



 **FRANKLAND**  
RACING SUPPLY

QUICK CHANGE REAR ENDS

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# Closed Tube Superlites

The Frankland Superlite Rear is the best in the industry. Just ask around. Mark Richards says "Frankland has the best rear in the industry" The top dirt drivers run our products Josh Richards, Chub Frank, Clint Smith and many more. With fewer failures our rear will keep you on the track. Our courteous sales staff will help you with all your rear end needs.

## The Difference

The superlite rear has been in development for over 30 years. It has evolved into a lightweight and durable quickchange rear end. Our rear will save you time and money.

## Low Drag

Those looking to gain more horsepower. Try our Low Drag options. We have tested our low drag rear against the competition and our rear pulls 5% less power.



# Closed Tube Options

Frankland 01  
Frankland 05

Frankland Superlite Rear End Assembly Magnesium  
Frankland Original Rear End Assembly Magnesium

## Assembly Includes:

- Solid Heat Treated Lower Shaft
- 4.11 or 4.86 Ring and Pinion
- Aluminum Spool
- Posi-Lock

## Axle Tube Options (Priced Per Set)

One Piece Wide 5 Aluminum Tube  
Cambered (Steel-G.N., Howe, Wide 5)  
Steel Fabricated (G.N., Howe, Wide 5)  
Chrome Moly (G.N., Howe, Wide 5)  
8-Bolt Steel  
8-Bolt Aluminum  
Big Bearing Ford

## Axle Options (Priced Per Axle)

Solid Wide-5  
Gundrilled Wide-5  
Grand National Gundrilled  
Grand National Solid  
Dutchmen Flanged Axles

## Differential Options (Add these prices to Assembly price)

Torsen Gleason  
Black Gold Track  
Detroit Locker Aluminum  
Diamond Track  
Light Weight Locker

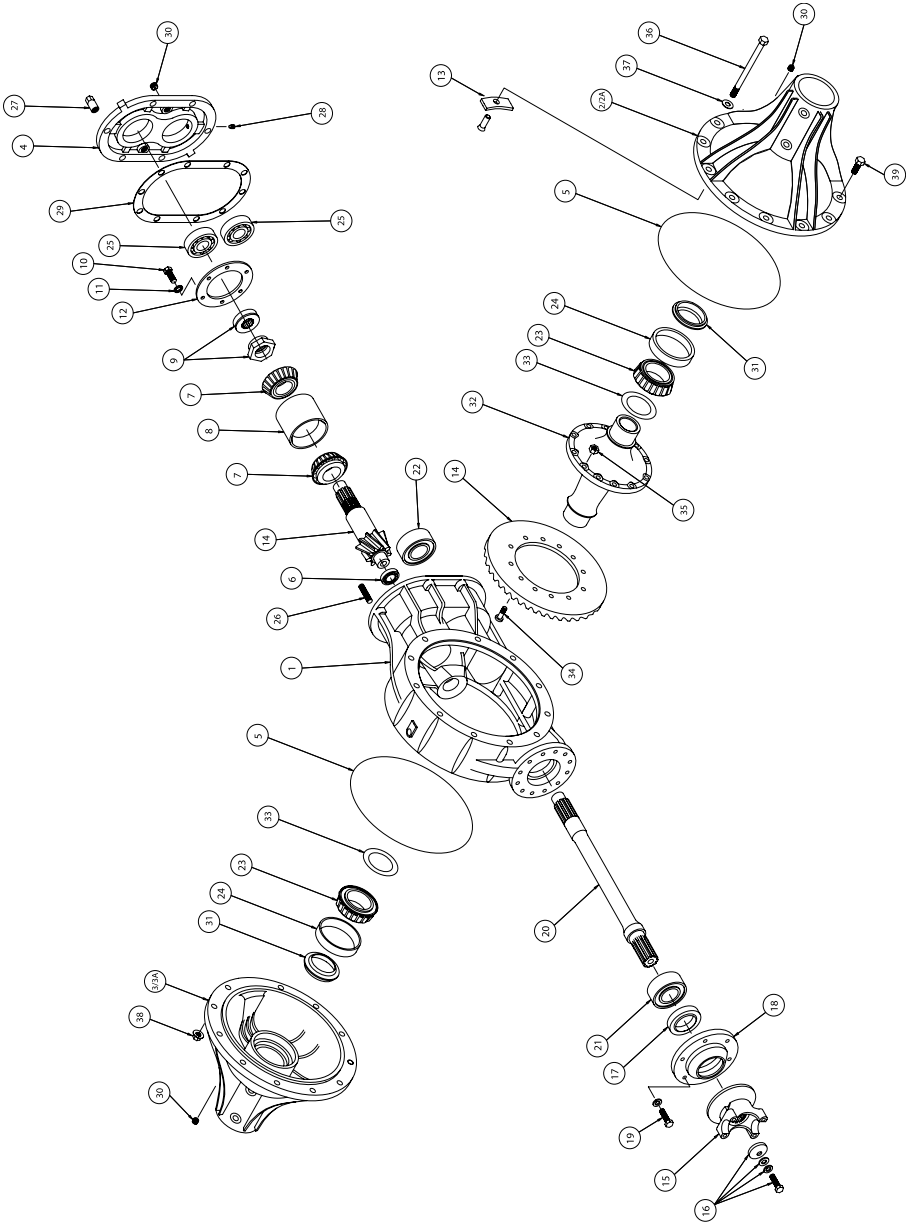
## Available Options (Add these prices to Assembly price)

Super Cover for Frankland Original  
Aluminum Yoke  
Thermal Coating  
Gundrilled Lower Shaft  
Tubular Through Bolts  
Roller Pinion Nose Bearing  
Aluminum Pinion Lock Ring  
H.D. Cover Bearings  
REM Coating  
Billet Rear Cover w/Heavy Duty Bearings  
Light Weight Ring Gear  
LD Tube Seals  
Col Fill Plugs  
300M Lower Shaft  
Seal Plate  
Site Plug Rear Cover

# Superlite Parts

1	Center Section Nose Bearing Magnesium	QC0014-MN
2	Left Side Bell 8 Rib	QC0253-ML
2A	Left Side Bell 6 Rib	QC0254M
	Left Side Bell 6 Rib (coated)	QC0254MC
3	Right Side Bell 8 Rib	QC0253-MR
3A	Right Side Bell 6 Rib	QC0255M
	Right Side Bell 6 Rib (coated)	QC0255MC
4	Superlite Rear Cover	QC0840M
5	Seal O-Ring S/L and Frankland III	QC0275
6	Bearing Pinion Nose Bearing	QC0160
7	Pinion Bearing	QC0200
8	Pinion Bearing Carrier	QC0203
9	Pinion Nut L.H. Spread Bearing Posi Lock	QC0214A
10	Pinion Lock Plate Bolt	QC0108
11	3/8 Lock Washer	QC0100
12	Pinion Lock Plate Steel	QC0060
13	Thrust Block and Pin	QC0310
14	4:86 R&P Original	QC0182
15	Yoke	QC0380
16	Yoke Bolt & Washer	QC0381
17	Front Yoke Seal	QC0150
18	Front Seal Plate	QC0140
19	3/8 x 16 x 1 1/4 Bolt Aluminum	QC0109A
20	Lower Shaft - PreHardened	QC0400SPH
21	Sprint Input Shaft Bearing	SP0017
22	Sprint Output Shaft Bearing	SP0018
23	Carrier Bearing	QC0290
24	Carrier Bearing Race	QC0280
25	Rear Cover Bearing	QC0090
26	Rear Cover Stud	QC0121
27	Rear Cover Nut	QC0122
28	Rear Cover Bearing Lock Screw	QC0117
29	Rear Cover Gasket	QC0815
30	Pipe Plug 3/8 Aluminum	QC0321-A
31	Axle Tube Seal	QC0300
32	Spool	QC0432
33	Shim Kit	KT0445
34	Ring Gear Bolt	QC0307
35	Ring Gear Nut	QC0103
36	Through Bolt	QC0306
37	7/16 Washer	QC0302
38	7/16 Nut	QC0306
39	7/16 x 14 x 1 1/4" Bolt	QC0305

# Superlite Exploded



# Closed Tube Parts



KT0099

- Yokes  
 QC0380 Yoke  
 QC0381 Yoke Bolt and Washer  
 QC0382 Yoke Aluminum  
 QC0384 Yoke Spacer  
 KT029428X U Bolts for Quick Change  
 KT0099 Seal Plate with Bolts Aluminum  
 QC0130 Yoke Seal Non-Quick  
 QC0140 Seal Plate Open Drive  
 QC0150 Seal Front Yoke Open Drive  
 QC0150W Yoke Seal Winters®  
 QC0150W-LD Low Drag Yoke Seal



KT029428X



QC0381

- Lower Shafts  
 QC040SPH Lower Shaft Solid  
 QC0420GD Lower Shaft GunDrilled  
 QC0400-300M Lower Shaft Severe Duty



QC0380

- Lower Shaft Bearings  
 QC0030 Rear Bearing Lower Shaft (Single Row)  
 QC0031 Rear Lower Shaft Bearing  
 QC0031S Front Lower Shaft Sealed Bearing  
 SP0017 Front Lower Shaft Bearing for Nose Bearing Centers  
 SP0018 Rear Lower Shaft Bearing for Nose Bearing Centers

\*Specify your center section when ordering bearings

# Closed Tube Axles



QC0150WHD

- QC0900 Axle Solid  
 QC0910 Axle Gundrilled

\* Please Specify Length when ordering.



QC0150W



QC0130

Solid Axle Lengths Available	
26"	33"
26 1/2"	33 1/2"
27"	34"
27 1/2"	34 1/2"
28"	35"
28 1/2"	35 1/2"
29"	36"
29 1/2"	36 1/2"
30"	37"
30 1/2"	37 1/2"
31"	38"
31 1/2"	39"
32"	39 1/2"
32 1/2"	40"
	40 1/2"

Gundrilled Axle Lengths Available	
26"	34 1/2"
27"	35"
28"	35 1/2"
29"	36"
30"	36 1/2"
30 1/2"	37"
31"	37 1/2"
31 1/2"	38"
32"	39"
32 1/2"	39 1/2"
33"	40"
33 1/2"	40 1/2"
34"	41"
	41 1/2"



QC040SPH

# Closed Tube Centers



## Center Sections

QC0014A

QC0014MN

QC0014MNC

Superlite Center Aluminum

Superlite Center Mag with Nose Bearing

Superlite Mag Thermal Coated with Nose Bearing

## Winters® Replacement Centers

QCW0014M

Winters® Replacement Center Section Magnesium

# Sidebells and Accessories

## Superlite Side Bells

QC0253AL

QC0253AR

QC0253ML

QC0253MLC

QC0253MR

QC0253MRC

Superlite Bell Aluminum Left

Superlite Bell Aluminum Right

Superlite Left Bell Magnesium 8 Rib

Superlite Left Bell Magnesium Coated 8 Rib

Superlite Right Bell Magnesium 8 Rib

Superlite Right Bell Magnesium Coated 8 Rib

## Superlite Side Bells

QC0254M

QC0254MC

QC0255M

QC0255MC

Superlite Left Bell Magnesium 6 Rib

Superlite Left Bell Magnesium 6 Rib Coated

Superlite Right Bell Magnesium 6 Rib

Superlite Right Bell Magnesium 6 Rib Coated

## Seals, gaskets, bolts, accessory kits

QC0270

QC0275

QC0280

QC0300

QC0310

QC0321

QC0321A

Seal O-Ring Original/Sprint

Seal O-Ring S/L and Frankland III

Bearing Carrier Race

Seal Axle Tube

Thrust Block and Pin

Pipe Plug 3/8

Pipe Plug 3/8 Aluminum



QC0270

QC0275



QC0253ML



QC0254MC



QC0300



QC0253MRC



QC0255MC



QC0310



# Closed Tube Center & Side Bell Kits



## Center Kits

Kit Includes all components minus differential, axle tubes and side bells

- KT0010 Original Center Aluminum
- KT0010M Original Center Magnesium
- KT0014A Superlite Center Aluminum
- KT0014M Superlite Center Magnesium
- KT0014MC Superlite Center Thermal Coated Magnesium
- KT0014MN Superlite Center Nose Bearing Magnesium
- KT0014MNC Superlite Center Thermal Coated with Nose Bearing

## Side Bell Kits

Kit includes tube, sidebell, race, o-ring and seals

- KT0254M Superlite 6 Rib Left Side Bell Loaded
- KT0254M Superlite 6 Rib Left Side Bell Loaded Coated
- KT0255M Superlite 6 Rib Right Side Bell Loaded w/o Sight Plug
- KT0255M Superlite 6 Rib Right Side Bell Loaded w/o Sight Plug Coated

# Overhaul Kits



## Overhaul Kits

All overhaul kits include bearings, seals, o-rings and races to rebuild your center.

KT0106	Overhaul Kit for Original with Regular Cover
KT0107	Overhaul Kit for Original with Super Cover
KT0108	Overhaul Kit for Frankland III with Regular Cover
KT0109	Overhaul Kit for Frankland III with Super Cover
KT0111NB	Overhaul Kit Superlite with Nose Bearing

## Sample Kit Includes

KT0111NB Overhaul Kit Superlite with Nose Bearing

QC0442 Spool Shim .025

QC0439 Spool Shim .005

QC0440 Spool Shim .007

QC0441 Spool Shim .012

SP0017 Sprint Input Shaft Bearing

SP0018 Sprint Output Shaft Bearing

QC0090 Bearing Rear Cover

QC0150 Seal Front Yoke (Open Drive)

QC0200 Bearing Pinion Carrier Bearing

QC0275 Seal O-Ring S/L and III

QC0290 Bearing Carrier

QC0300 Seal Axle Tube

QC0310 Thrust Block and Pin

QC0815 Seal Rear Cover Gasket

QC0203 Pinion Race S/L Sprint

QC0280 Bearing Carrier Race

QC0160 Bearing Pinion Nose Narrow

QC0214A Posi-Lock Nut Aluminum

## Tech Tip:

The difference between left and right side bell is that the left bell is machined to fit the thrust block pin.

# Tubes



QC0261

## Grand National

QC0261  
 QC0261-05  
 QC0261-10  
 QC0261-1.5  
 QC0261L  
 QC0261L-05  
 QC0261L-10  
 QC0261L-15  
 QC0261L-S

Grand National Tube Fab Steel  
 Grand National Tube .5 Degree  
 Grand National Tube 1 Degree  
 Grand National Tube 1.5 Degree  
 Grand National Tube Fab Steel LFT Threads  
 Grand National Tube .5 Degree LFT Threads  
 Grand National Tube 1 Degree LFT Threads  
 Grand National Tube 1.5 Degree LFT Threads  
 Grand National Snout Left Hand



QC0261-S



QC0262

QC0261-S  
 QC0263-B

Grand National Snout Right Hand  
 Axle Tube Baby Grand Steel



QC0262-S

## Howe

QC0262  
 QC0262-S  
 QC0262-05  
 QC0262-10  
 QC0262-15  
 QC0262-20  
 QC0263  
 QC0263-05  
 QC0263-10  
 QC0263-15  
 QC0263-M5  
 QC0263-S

HOWE Tube Fab Steel  
 HOWE Snout  
 HOWE Tube .5 Degree  
 HOWE Tube 1 Degree  
 HOWE Tube 1.5 Degree  
 HOWE Tube 2 Degree  
 Wide 5 Fab Steel  
 Wide 5 .5 Degree  
 Wide 5 1 Degree  
 Wide 5 1.5 Degree  
 Mini 5 Fab Steel  
 Wide 5 Snout



QC0263



QC0264



QC0265S

QC0263C  
 QC0264  
 QC0265S  
 QC0266  
 QC0269  
 QC0268

Wide 5 Tube Chrome Moly 1/8 Wall  
 One Piece Aluminum Wide 5 Axle Tube + Length  
 8 Bolt Tube End  
 Axle Tube 8 Bolt Aluminum  
 Snout 8 Bolt Steel Wide 5 Snout  
 8 Thin Flange



QC0266

## Tube Accessories

QC0300  
 TT4500-W  
 TT4625  
 QC0300LD

Axle Tube Seal  
 Seals It Tube Seal (2.500 O.D.) (steel or aluminum)  
 Seals It Tube Seal (2.625 O.D.) (steel or aluminum)  
 Low Drag Tube Seals



QC0269

\*When ordering please specify length

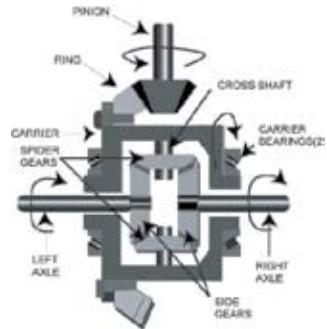
**Tech Tip: How To Measure Tube Length? Measure tube end to end. Note: 5" of material goes into the side bell**

# Differentials

	QC0432 KT0432	Spool Aluminum W/Bearings and Shims
	QC0450 KT0100	Torsen Gleason W/Bearings and Shims
	QC0448 KT0448	Diamond Track W/Bearings and Shims
	QC0433 KT0433	Detroit Locker Aluminum W/Bearings and Shims
	QC0461	9" Ford Torsen Gleason
	DPI125034T	Black Gold Track
	QC0433LW	Liteweight Locker
	KT0125034T	W/Bearings and Shims
	Accessories and Kits KT0445	Differential Shim Kit

## How Differentials Work

Automotive differentials, devices that allow one drive wheel to turn faster than the other when the car is cornering, are necessary in passenger cars and trucks. During cornering, the outside wheel follows a larger radius than the inside wheel and therefore travels a greater distance. Differentials allow one drive wheel to speed up while the other one slows down by the equal amount. This differential action is accomplished by interconnecting the inboard ends of the two axles with a series of gears. The most common type of differential is the simple open differential.



### Gleason Notables:

- 1.) If your rear end application utilizes threaded ring gear bolts they should not protrude more than one thread through the ring gear.
- 2.) Frankland Originals must use a single row pinion support bearing (QC0170) for clearance purposes.

# Hub Accessories



RH0001



RH0003



FPH54



FPH55T-GD



RH0001S



FPH5RING1 & FPH5FCAP

## Frankland Wide 5 Accessories

FPH5-B1	Hub 7/16 x 14 x 2 1/4 SS Drive Flange Stud
FPH5-N1	Hub 14 Nylock- Drive Flange Nuts
FPH5-W1	Hub 7/16 Small Od Washer
FPH5RING1	Hub Cap O-Ring 3/16 - 2 7/8 ID 66892
FPH5FCAP	Hub Cap For Front (Purple, Gold & Black)
FPH54	Hub Wide 5 Seal(rubber coated)
FPH5STKIT	Hub Wide 5 Stud Kit For Hubs
FPH55T	5/8 x 2 1/4 Stud
FPH55T-GD	Hub Stud 5/8 x 2 1/4 GunDrilled
KT0140	Drive Flange Stud Kit
KT0141	Rotor Stud Kit
KT0270	Wide Five Hub Kit Bearing Assembly
QC0930	Drive Flange Aluminum
QC0935	Drive Flange 5 Bolt
RH0004	Wide 5 Outer Hub Race
RH0005	Wide 5 Outer Hub Bearing
RH0006	Wide 5 Inner Hub Race
RH0007	Wide 5 Inner Hub Bearing
RH0009	Spindle Lock Washer
RH0010	Wide 5 Nut
RH0012	Wide 5 Hub Seal
RH0014A	Front Hub Dust Cover Aluminum
RH0014S	Front Hub Dust Cover Steel
RH0001	Lug Nut Aluminum
RH0001S	Lug Nut Steel LEF0832084
RH0002	Wide 5 Spindle Nut Aluminum
RH0002-LW	Wide 5 Spindle Lock Washer
RH0002-S	Wide 5 Spindle Locking Screw
RH0002-W	Wide 5 Spindle Washer
RH0003	Wide 5 Hub Seal
KT0270-LD	Angular Contact W-5 Bearings
KT0270	W-5 Bearing Assy. Standard
KT0270-REM	W-5 Bearing ASSY REM Polish

## Grand National

GN210-K	Grand National Steel Hub Kit
GN0009	Grand National Hub Race
GN0060	Grand National Snout Nut Right
GN0070	Grand National Snout Nut Left
GN0080	Grand National Snout Nut Lock
GN0100	Grand National Hub Bearing
GN0110	Grand National Hub Seal
GN0140	Grand National Outer Snout Seal

# Hubs

## Frankland Wide 5 Hubs

FPH5F	Hub Wide 5 Front Assembly
FPH5FC	Hub Wide 5 Front Assembly Coated
FPH5FCL	Hub Wide 5 Front Assembly Coated w/Drilled Studs
FPH5LN	Hub Wide 5 Aluminum Wheel Nut Assembly
FPH5FLW	Hub Wide 5 Front Assembly w/Drilled Studs
FPH5R	Hub Wide 5 Rear Assembly
FPH5RC	Hub Wide 5 Rear Assembly Coated
FPH5RCL	Hub Wide 5 Rear Assembly Coated w/ Drilled Studs
FPH5RLW	Hub Wide 5 Rear Assembly w/ Drilled Studs
FPH5-5R	Hub Wide 5 Rear 5 Bolt Assembly
FPH5-5RC	Hub Wide 5 Rear 5 Bolt Assembly Coated
FPH5-5RD	Hub Wide 5 Rear 5 Bolt w/ Drilled Studs
FPH5-5CD	Hub Wide 5 Rear 5 Bolt Coated w/ Drilled Studs

## Wide Five

WIL270-1956	Wilwood Hub - 8 Bolt
WIL270-6735C	Wilwood 5 Star Front with Cap
WIL270-6513C	Wilwood 5 Star Rear
WIL270-6735D	Wilwood 5 Star Front w/ Cap Drilled Studs
WIL270-6513D	Wilwood 5 Star Rear w/ Drilled Studs



FPH5FC & FPH5RC



FPH5F & FPH5R



KT0270



KT0140



QC0930



QC0935

### Tech Tip:

When using magnesium hubs prevent excessive wear to drive flange threads using Frankland's drive flange stud kit (KT0140)

# Closed Tube Brakes and Accessories



TBM7-0577

- TBM7-0577-12 Brake Fluid
- TT4500-W Seals it Tube Seal
- TT4625 Seals it Tube Seal
- WIL15B-3992K Brakepad Polymatrix Set Black
- WIL15D4332K Brakepad Wilwood, 7320D, SL Polymatrix Set
- WIL160-0471 Rotor .810 LM 11.75 8 on 7"
- WIL160-0843 Rotor 1.25 LM 11.75 8 on 7"
- WIL160-5864 Rotor 1.25 LM 11.75 8 on 7"
- WIL160-2898 Rotor 1.25 RT 11.75 8 on 7"
- WIL160-2899 Rotor 1.25 LT 11.75 8 on 7"



WIL160-2898

WIL160-2899

WIL160-0471



WIL120-3191

WIL15B-3992K



**Tech Tip:**  
 When using curved vane rotors be sure to have the directional fins rotating properly. They are marked with R and L

# Open Tube Rears

The Frankland Live Axle Rear End has revolutionized the sprint car market by becoming the strongest in the industry. Frankland took the initiative to solve the problems that were common to the live axle rear ends of that time. The innovated design of the right side bell cast as an integral part of the center section added strength to the nose area and extended the life of the ring and pinion by decreasing the flexing of the center section and side bell. This rear end is strong, to prove it, the center section is guaranteed for a year against breakage. With additional lightweight options, this rear end can also become the lightest in the industry.





# Open Tube Options

Frankland 02

Frankland Live Axle Rear End Assembly Magnesium

## STD Assembly Includes

- Integral Center Magnesium (1 year guaranteed)
- Heat Treated and Gundrilled External L. Shaft
- Short Spline Axle with Brake Spline
- Choice of 4.12 or 4.86 Ring and Pinion
- Pos. Lock Pinion Nut
- Std. Length Aluminum Axle with Brake Spline

## Available Options

- Long Spline Lightweight
- Axle
- Specialty Axle
- Thermal Coating
- Internal Coupler Steel
- Aluminum Lock Ring
- Titanium Studs
- Scalloped Ring Gear 1pc.
- Brake Hub
- Shifter Bracket
- H.D. Cover Bearings
- Roller Nose Bearing
- Ball Spline
- TI Lower Shaft

# Open Tube Centers



SP0014MN  
SP0014MNC

Sprint Center with Nose Bearing  
Sprint Center with Nose Bearing Thermal Coated

Winters® Replacement Centers

SPW0014M                  Winters® Replacement Center

# Sprint Kits

SP0046-LOCK      Shifter Handle and Cable  
KTSP0047          Shifter Bracket kit  
SP0047              Sprint Shifter Cable Bracket  
QC0121              3/8 Cover Stud S/L - Sprint  
QC0101HD          3/8 Flat Washer Grade 9 Zinc



SP0046-LOCK

KT0060              Steel Lock Plates with Steel Bolts  
KT0060A            Lock Plate with Alum Bolts  
KT0104              Sprint Shim Kit  
SP0046QR          10/32 female to 1/4-28 ball stud quick release



SP0046QR



KTSP0021B



KTSP0047

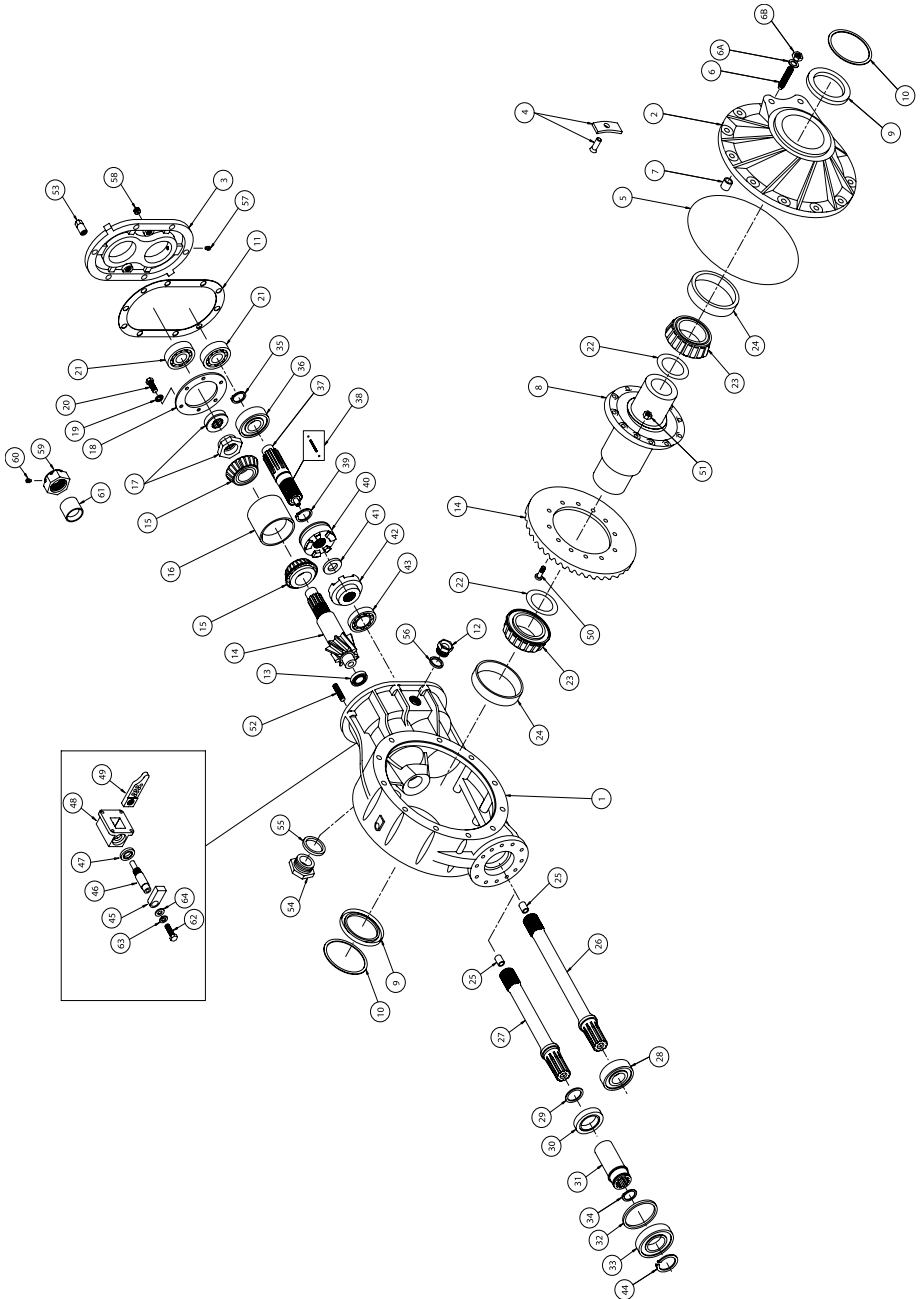


KT0104

# Open Tube Parts

1	Sprint Center Section with Nose Bearing	SP0014MN
2	Sprint Side Bell	SP00253M
3	Sprint Rear Cover	QC0840M
5	Seal O-Ring Original Sprint	QC0270
6	Sprint Pinion Thrust Set Screw 1/2 x 13	SP0311
6a	Sprint Pinion Thrust Washer	SP0313
6b	Sprint Pinion Thrust 1/2 Nut	SP0312
7	Sprint Pinion Thrust Stop Block (w/o for SP0310)	SP5008
9	Sprint Axle Seal	SP0005
10	Sprint Axle Seal Lock Ring	SP0006
11	Rear Cover Gasket	QC0815
12	Sprint Filler Plug	SP0037
13	Bearing Pinion Nose Bearing Narrow	QC0160
14	4:86 R&P Spread Bearing	QC0184
15	Bearing Pinion Carrier Bearing	QC0200
16	Pinion Race S/L Sprint	QC0203
17	Posi Lock Pinion Nut	QC0214A
18	Pinion Lock Plate	QC0060
19	3/8 Lock Washer	QC0100
20	3/8 x 16 x 1 Bolt	QC0108
21	Rear Cover Bearing	QC0090
22	Sprint Shim Kit	KT0104
23	Bearing Carrier	SP0003
24	Bearing Carrier Race	SP0004
25	Input Shaft Bushing	SP1216
26	Sprint Input Shaft	SP1207
27	Sprint Input Shaft Internal Dog Ring	SP1207I
28	Sprint Input Shaft Bearing	SP0017
29	Sprint Filler Plug	SP0037
30	Sprint Internal Coupler Seal	SP0101S
31	Sprint Internal Coupler Steel With Snap Rings	SP0101
32	Sprint Internal Spacer Ring	SP0101SR
33	Sprint Internal Coupler Bearing	SP0017I
34	Sprint Internal Coupler Snap Ring Small	SP0101-S
35	Sprint Retaining Clip for Output Shaft Dog Ring	SP1238
36	Sprint Output Shaft Bearing	SP0018
37	Sprint Output Shaft Dog Ring	SP1208
38	Sprint D-Tent Spring Dog Ring	SP1220
39	Sprint Output Retaining Ring Inner	SP1238
40	Sprint Output Shifter Ring	SP1209
41	Sprint Shifter Washer-Bronze	SP1205
42	Sprint Input Shifter Ring	SP1206
43	Sprint Output Center Bearing Dog Ring	SP1219
44	Internal Coupler Snap Ring Large	SP0101-SR
45	Sprint Shifter Link Aluminum	SP0014
46	Sprint Shifter Shaft Aluminum	SP1213A
47	Sprint Shifter Seal	SP0012
48	Sprint Shifter Housing Dog Ring	SP1211
49	Sprint Shifter Actuator Dog Ring	SP1215
50	Ring Gear Bolts	QC0307
51	3/8 38 x 24 Nylock Nuts	QC0103
52	3/8 Cover Stud S/L S/P	QC0121
53	Rear Cover Nut S/L S/P Aluminum	QC0122
54	Sprint Sight Plug Aluminum	SP0031
55	Sprint Sight Pulg "O" Ring	SP0031-0
56	"O" Ring For Filler Plug/and for Internal Coupler	SP0037-0
57	1/4 x 20 x 5/16 Half Daug Set Screw	QC0117
58	Pipe Plug 3/8	QC0321
62	3/8 x 243/4 Bolt	QC0104
63	3/8 Lock Washer	QC0100
64	3/8 Flat Washer	QC0101

# Open Tube Exploded



# Open Tube Axles



Available in Black, Purple and Red



FP6100 & FP6101

## Axles

- SP0001 Axle Short Spline Regular
- SP00012 Axle Long Left Side Lightweight
- SP0002 Axle Long Spline Regular
- SP0002-2 Axle Long Spline Left Side
- SP0002AVENG Axle Long Spline Avenger
- SP054-4 Sprint Axle 4" Offset Silver Crown with 1.75 Bore



SP0023A

## Axle Accessories

- FP6100 Sprint Axle Nut (Aluminum) Right
- FP6101 Sprint Axle Nut (Aluminum) Left
- SP0023A Sprint Magnesium Brake Rotor Hub One Piece
- FP6200 Sprint Axle Nut (MAG) Right
- FP6201 Sprint Axle Nut (MAG) Left

# Open Tube Side Bells



SP00253M

## Sidebells

- SP00253M Sprint Side Bell
- SP00253M-C Sprint Side Bell Thermal Coated
- KTSP00253M Sprint Side Bell Kit
- KTSP00253M-C Sprint Side Bell Kit Thermal Coated
- SP0005 Sprint Axle Seal
- SP0006 Sprint Axle Seal Lock Ring
- SP0310 Sprint Pinion Thrust Stop Block Kit



SP00253MC

## Winters® Side Bells

- SPW0005 Winters® Bell Seal
- SPW00253M Winters® Sprint Side Bell
- KTSPW00253M Winters® Sprint Side Bell Conversion Kit



SP0005 & SP0006



SP0310

# Open Tube Overhaul Kits



## Overhaul Kits

All overhaul kits include bearings, seals, o-rings and races to rebuild your center.

KTSP003	Sprint Overhaul Kit External Shaft (First Generation)
KTSP003I	Sprint Overhaul Kit Internal Shaft (First Generation)
KTSP123	Sprint Overhaul Kit External Shaft (New Generation)
KTSP123I	Sprint Overhaul Kit Internal Shaft (New Generation)

## Sample Kit Includes

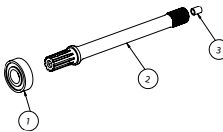
KTSP003	Sprint Overhaul Kit External Shaft
SP0017	Sprint Input Shaft Bearing
SP0018	Sprint Output Shaft Bearing
SP0009	Sprint Snapping Lower Output
SP0019	Sprint Input Shaft Housing Bearing
SP0003	Sprint Carrier Bearing
SP0004	Sprint Carrier Race
SP0005	Sprint Axle Seal
SP0006	Sprint Axle Seal Lock Ring
QC0090	Bearing Rear Cover
QC0270	Seal O-Ring Original Spring
SP0313	Sprint Pinion Thrust Stop Block
SP0022	Sprint Shims
QC0200	Bearing Pinion Carrier Bearing
QC0203	Pinion Race S/L Sprint
QC0815	Seal Rear Cover Gasket
QC0160	Bearing Pinion Nose Narrow



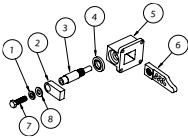
### Tech Tip:

Illustrated is the difference in throw distance between Old Generation (left) and New Generation (right) shifter assembly.

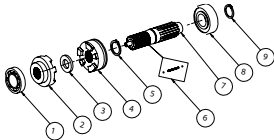
# New Generation Shifter Kits



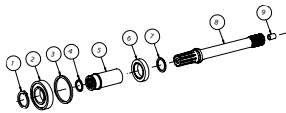
- KTSP121**  
 1.) SP0017  
 2.) SP1207  
 3.) SP1216
- Sprint Input Shaft and Bearings NG\***  
 Sprint Input Shaft Bearing  
 Sprint Input Shaft  
 Sprint Shifter Bushing-Oil



- KTSP122**  
 1.) QC0100  
 2.) SP0014  
 3.) SP1213A  
 4.) SP0012  
 5.) SP1211  
 6.) SP1215  
 7.) QC0104  
 8.) QC0101
- Sprint Shifter Assembly NG\***  
 3/8 Lock Washer  
 Sprint Shifter Link Aluminum  
 Sprint Shifter Shaft Aluminum  
 Sprint Shifter Seal  
 Sprint Shifter Housing - New Generation  
 Sprint Shifter Actuator - New Generation  
 3/8 x 24 x 3/4 Bolt  
 3/8 Flat Washer



- KTSP124**  
 1.) SP1219  
 2.) SP1206  
 3) SP1205  
 4.) SP1209  
 5.) SP1238  
 6.) SP1220  
 SP0020B  
 7.) SP1208  
 8.) SP0018  
 9.) SPW7658
- Sprint Output Shaft Kit NG\***  
 Sprint Output Center Bearing  
 Sprint Input Shifter Ring  
 Sprint Input Shifter Washer (Bronze)  
 Sprint Output Shifter Ring  
 Sprint Retaining Clip  
 Sprint D-Tent Spring  
 Sprint Roller Ball  
 Sprint Output Shaft  
 Sprint Output Shaft Bearing  
 Sprint Output Shaft Rear Snap Ring

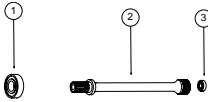


- KTSP124I**  
 1.) SP0101-SR  
 2.) SP0017I  
 3.) SP0101SR  
 4.) SP0037-0  
 5.) SP0101L  
 6.) SP0101S  
 7.) SP0101-0  
 8.) SP1207I  
 9.) SP1216
- Sprint Internal Conversion Kit NG\***  
 Sprint Internal Coupler Snap Ring (Large)  
 Sprint Internal Coupler Bearing  
 Sprint Internal Spacer Ring  
 "O" Ring for Internal Coupler  
 Sprint Internal Coupler Steel  
 Sprint Internal Coupler Seal  
 Sprint Internal O-Ring  
 Sprint Input Shaft Internal  
 Sprint Shifter Bushing - Oil

- KTSP124C**  
**KTSP125**
- Sprint Output Shaft Kit Dog Ring Conversion**  
**Sprint Ball Spline Kit**  
 Frankland's New Generation dog tooth design makes the rear end virtually impossible to slip out of gear.

\*New Generation

# First Generation Shifter Kits



## KTSP001

- 1.) SP0017
- 2.) SP0007
- 3.) SP0016

## Sprint Input Shaft and Bearings

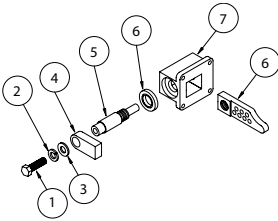
- Sprint Input Shaft Bearing
- Sprint Input Shaft
- Sprint Input Pilot Bearing

## KTSP002

- 1.) QC0104
- 2.) QC0100
- 3.) QC0101
- 4.) SP0014
- 5.) SP0013
- 6.) SP0012
- 7.) SP0011
- 8.) SP0015

## Sprint Shifter Assembly - FG\*

- 3/8 x 24 x 3/4 Bolt
- 3/8 Lock Washer
- 3/8 Flat Washer
- Sprint Shifter Link Aluminum
- Sprint Shifter Shaft
- Sprint Shifter Housing Seal
- Sprint Shifter Housing
- Sprint Shifter Actuator

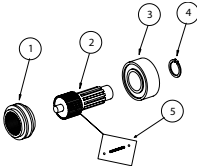


## KTSP004

- 1.) SP0010
- 2.) SP0008
- 3.) SP0018
- 4.) SP0009
- 5.) SP0020B
- 6.) SP0020S

## Sprint Output Shaft Kit - FG\*

- Sprint Drive Coupler
- Sprint Lower Output Shaft
- Sprint Output Shaft Bearing
- Sprint Snap Ring Lower Output
- Sprint D-Tent Ball
- Sprint D-Tent Spring

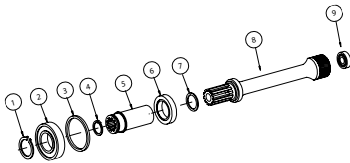


## KTSP004I

- 1.) SP0101-SR
- 2.) SP0017I
- 3.) SP0101SR
- 4.) SP0037-0
- 5.) SP0101L
- 6.) SP0101S
- 7.) SP0101-0
- 8.) SP0007I
- 9.) SP0016

## Sprint Internal Conversion Kit - FG\*

- Internal Coupler Snap Ring Large
- Sprint Internal Coupler Bearing
- Sprint Internal Spacer Ring
- "O" Ring for Internal Coupler
- Sprint Internal Coupler Steel
- Sprint Internal Coupler Seal
- Sprint Internal O-Ring
- Sprint Input Shaft Internal Steel
- Sprint Input Pilot Bearing



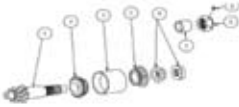
\* - First Generation



# Pinion Assemblies

## Superlite/Live Axle Assemblies

KT0355-214A	R&P Loaded 4:86 SL/SP (PICT)
1 QC0184	R&P 4:86 Spread Bearing
2 QC0200	Bearing Pinion Carrier Bearing
3 QC0203	Spread Bearing Pinion Race S/L and Sprint
4 QC0214-A	Posi-Lock Pinion Nut S/L and Sprint
5 QC0213	Pinion Nut S/L, SP and Frankland III
6 QC0119	1/4-28 x 5/16 Half Daug Set Screw (Pinion)
7 QC0206	Pinion Spacer

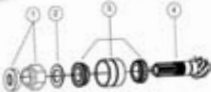


Kits Include R&P, Bearings, Race, Posi-Lock Pinion Nut or Steel Pinion Nut with Spacer and Set Screws

KT0430	R&P Loaded 4:11 SL/SP
KT0430L	R&P Loaded 4:11 SL/SP LW
KT0430-214A	

## Original/Non-Quick Assemblies

KT0300	R&P Loaded 4:86 Original/Non-Quick (PICT)
1 QC0182	R&P 4:86 Original Timken Assembly
2 QC0205	Bearing Pinion Assembly
3 QC0220	Pinion Nut Washer
4 QC0215-2	Posi-Lock Pinion Nut L.H. Original



Kits Include R&P, Bearings, Race, Posi-Lock Pinion Nut or Steel Pinion Nut with Spacer and Set Screws

KT0400	R&P Loaded 4:11 Original/Non-Quick
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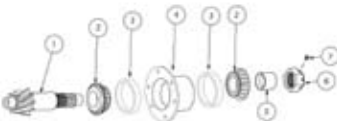
## Frankland III Assemblies

KT0350	R&P Loaded 4:86 Frankland III (PICT)
1 QC0184	R&P 4.86 Spread Bearing
2 QC0200	Bearing Pinion Carrier Bearing
3 QC0190	Frankland III Carrier Race
4 QC0195	Frankland III Pinion Carrier
5 QC0206	Pinion Spacer
6 QC0213	Pinion Nut Steel
7 QC0119	1/4 - 28 x 5/16 Set Screw



Kits Include R&P, Bearings, Race, Posi-Lock Pinion Nut or Steel Pinion Nut with Spacer and Set Screws

KT0425	R&P Loaded 4:11 Frankland III
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# Ring and Pinions

## Ring and Pinion

QC0182	4:86 R&P Original
QC0183	4:11 R&P Original
QC0184	4:86 R&P S/L Sprint
QC0185	4:11 R&P S/L Sprint
QC0185L	4:11 R&P S/L Sprint Frankland III Lightweight

## Accessories

KT0450	Ring Gear Bolt Kit
QC0213	Pinion Nut Steel S/L and Sprint
QC0214A	Pinion Nut L.H. Spread Bearing
QC0215-2	Posi-Lock Pinion Nut L.H. Original
QC0160	Bearing Pinion Nose Narrow
QC0160HD	Bearing Pinion Nose Heavy Duty
QC0171	Bearing Pinion Nose Wide w/Snapping
QC0060	Pinion Lock Plate
QC0060A	Pinion Lock Plate Aluminum
RIC84-0010-1	Threaded Ring Gear Bolt Kit



QC0184



QC0185L



QC0214A



QC0060-QC0060A



QC0160



QC0160HD



QC0213



QC0171



QC0215-2

# Rear Covers

## Superlite and Live Axle Rear Cover

QC0840M	Superlite Rear Cover
QC0840MC	Superlite Rear Cover Thermal Coated

## Superlite and Live Axle Rear Cover Kits

Includes Cover, Bearings, Pipe Plug, Cover Gasket and Set Screw

KT0840M-HD	Superlite Cover W/ Heavy Duty Bearings
KT0840M	Superlite Cover W/ Std. Bearings
KT0840MC	Superlite Cover W/ Std. Bearings Thermal Coated
KT0840MC-HD	Superlite Cover W/ Std. HD Bearings Thermal Coated
KT0840B	Superlite Cover Billet W/H.D. Bearings
KT0840BP	Superlite Cover Billet W/ Pump Mount

## Kit Accessories

QC0090	Standard Rear Cover Bearing
QC0090HD	Heavy Duty Rear Cover Bearing
QC0321	Pipe Plug 3/8
QC0815	Seal Rear Cover Gasket
QC0117	1/4-20 x5/16 Half Daug Set Screw

## Bolt Kits

KT0480	Superlite Cover Stud and Nut Kit
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## Rear Cover Accessories

QC0815	Rear Cover Gasket
QC0321	Pipe Plug 3/8 Steel
QC0321A	Pipe Plug 3/8 Aluminum
FEL2303	FelPro Rear Cover Gasket

## Winters® Replacement Rear Cover and Accessories

QCW0840M	Winters® Superlite Rear Cover Replacement
QCW090	Winters® Rear Cover Bearing with Snap Ring
QCW090HD	Winters® Bearing Double Row Cover with Snap Ring



Rear Cover Bolt  
Color Options



KT0480



QC0815



FEL2303

# Rear Cover Kits

## Original Rear Covers

QC0800	Original Cover Aluminum
QC0800M	Original Cover Magnesium
QC0830	Original Super Cover Aluminum
QC0830M	Original Super Cover Magnesium

## Original Rear Cover Kits

Includes Cover, Bearings, Pipe Plug and Cover Gasket

KT0800	Original Aluminum Cover
KT0800M	Original Magnesium Cover
KT0830	Original Super Cover
KT0830M	Original Super Cover Magnesium

## Kit Accessories

QC0090	Bearing Rear Cover
QC0091	Bearing Super Cover
QC0321	Pipe Plug 3/8
QC0321A	Pipe Plug Aluminum 3/8
QC0815	Seal Rear Cover Gasket

## Rear Cover Bolt Kits

KT0460	Original Rear Cover Bolt Kit
QC0114	3/8 x 16 x 4 Bolt
QC0101HD	3/8 Flat Washer Grade 9 Zinc
QC0100	3/8 Lock Washer
KT0465	Original Super Cover Bolt Kit
KT0470	Rear Cover Bolt Kit Frankland III
KT0475	Rear Super Cover Bolt Kit Frankland III



QCW0840-B



QC0840-B



QC0840MC



QC0840M

# Premium Gears

## Frankland Premium Gears

If you are looking for a gear you can count on Frankland's quality premium gears will be sure you are there at the finish line.



Straight Cut



Helical Cut



CL250-101BOX

**Tech Tip:**  
Be sure to check rear cover nut torque after each heat cycle. (18 ft. bls)

SET NO.	TOOTH COUNT	4:11	4:11	4:86	4:86
1	27/27	4.11	4.11	4.86	4.86
1P	35/36	4.22	4.00	4.99	4.74
2W	27/28	4.26	3.96	5.04	4.69
5	22/23	4.31	3.92	5.09	4.64
15	19/20	4.33	3.90	5.12	4.62
26W	27/29	4.41	3.83	5.22	4.52
6	21/23	4.5	3.75	5.32	4.44
6W	22/24	4.47	3.78	5.28	4.47
25	19/21	4.54	3.72	5.37	4.40
12W	26/29	4.58	3.68	5.42	4.36
7	23/26	4.65	3.64	5.49	4.30
7Q	21/24	4.70	3.60	5.55	4.25
17	25/29	4.76	3.55	5.63	4.20
8Q	23/37	4.82	3.50	5.71	4.14
8	22/26	4.86	3.48	5.74	4.11
19	21/25	4.89	3.45	5.79	4.08
9Q	25/30	4.93	3.43	5.83	4.05
9	19/23	4.98	3.40	5.88	4.01
11W	22/27	5.04	3.35	5.96	3.96
3P	21/26	5.09	3.32	6.02	3.93
13	24/30	5.14	3.29	6.08	3.89
18	23/29	5.18	3.26	6.13	3.85
18Q	22/28	5.23	3.23	6.19	3.82
4Q	18/23	5.25	3.22	6.21	3.80
20Q	21/27	5.28	3.20	6.25	3.78
4	24/31	5.32	3.18	6.29	3.76
20	23/30	5.36	3.15	6.34	3.73
22	22/29	5.41	3.12	6.39	3.69
16	18/24	5.48	3.08	6.48	3.65
10	20/27	5.55	3.04	6.56	3.60
34	22/30	5.60	3.01	6.63	3.56
34Q	21/29	5.68	2.98	6.71	3.52
14	23/32	5.71	2.96	6.75	3.50
14Q	20/28	5.75	2.94	6.80	3.47
35	22/31	5.80	2.91	6.86	3.44
32	19/27	5.84	2.89	6.91	3.42
32Q	23/33	5.91	2.86	6.99	3.38
24	20/29	5.96	2.83	7.05	3.35
36	17/25	6.04	2.79	7.15	3.30
37	21/31	6.07	2.78	7.17	3.29
23	22/33	6.17	2.74	7.29	3.24
21	21/32	6.26	2.70	7.41	3.19
27P	15/23	6.29	2.69	7.43	3.18
27	20/31	6.37	2.65	7.53	3.14
43	16/25	6.42	2.63	7.59	3.11
28	19/30	6.46	2.60	7.67	3.08
28Q	22/35	6.53	2.59	7.72	3.06
29	20/32	6.58	2.57	7.78	3.04
39	18/27	6.62	2.55	7.83	3.02
30	16/26	6.68	2.53	7.90	2.99
40	19/31	6.71	2.52	7.93	2.98
41	20/33	6.77	2.50	8.00	2.95
31	18/30	6.85	2.47	8.10	2.92
31C	14/24	7.05	2.40	8.33	2.83
33Q	19/32	6.94	2.44	8.20	2.88
33W	20/34	6.99	2.42	8.26	2.86
30A	15/26	7.12	2.37	8.42	2.80
50Q	16/28	7.19	2.35	8.51	2.78
51Q	17/30	7.25	2.33	8.58	2.75
52Q	18/32	7.31	2.31	8.64	2.73
53Q	14/25	7.34	2.30	8.68	2.72
54Q	15/27	7.40	2.28	8.75	2.70
55Q	16/29	7.45	2.27	8.81	2.68
57Q	16/30	7.71	2.19	9.11	2.59

# Economy Gears

SET NO.	TOOTH COUNT	4:11	4:11	4:86	4:86
1000	27/27	4.11	4.11	4.86	4.86
1037	27/28	4.26	3.96	5.04	4.67
1042	22/23	4.28	3.95	5.06	4.67
1053	19/20	4.33	3.90	5.12	4.62
1074	27/29	4.41	3.83	5.22	4.52
1087	22/24	4.47	3.78	5.28	4.47
1100	19/21	4.52	3.74	5.35	4.42
1115	26/29	4.58	3.68	5.42	4.36
1130	23/26	4.65	3.64	5.49	4.30
1143	21/24	4.70	3.60	5.55	4.25
1160	25/29	4.77	3.54	5.64	4.19
1174	23/27	4.82	3.50	5.71	4.14
1182	22/26	4.86	3.48	5.74	4.11
1190	21/25	4.89	3.45	5.79	4.08
1200	25/30	4.93	3.43	5.83	4.05
1211	19/23	4.98	3.40	5.88	4.01
1227	22/27	5.04	3.35	5.96	3.96
1238	21/26	5.09	3.32	6.02	3.93
1250	24/30	5.14	3.29	6.08	3.89
1261	23/29	5.18	3.26	6.13	3.85
1273	22/28	5.23	3.23	6.19	3.82
1278	18/23	5.25	3.22	6.21	3.80
1286	21/27	5.28	3.20	6.25	3.78
1292	24/31	5.31	3.18	6.28	3.76
1304	23/30	5.34	3.16	6.31	3.74
1316	22/29	5.41	3.12	6.39	3.69
1333	18/24	5.48	3.08	6.48	3.65
1350	20/27	5.56	3.04	6.58	3.59
1364	22/30	5.60	3.01	6.63	3.56
1381	21/29	5.68	2.98	6.71	3.52
1391	23/32	5.72	2.95	6.76	3.49
1400	20/28	5.75	2.94	6.80	3.47
1412	22/31	5.80	2.91	6.86	3.44
1421	19/27	5.84	2.89	6.91	3.42
1438	23/33	5.91	2.86	6.99	3.38
1450	20/29	5.96	2.83	7.05	3.35
1471	17/25	6.04	2.79	7.015	3.30
1476	21/31	6.07	2.75	7.17	3.29
1500	22/33	6.17	2.74	7.29	3.24
1524	21/32	6.26	2.70	7.41	3.19
1533	15/23	6.30	2.68	7.45	3.17
1550	20/31	6.35	2.66	7.51	3.14
1563	16/25	6.42	2.63	7.59	3.11
1579	19/30	6.49	2.60	7.67	3.08
1588	22/35	6.53	2.59	7.72	3.06
1600	20/32	6.58	2.57	7.78	3.04
1611	18/29	6.62	2.55	7.83	3.02
1625	16/26	6.68	2.53	7.90	2.99
1632	19/31	6.71	2.52	7.93	2.98
1647	20/33	6.77	2.50	8.00	2.95
1666	18/30	6.85	2.47	8.10	2.92
1688	19/32	6.94	2.44	8.20	2.88
1700	20/34	6.99	2.42	8.26	2.86
1714	14/24	7.05	2.40	8.33	2.83
1733	15/26	7.12	2.37	8.442	2.80
1750	16/28	7.19	2.35	8.500	2.78

Frankland Economy Gears Made out of 8620 material recommend application under 500 H.P.



## Tech Tip:

Checking your oil level is **CRITICAL**. Too much gear oil is as detrimental to the life of your rear end as having too little. The proper fill level is found by filling to the pipe plug in the rear cover and right side bell.

Oil coolers are recommended in road course circuits and oval track applications that run in excess of 100 laps.

# Miscellaneous Parts

KT0500	Troubleshooter Kit
QC5000	Troubleshooter Adapter
QC5001	Troubleshooter Dial Indicator
QC5002	Troubleshooter Bracket



KT0500

# Frankland Warranty

With Frankland's goal of providing the best product at affordable prices, they continue to guarantee all Frankland manufactured center sections (including Winters Replacement center sections). Frankland will cover any crack or break in the center no matter what the cause. The guarantee will remain effective for one year from the date of purchase.

# Winters Replacement

## Why Buy Winters® Parts From Frankland:

- Winters® Replacement Center has a one year unconditional guarantee
- Frankland manufactures and machines all of the Winters® Replacement parts with the same quality of their own.
- Frankland's fast, friendly and dependable service

## Replacement Parts for Closed Tube

QCW0014M	Winters® Replacement Center Section
QCW0215-2	Winters® Pinion Posi-Lock for Frankland RT Hand Thread
QCW0840M	Winters® Superlite Rear Cover Replacement
QCW090	Winters® Rear Cover Bearing with Snap Ring
QCW090HD	Winters® Bearing Double Row Cover with Snap Ring
QCW290	Winters® Carrier Bearing

## Kits

KTW0840M	Winters® Replacement Rear Cover
KTW0840M-HD	Winters® Replacement Rear Cover w/ HD Bearings
KTW0432	Winters® Replacement Spool w/ Bearings

## Replacement Parts For Open Tube

SPW0014M	Winters® Replacement Center
SPW00253M	Winters® Replacement Side Bell
SPW0005	Winters® Bell Seal
SPW0007	Winters® Sprint Input Replacement Shaft
SPW0007I	Winters® Sprint Input Replacement Shaft Internal
SPW0008	Winters® Stub Shaft
SPW7242	Winters® Internal Seal
SPW7403	Winters® Bell O Ring

## Kits

KTSPW0014M	Winters® Replacement Center Kit
KTSPW00253M	Winters® Sprint Side Bell Conversion Kit
KTSPW001	Winters® Replacement External Shaft Kit
KTSPW004I	Winters® Internal Conversion Kit
KTW0840B	Winters® Billett Rear Cover Replacement With Bearings



QCW0840-B



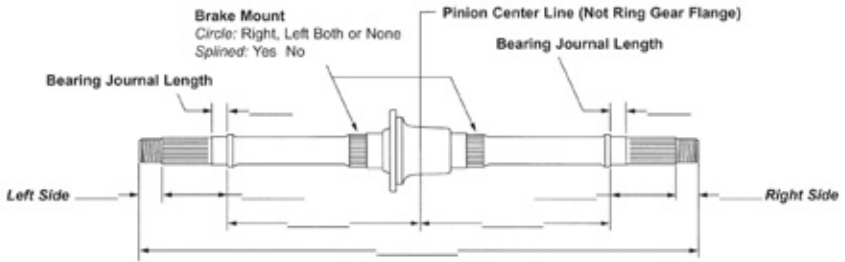
SPW0014



KTSPW0014M

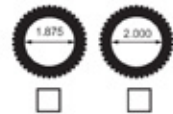


# Axle Set-up



All axles will be made out of aluminum.

Quantity \_\_\_\_\_



Please read and complete the above information carefully. There are various dimensions needed to build an axle. It is essential that we are given the correct information to build your axle properly. Follow the four step process below to insure all blanks are complete.

1. Please verify above information and fill in the blanks.
2. Circle the correct side for brake mount - Left, Right, Both or None. Indicate whether mount is splined or not
3. Mark desired bore.

# Four Step Maintenance

The term maintenance is derived from the word maintain which means to remain unaltered. It's a well known fact that no component on a race car will remain unaltered unless it never leaves the garage, but if you would like to extend the life expectancy of your rear end unit, a regular maintenance schedule is vital.

First - Which lubricate will work best for your application? "Free, Right" No, not always, if your rear end is reaching temperatures in excess of 220 degrees a standard gear lube (meaning non synthetic) is no longer doing the job it needs to. In this case, we recommend using a 80W140 synthetic gear lube such as Mobile One. These lubricants will provide you with cooler running temperatures and better bearing life.

Second - How often does the lubricant need changed? Frankland recommends completely draining and replenishing your rear with fresh oil every 200 laps, Frankland does not recommend reusing contaminated oil. When filling, be sure oil has leveled in both the front and rear cavities of your quick change unit. If you are not sure how much oil your particular unit holds, typically a fill level can be found in the right side bell and the rear cover.

Third - How often do the ring and pinion and bearings need visually inspected? In most applications you would remove the left side bell after 850 laps to clean any sediments which may have settled to the bottom of the unit. Visually inspect the ring and pinion, differential splines, gears, and bearings. Look for scoring, hot spots, and bearing flake. Every time the rear cover is removed; inspect the cover bearings and gasket. Make sure both rear shafts do not have any unusual movement. Contact the Technical Department at Frankland to receive setup procedures, back lash settings and torque specs for your particular unit.

Fourth - The final step in a good maintenance program is accurate record keeping. Write it down, make a check list, do what it takes to make sure your team is in the running when the checkered flag drops.

# Setup Specs

## Set-Up Specs

Pinion Pre-Load 5-10 Inch Lbs.

Total Pre Load 30-40 Inch Lbs.

Backlash .006-.010

Note: All set up specs are taken from the pinion. To make set up easy, Frankland Racing sells a Trouble Shooter Kit (K). It comes with a pinion adapter, dial indicator, and mounting bracket. When ordering, please specify the model of the rear you have.

## Helpful Hints on Set Up

- (1) Purchase a set of set up carrier bearings. The bearings are honed so they can slide on and off your differential making your set up time much faster. Part# QC0289.
- (2) When setting pre-load and backlash, set up the pre-load first.
- (3) Start with an excessive amount of shims on the backlash side (right side) of the differential. This is to prevent a false pre-load reading. A false pre-load reading will occur if there is negative backlash (Negative backlash means that the ring & pinion gears are crushed against each other). Once you have an excessive amount of backlash, continue adding or subtracting shims to the left side of the differential until 30-40 inch lbs. is achieved.
- (4) Once the pre-load is set, start setting the backlash by moving shims from the right side to the left side until .006-.010 of backlash is reached.

While the rear is out of the car and taken apart, inspect all seals and bearings for wear.

## Torque Specs for Bolts

3/8" Bolts 30 foot lbs.

7/16" bolts 40 foot lbs.

## Loaded Pinion Removal

Heat area around the pinion until old pinion unit taps out easily.

## Loaded pinion Installation

Heat the pinion area of the center until loaded ring and pinion drops in easily. Never concentrate heat around the pinion nose bearing.

# Why go Billet



A Billet Rear Cover is helpful in reducing the wear of the gears because it is stronger and has less deflection than a magnesium cover.

## Understanding Thermal Coatings

After testing with some of the top teams in both Dirt Late Model and Outlaw Sprint Car Racing, Frankland Racing Supply offers a heat dissipating coating that really works.

Teams have reported a temperature reduction of 20 to 30 degrees even after a 100 lap race when used with a quality synthetic gear lube, such as Lucas Oil. This is especially important in rears using a gear driven differential.

With the rear being coated on the inside this acts as an oil shedding agent to keep the gear lube level where it needs to be to insure lubrication. This glossy black coating enhances the look of your Frankland Rear. This also helps to protect the magnesium center from harsh chemicals used in track preparation and cleaning your race car.

Frankland also offers a dry film lubricant coating from Calico Coatings for your Ring and Pinion and quick change gears to reduce friction and heat, both of which are power robbers.



# Tech Tips

1. A good "rule of thumb" method for turning your gearing to the desired RPM is this example:

Joe Racer is turning the engine 6000RPM at the end of the straight away, he would like to turn at 6800 at the end of the straight, now he is running a final drive of 5.04. Work the math this way:

$6800 / 6000 = 1.13$   
 $1.13 \times 5.04 = 5.70$   
5.7 would be the gear of choice.

2. If you break a set of quickchange gears, you must check the lowershaft for runout. 3 thousands is maximum.

3. In the heat of action at the race track, everybody always overtightens the rear cover bolts, the proper torque is 18 ft. lbs. for an original. 25 ft. lbs. if you torque a cover using a stud and nut.

## 4. Formula to Compute Final Drive

If apart:

Small gear teeth number divides large gear teeth number equal spur ratio times ring & pinion equals final drive.

Example Set Number 18:  $29 \div 23 = 1.263 \times 4.86 = 6.13$   
 $\frac{\text{Ratio} \times \text{MPH}}{\text{Tire Dia.}} \times 336 = \text{RPM}$        $\frac{\text{RPM} \times \text{Tire Dia.}}{\text{MPH} \times 336} = \text{Ratio}$

If Together:

Mark tire and pinion.

Turn pinion approximately 4.1 turns to 1 turn on the tire = 4:11

Turn pinion approximately 4.9 turns to 1 tire turn = 4:86

5. Beware of the claims by some of the advantages of a so-called light-weight spool. A spool with holes drilled for lightness causes foaming in the gear lube and also adds tremendous drag on the engine.

6. All quickchange gears are matched sets. Never mix them with a gear from another set.

7. It is recommended that you always use at least 3/8 inch breather line on the top of the rear. Run that line up as far as possible and top it with a good breather filter, like a K&N or the equivalent.

8. About once a month, it is good idea to remove your rear cover and use a long, flat aluminum file clean up both edges of the mating surface. This will insure a clean, flat mating surface and guard against leaks.