Stud, Coarse	2884C	5
5	5/8-11 Stud, Fine	2884F	5
6	Oil Seal	7284V	1
7	Retaining Ring	8349	1
8	Washer	3273	2

#	DESCRIPTION	P/N	QTY
9	Spindle Nut	3271	1
10	10-24 x 3/8" BHCS	8740	2
11	Drive Flange	3602	1
12	Red Dust Cap	1726	1
13	5/16-18 x 5/8" FHCS	7913	2
14	10-24 x 3/8" SHCS	7938	3
15	O'Ring	7479	1
16	5/8-11 x 1" Lug Nut	5712	5
17	Rotor Option	See Chart Pg. 4	



HUBS, ROTORS & AXLES OPTIONS

Add the option listed below to your rear end assembly and receive (2) 5 on 5 Hub Kits P/N 3935C, (2) Rotors P/N 2394GM* & (2) Axles P/N 5067 (Specify Length).

OPTION 8270-2875 2 7/8" Hub
OPTION 8228 Gundrilled Axles

* See page 4 for available rotors.

Inside View Shown

INVERTED DRIVE FLANGE
P/N 3602

Stronger, Lighter, Better Balance! The Pro Eliminator Inverted Drive Flange uses shorter axles and fits 2 7/8" hubs.

DUST CAP REPLACEMENT KIT
P/N 4310

SPINDLE LOCK KIT
P/N 4301 ALUMINUM
P/N 4301S STEEL

SPINDLE NUT WRENCH PLATE
P/N 3269

10 SPLINE QUICK CHANGE GEARS

With two minute gear changes and over 65 Ratios to choose from, IT'S ABOUT TIME!

8500 SERIES

Machined from 8620 Steel. When ordering add Prefix 85 to Set #.
Example: Gear Set # 01 = 8501

GEARING FORMULAS

$$\frac{\text{Ratio x MPH}}{\text{Tire Dia.}} \times 336 = \text{RPM} \quad \text{or} \quad \text{Ratio} = \frac{\text{RPM x Tire Dia.}}{\text{MPH x 336}}$$

TO DETERMINE GEAR RPM CHANGE
(RPM) ÷ (Gear Ratio) x (New Ratio) = (New RPM)
Example: 8000 ÷ 4.60 x 5.22 = 9078

TO DETERMINE FINAL DRIVE
(# Teeth Top Gear) ÷ (# Teeth Bottom Gear) x (R&P Ratio) = (Final Drive)

IMPORTANT-CHECK IT OUT
The Ring & Pinion you select in your Quick Change will determine your final gear selection. The more Quick Change Gear Ratio selections, the more you can fine tune your car.

Numerical Ratio Listed

GEAR SET #	LOW SPUR RATIO	HIGH SPUR RATIO	# OF TEETH	4.12 R&P Ratio (8-33 Teeth) LOW	4.12 R&P Ratio (8-33 Teeth) HIGH	4.57 R&P Ratio (7-32 Teeth) LOW	4.57 R&P Ratio (7-32 Teeth) HIGH	4.86 R&P Ratio (7-34 Teeth) LOW	4.86 R&P Ratio (7-34 Teeth) HIGH
01	1.000	1.000	21/21	4.12	4.12	4.57	4.57	4.86	4.86
02	0.964	1.037	27/28	3.97	4.27	4.41	4.74	4.69	5.04
05	0.960	1.042	24/25	3.96	4.29	4.39	4.76	4.67	5.06
15A	0.955	1.048	21/22	3.93	4.32	4.36	4.79	4.64	5.09
15	0.950	1.053	19/20	3.91	4.34	4.34	4.81	4.62	5.11
26	0.931	1.074	27/29	3.84	4.43	4.26	4.91	4.53	5.22
06	0.920	1.087	23/25	3.79	4.48	4.20	4.97	4.47	5.28
25	0.909	1.100	20/22	3.75	4.53	4.16	5.03	4.42	5.34
12	0.897	1.115	26/29	3.69	4.60	4.10	5.10	4.36	5.42
07	0.885	1.130	23/26	3.65	4.66	4.04	5.17	4.30	5.49
07A	0.875	1.143	21/24	3.61	4.71	4.00	5.22	4.25	5.55
17	0.867	1.154	26/30	3.57	4.75	3.96	5.27	4.21	5.60
17A	0.857	1.167	24/28	3.53	4.81	3.92	5.33	4.17	5.67
08A	0.852	1.174	23/27	3.51	4.84	3.89	5.37	4.14	5.70
08	0.846	1.182	22/26	3.49	4.87	3.87	5.40	4.11	5.74
19	0.840	1.190	21/25	3.46	4.91	3.84	5.44	4.08	5.78
09A	0.833	1.200	25/30	3.43	4.94	3.81	5.48	4.05	5.83
09	0.826	1.211	19/23	3.40	4.99	3.78	5.53	4.02	5.88
11	0.815	1.227	22/27	3.36	5.06	3.72	5.61	3.96	5.96
03	0.806	1.240	25/31	3.32	5.11	3.69	5.67	3.92	6.02
13	0.800	1.250	20/25	3.30	5.15	3.66	5.71	3.89	6.07
18	0.793	1.261	23/29	3.27	5.20	3.62	5.76	3.85	6.12
18A	0.786	1.273	22/28	3.24	5.24	3.59	5.82	3.82	6.18
04A	0.783	1.278	18/23	3.22	5.26	3.58	5.84	3.80	6.21
20A	0.778	1.286	21/27	3.20	5.30	3.55	5.88	3.78	6.25
04	0.774	1.292	24/31	3.19	5.32	3.54	5.90	3.76	6.27
20	0.769	1.300	20/26	3.17	5.36	3.52	5.94	3.74	6.31
22	0.760	1.316	19/25	3.13	5.42	3.47	6.01	3.69	6.39
16	0.750	1.333	18/24	3.09	5.49	3.43	6.09	3.65	6.48
10	0.739	1.353	17/23	3.05	5.57	3.38	6.18	3.59	6.57
10A	0.733	1.364	22/30	3.02	5.62	3.35	6.23	3.56	6.62
34A	0.727	1.375	16/22	3.00	5.67	3.32	6.28	3.54	6.68
34	0.724	1.381	21/29	2.97	5.69	3.31	6.31	3.52	6.71
14	0.719	1.391	23/32	2.96	5.73	3.29	6.36	3.49	6.76

Numerical Ratio Listed

GEAR SET #	LOW SPUR RATIO	HIGH SPUR RATIO	# OF TEETH	4.12 R&P Ratio (8-33 Teeth) LOW	4.12 R&P Ratio (8-33 Teeth) HIGH	4.57 R&P Ratio (7-32 Teeth) LOW	4.57 R&P Ratio (7-32 Teeth) HIGH	4.86 R&P Ratio (7-34 Teeth) LOW	4.86 R&P Ratio (7-34 Teeth) HIGH
14A	0.714	1.400	20/28	2.94	5.77	3.26	6.40	3.47	6.80
35	0.708	1.412	17/24	2.92	5.82	3.24	6.45	3.44	6.86
32	0.704	1.421	19/27	2.90	5.86	3.22	6.49	3.42	6.90
32A	0.697	1.435	23/33	2.87	5.91	3.19	6.56	3.39	6.97
24	0.690	1.450	20/29	2.84	5.97	3.15	6.63	3.35	7.04
36	0.680	1.471	17/25	2.80	6.06	3.11	6.72	3.31	7.14
37	0.677	1.476	21/31	2.79	6.08	3.10	6.75	3.29	7.17
23	0.667	1.500	22/33	2.75	6.18	3.05	6.86	3.24	7.29
21	0.655	1.526	19/29	2.70	6.29	2.99	6.98	3.18	7.41
21A	0.652	1.533	15/23	2.69	6.32	2.98	7.01	3.17	7.45
27	0.647	1.545	22/34	2.67	6.37	2.96	7.06	3.15	7.51
43	0.640	1.563	16/25	2.64	6.44	2.93	7.14	3.11	7.59
28	0.633	1.579	19/30	2.61	6.51	2.89	7.22	3.08	7.67
28A	0.630	1.588	17/27	2.59	6.54	2.88	7.26	3.06	7.71
29	0.625	1.600	15/24	2.58	6.59	2.86	7.31	3.04	7.77
39	0.621	1.611	18/29	2.56	6.64	2.84	7.36	3.02	7.83
30	0.615	1.625	16/26	2.54	6.70	2.81	7.43	2.99	7.89
40	0.613	1.632	19/31	2.53	6.72	2.80	7.46	2.98	7.93
41	0.607	1.647	17/28	2.50	6.81	2.76	7.53	2.95	8.00
31	0.600	1.667	21/35	2.47	6.87	2.74	7.62	2.92	8.10
33A	0.593	1.688	16/27	2.44	6.95	2.71	7.71	2.88	8.20
33	0.588	1.700	20/34	2.42	7.00	2.69	7.77	2.86	8.26
31A	0.583	1.714	21/36	2.40	7.06	2.67	7.83	2.84	8.33
30A	0.577	1.733	15/26	2.38	7.14	2.64	7.92	2.80	8.42
50	0.571	1.750	20/35	2.35	7.21	2.61	8.00	2.78	8.50
51	0.567	1.765	17/30	2.34	7.27	2.59	8.07	2.75	8.57
52	0.563	1.778	18/32	2.32	7.32	2.57	8.12	2.73	8.64
53	0.559	1.789	19/34	2.30	7.37	2.55	8.18	2.72	8.69
54	0.556	1.800	15/27	2.29	7.42	2.54	8.23	2.70	8.74
55	0.552	1.813	16/29	2.27	7.47	2.52	8.28	2.68	8.80
56	0.548	1.824	17/31	2.26	7.51	2.51	8.33	2.67	8.86
57	0.533	1.875	16/30	2.20	7.73	2.44	8.57	2.59	9.11
58	0.531	1.882	17/32	2.19	7.76	2.43	8.60	2.58	9.14

10” SET-UP INSTRUCTIONS

DO NOT TORCH

350°F plus and heat treat is permanently lost. Localized hot spots cause permanent distortion and loss of critical alignments. Castings will “crack” if subjected to torching.

MAGNESIUM CAN BE IGNITED - EXERCISE CAUTION!

PREPARATORY TO INSTALLING PINION INTO CASE (CENTER SECTION)

1. Retain pinion nose bearing on to the pinion gear with fast dry thread lock to ensure the bearing does not fall off during installation into the center section.
2. Check and remove any nicks or burrs in the center section pinion bore. Make sure center is clean an free of chemicals or flammable materials.
3. Heat the “clean” center to 270°-300°F in an oven. DO NOT OVER HEAT as loss of heat treatment or distortion will occur.

INSTALLING PINION INTO CASE

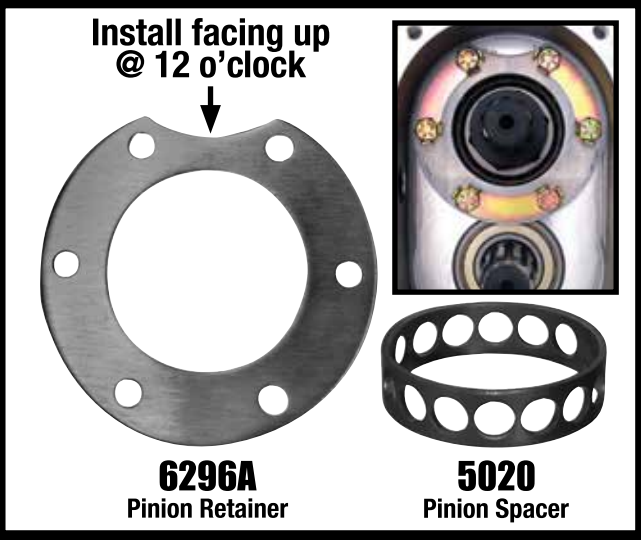
Remove heated center section from the oven and lubricate the pinion bearing bores and bearings. Install “chilled” pinion, then use a urethane (soft) hammer to ensure the pinion is seated.

Install the lower shaft and bearings while the center is still hot. BE CAREFUL TO NOT BURN YOURSELF.

1. Lubricate all bearing bores.
2. Start front ball bearing into case bore approximately 1/8”.
3. Install lower shaft through center section from rear to front into ball bearing.
4. Slide rear ball bearing over installed shaft and carefully tap rear bearing evenly into place. Pinion Spacer P/N 5020 and Pinion Retainer P/N 6269A should now be installed using (6) 3/8-16 x 1” HHCS P/N 7110 and torqued to 20-25 ft lbs.

NOTE: All bolts threaded into magnesium or aluminum should be treated with an anti-seize product.

5. Front ball bearing can now be evenly tapped into place. NOTE: The above assembly procedure is to ensure that bearings do not “cock” sideways in center section.



6. Front seal plate may now be installed and retaining bolts torqued to 20-25 ft lbs.

Allow assembled unit to cool to room temperature, 68°-72°F, before attempting to adjust pinion bearing preload.

10” SET-UP INSTRUCTIONS

TAPERED ROLLER BEARING PRELOAD

1. When adjusting pinion bearing posi-lock with new bearings, torque the posi nut to obtain 15-20 in lbs. (3-5 in lbs for REM® Bearings, 8-10 in lbs for used bearings) pinion bearing rotational preload. Lubricate o’ring in posi-lock retaining cap. Install retaining cap using finger pressure only. If it resists engagement, remove cap from pinion and rotate to next spline on 10 spline shaft and re-install. 10 splines equals 10 combinations..... try each spline for the best “no resistance” fit. All above preloads are set at 68°-72°F.

ANGULAR CONTACT BEARING PRELOAD

After pinion is installed and case has cooled down to room temperature (68°-72°F), torque the pinion nut to 80-100 ft lbs (approximate). Pinion preload is set. Lubricate o’ring in posi-lock retaining cap. Install retaining cap using finger pressure only. If it resists engagement, remove cap from pinion and rotate to next spline on 10 spline shaft and re-install.

CARRIER ASSEMBLY & RING GEAR

1. Adjusting carrier preload is next. Remove seals and o’rings from bells. DO NOT install ring gear onto carrier or spool as of yet.
2. Stand left side bell and tube vertically with bell up. Install checking bearing on ring gear end of carrier or spool (refer to page 9 for proper checking bearing).
3. Set carrier and bearing into left vertical bell.
4. Set center section assembly on bell, making sure center section is sitting flat against bell flange without bell seals and o’rings.
5. Install second checking bearing on carrier.

Whether using tapered roller bearings or angular contact bearings, side bell preload remains the same.

NOTE: Winters spools are manufactured to use approximately .080 shims for initial preload.

6. Right bell should now be put into position on top of center section. If bell flange has full contact with center section, shims should be added until right bell flange is held above center section approximately .015 for steel spool and steel Triple Track, .012 for Winters Track and Track Star, .010 for aluminum locker, and .007 for Winters aluminum spools and aluminum Triple Track. See Figure 1 on page 9 for carrier bearing preload “crush”.
7. Now that proper shim pack thickness has be determined, the shim pack should be removed and set aside for step number 9.
8. Ring gear should now be installed on carrier or spool making sure contact surfaces are perfectly clean. Install all 12 bolts and torque nuts alternating in a crisscross pattern in steps to 35 ft lbs (60 ft lbs for threaded W/P type ring gear bolts using belleville washers). Loctite® adhesive should be used on these bolts.
9. Place one shim at a time under checking bearing on ring gear side of carrier. Placing carrier an ring gear assembly in left bell, set center section on left bell and check for ring gear/pinion backlash. Make sure adjustable ring gear pad in left bell is backed out far enough so that it does not make contact with the ring gear. (If you remove the wear pad completely DO NOT forget to replace it before tightening the thru bolts or complete rear will have to be disassembled to re-install the pad.) Carefully add shims until backlash has been removed. The remaining shims from the original shim pack should be installed on the opposite side of carrier. Put the right bell in place and bolt together. Check backlash. It should be between .004 and .006. If backlash is too much, shims from the right side must be moved to the left side. Once proper backlash is reached, the checking bearings can be removed and regular bearings installed, with shims in place.

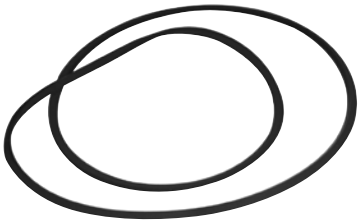
10" SET-UP INSTRUCTIONS

CARRIER ASSEMBLY & RING GEAR CONTINUED

10. Install new side bell seals P/N 7205 and o'rings P/N 7403T (4 & 6 Rib Bells) or P/N 7403 (8 Rib Bells). Lubricate seals generously. Reassemble, install thrubolts, washers and nuts. Be sure to torque thrubolts in steps until a final torque of 35 ft lbs is reached using an alternating crisscross sequence. Spin the pinion over several times checking the backlash at several intervals. Backlash should be between .004 and .006. If backlash is not correct, the rear must be torn apart and the shims swapped from side to side until proper backlash is obtained. Tight spots are not acceptable.

11. Adjust ring gear wear pad by running wear pad in against the ring gear with force of 5 in lbs, then back of approximately 1/4 turn to obtain .008 to .010 clearance between ring gear and wear pad. Tighten jam nut on adjusting screw being careful not to turn adjusting screw any further.

NOTE: Assembly Temperature = 68°-72°F



7403T
Side Bell O'Ring

7205
Side Bell Seal

7283V
Low Drag Viton Side Bell Seal

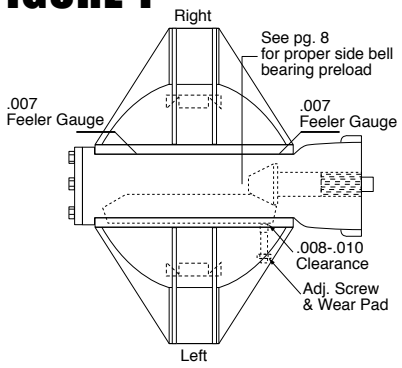
5378
Seal Driver
Used to Install Side Bell Seal 7205

COMMONLY USED REPLACEMENT PARTS

DESCRIPTION	SIZE	P/N
Carrier Bearing, Aluminum Carrier	2.031	7340
Checking Bearing, Angular Contact, Aluminum Carrier	2.031	7340ACB
Checking Bearing, Aluminum Carrier	2.031	5294
Carrier Shim Kit, Aluminum	2.031	5295
Side Bell Seals	-----	7205
Side Bell Seals, Low Drag, Viton	-----	7283V
0.375 Front Yoke Seal	-----	7204
0.750 Front Yoke Seal	-----	7204T

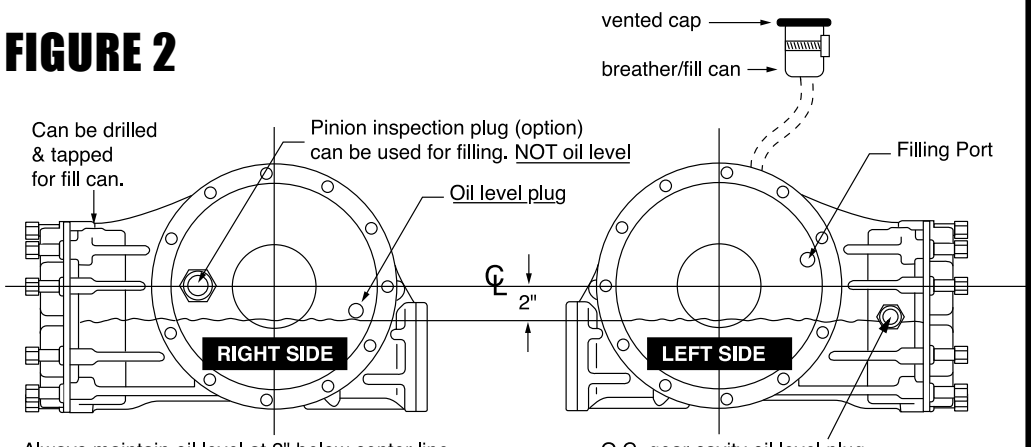
DESCRIPTION	SIZE	P/N
0.750 Front Yoke Seal, Low Drag, Viton	-----	7204V
Gear Cover Gasket, 10 Bolt	-----	6729
Gear Cover Gasket, 10 Bolt, Heavy Duty	-----	6729HD
O'Ring, Bell, 4 & 6 Rib	-----	7403T
O'Ring, Bell, 8 Rib	-----	7403
Winters Threaded Ring Gear Bolts w/ Washers, 12 ea.	-----	7868
Winters 80-90-140 Semi Synthetic Gear Oil w/ Moly	-----	1730

FIGURE 1



Whether using tapered roller bearings or angular contact bearings, side bell preload remains the same.

FIGURE 2

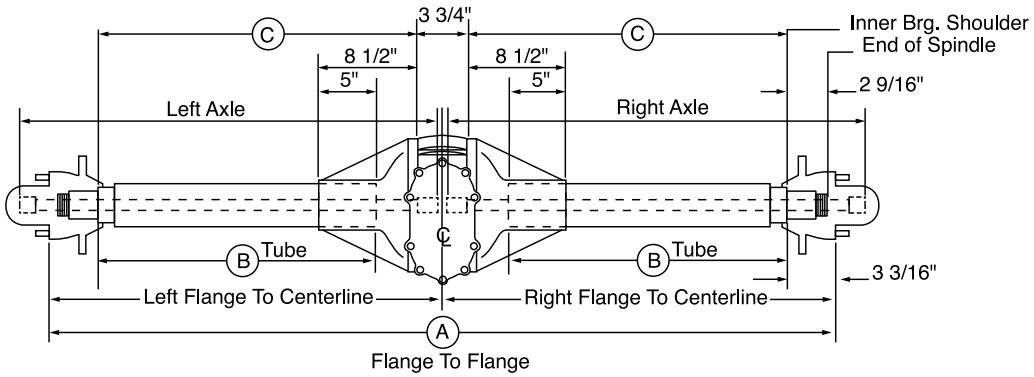


IMPORTANT! Over-filling, as well as under-filling, can cause problems.

DIMENSIONAL DATA

When ordering tread width.... Your rear end assembly may be straight-up, meaning both tubes are the same length. Popular Dimensions Shown. All Dimensions Available.

2 1/2" GRAND NATIONAL 5 X 5



A	B	C	DOUBLE SPLINE AXLE LENGTH (W/SPOOL)	TUBE END TO END LENGTH (FOR REFERENCE ONLY)
65	23.938	27.438	33	26.500
63 1/4	23.062	26.562	32 1/8	25.625
62	22.437	25.937	31 1/2	25.000
61 3/4	22.312	25.812	31 3/8	24.875
60	21.437	24.937	30 1/2	24.000
59 1/2	21.188	24.688	30 1/4	23.750
58 1/2	20.688	24.188	29 3/4	23.250

AXLE LENGTH FORMULAS

Spool, Aluminum Locker, Winters Track & Triple Track

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 0.500" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} + 0.500" - \text{Offset}$$

Lightweight Aluminum Locker

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 1.750" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} - 0.750" - \text{Offset}$$

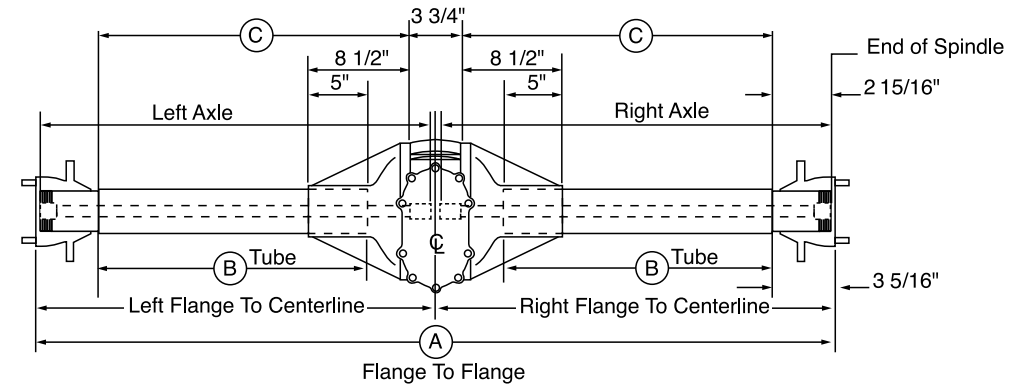
Track Star

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 2.500" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} - 1.500" - \text{Offset}$$

DOUBLE SPLINED AXLES
Specify length when ordering.
5067 Solid, 31/24 Spline
5067G Gundrilled, 31/24 Spline

2 7/8" PRO ELIMINATOR 5 X 5



A	B	C	DOUBLE SPLINE AXLE LENGTH (W/SPOOL)	TUBE END TO END LENGTH (FOR REFERENCE ONLY)
65	23.812	27.312	32	26.750
63 1/4	22.937	26.437	31 1/8	25.875
62	22.312	25.812	30 1/2	25.250
61 3/4	22.187	28.625	30 3/8	25.125
60	21.312	25.687	29 1/2	24.250
59 1/2	21.062	24.812	29 1/4	24.000
58 1/2	20.562	24.062	28 3/4	23.500

AXLE LENGTH FORMULAS

Spool, Aluminum Locker, Winters Track & Triple Track

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 0.500" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} + 0.500" - \text{Offset}$$

Lightweight Aluminum Locker

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 1.750" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} - 0.750" - \text{Offset}$$

Track Star

$$\text{Right Axle} = \frac{\text{Flange to Flange}}{2} + 2.500" + \text{Offset}$$

$$\text{Left Axle} = \frac{\text{Flange to Flange}}{2} - 1.500" - \text{Offset}$$

DOUBLE SPLINED AXLES
Specify length when ordering.
5067 Solid, 31/24 Spline
5067G Gundrilled, 31/24 Spline

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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