



Winners Run RICHMOND!

Transmissions

FAQ's

How much oil does the 5-Speed, 5-Speed with Over Drive and 6-Speed hold? Two (2) quarts. Due to the angle of the transmission on some installations, the transmission may hold slightly less than 2 quarts (1.8 - 2 qts.). When oil flows out of the fill hole, let the transmission sit for a few minutes to assure there are no air bubbles in the unit.

How much oil does the 4-Speed hold? 2.4 pints.

How much oil does the 2-Speed hold? 2.4 pints.

What oil should I use in Richmond manual transmissions? Richmond T-Lube, high performance synthetic manual transmission fluid. Richmond T-Lube is designed for extreme load and long duration exposure in high performance manual transmissions. Richmond T-Lube is designed to withstand high heat and provide anti-score protection for high speeds. Red Line 70/90 NS is also acceptable.

What modifications will I need to make when replacing a 4-Speed with a Richmond 6-Speed transmission or the new 5-Speed with Over Drive?

Standard Modifications: move the cross member back 3.75" and lower the cross member approximately 9/16" Cross member modifications will vary with each application. For example, the shifter will be back approximately 1" to 2" from the 4-speed location. Installation procedures can be viewed at www.richmond-gear.com

What modifications will I need to make when replacing a 4-Speed with a Richmond 5-Speed transmission?

Standard Modifications: move the cross member back 2.25" and lower the cross member approximately .38" to .50" Cross member modifications will vary with each application. For example, the shifter will be back approximately 1" to 2" from the 4-speed location. Installation procedures can be viewed at www.richmond-gear.com

What modifications will I need to make when replacing a 4-Speed with the new Richmond 5-Speed with Over Drive transmission?

See 6-Speed installation comments.

What modifications will I need to do to my car when installing a Richmond 4-Speed transmission?

No modifications are required when replacing a factory 4-Speed transmission with Richmond T-10 4-Speed Transmissions.

Does the 6-Speed come with a shifter? Yes. The shifter is manufactured by Long.

Does the 4-Speed and 5-Speed come with a shifter? No. Long shifters are available from Richmond.

Does the 5-Speed with Over Drive come with a shifter? Yes. The shifter is manufactured by Long.

What gear ratios do I need for my car?

Transmission ratios are based off the rear axle ring and pinion ratio. Richmond transmissions are available in a wide range of gear ratios to meet all driving requirements.

Can I install a Richmond Transmission without cutting my tunnel? In most cases, they will fit any car that originally had a 4-Speed.

What is the Richmond Transmission warranty?

The transmission is warranted one year against workmanship and materials defects.

What bell housings do Richmond Transmissions fit (bolt to)?

Richmond Transmissions will fit factory 4-speed or after market bell housings.

What speedometer components do I need for installation? All Richmond Transmissions use T-10 or Muncie 4-Speed components.

Are the T-10 and Muncie components for the speedo the same? Yes, they are the same.

Are different shift handles available? Yes. Richmond recommends the Long shifters; however, some Hurst shifters will also work.

What torque rating does the 5-Speed and 6-Speed have?

Conservatively, the transmission is rated at 450 ft. lb. of torque.

What torque rating does the 4-Speed have?

Conservatively, the transmission is rated at 300-375 ft. lb. of torque depending on the gear ratios selected.

Will the Richmond 6-Speed "power shift" at high RPM's?

Yes, with proper clutch adjustment and bell housing alignment. However, shift characteristics change greatly at 6,500 RPM and higher.

When installing a Richmond Transmission, will I need to shorten my drive shaft? No. The Richmond 4-Speed, 5-Speed and 6-Speed are all the same length as the original 4-speed.

What yoke do I need to use?

All Richmond transmissions use a Turbo 400 Yoke.

What clutch set-up do I need to use?

Factory 4-speed style clutch components.

Does Richmond manufacture the T-10 for Ford Applications?

No. The T-10 is only manufactured for GM applications with the 26 spline input.

What is the difference between the Street 5-Speed Transmission and the Road Race version?

The Road Race version has heavy duty synchronizing assembly and a billet bearing retainer.

What is the difference between the Super T-10 4-Speed and the Super T-10 Plus Road Race Transmission?

The Road Race version has heavy duty synchronizing assembly and a billet bearing retainer.

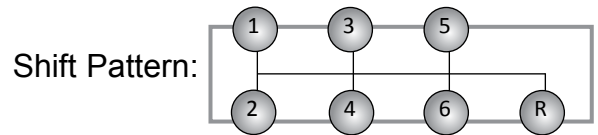
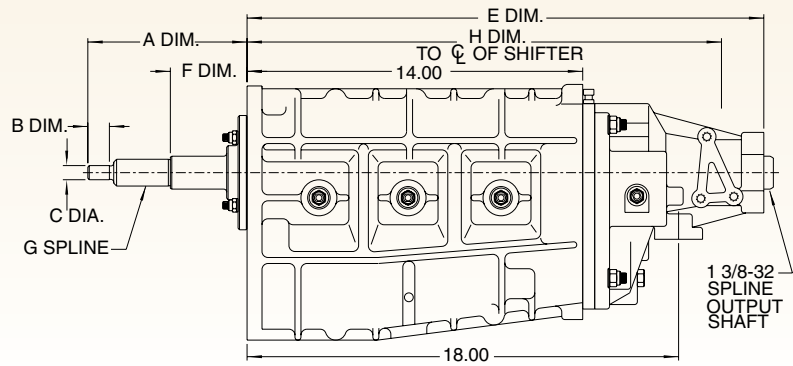
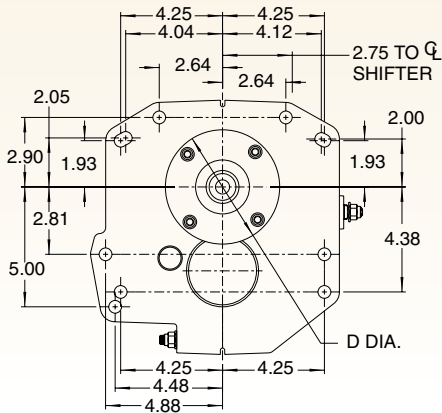


6-Speed Overdrive - ROD



Dimensions

The Richmond Six Speed overdrive transmission was designed with the driving enthusiast in mind. The six speed transmission is assembled in the U.S.A. by American Craftsmen using the latest CNC machining and heat treat. Based on our bullet proof five speed design, the Richmond ROD has another gear-to-grab overdrive!



MOUNTING SPECIFICATION GUIDE

APPLICATION	PART NO.	A DIM.	B DIM.	C DIA.	D DIA.	E DIM.	F DIM.	G SPLINE	H DIM.	J DIM.
Corvette (4)	7071626	6.66	1.06	.590	4.683	23.50	3.22	1-1/8 - 26	22.38	2.63
Ford	7041626	6.49 (1)	1.14 (1)	.668	4.849	24.00	3.83	1-1/8 - 26	20.75	2.00
Ford (7)	7041610	7.18	1.14	.668	4.849	24.00	4.37	1-1/16 - 10	20.75	2.00
Ford T-5 (2)	7081610	7.18	1.14	.668	4.849	24.00	4.37	1-1/16 - 10	20.75	2.00
GM	7021610	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 10	20.75	2.00
GM	7021626	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 26	20.75	2.00
GM T-5 (5)	7051626	6.66	1.06	.590	4.683	24.00	3.22	1-1/8 - 26	23.25	1.50 (3)
GM Truck (6)	7061610	6.66	1.06	.590	5.124	21.57	3.22	1-1/8 - 10	20.75	2.00
Mopar	7031618	8.57	2.54	.748	4.807	24.00	4.28	1-3/16 - 18	20.75	2.00

- (1) For small block engines. For big block engines, cut pilot (B Dim.) by .38.
- (2) 1984 - 1993 (5.0 L) Includes cross member and speedometer hook-up kit. Bellhousing must be replaced with Lakewood p/n 15202, or equivalent. May also use '79 - '83 Mustang V-8 bellhousing.
- (3) Transmission is mounted on a 17 degree angle.
- (4) Corvette 4 + 3 replacement transmission 1984 - 1988. Includes special tailhousing and shifter for torque arm hook-up.
- (5) "F" body T-5 replacement comes with cross member, speedo cable extension and special shifter for torque arm hook-up.
- (6) Uses 5.124 dia. input bearing retainer, GM truck 1968 - Up.
- (7) '78 - '83 (5.0 L) All transmissions include shifter, back-up light switch and wire harness.

Use RICHMOND Transmission Lube Part # TLUBE (pg 126)

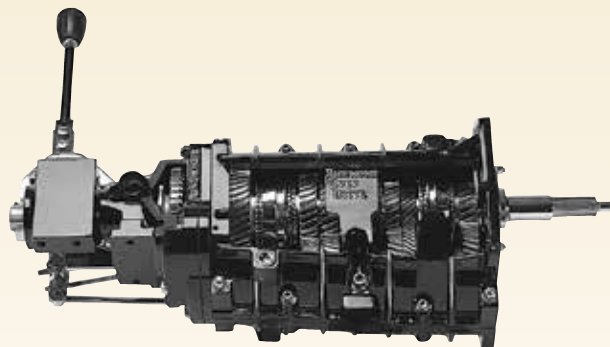
Performance Matched For WINNERS!

Center Distance	3.50 Inches
Oil Capacity	2 U.S Quarts (2-1/2 Quarts = GM T-5 version)
Approximate Dry Weight	108 lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever

6-Speed Overdrive - ROD

Input Sets & Selection Guide

Aided in design with NASCAR proven technology, the Richmond ROD features smooth, positive and fast shifting. Available in multiple gear ratios, the ROD delivers strong, light weight performance. Overdrive ratios are available from .91 to .52. Engineered with a pro-quality approach, the Richmond ROD delivers the strength and performance you expect!



INPUT SETS

	22T/37T INPUT/CLUSTER	27T/31T INPUT/CLUSTER
GM 1-1/8" 26 Spline	4521826 / 5551837	4522827 / 5522531
GM 1-1/8" 10 Spline	4521810 / 5551837	N/A
Ford 1-1/8" 26 Spline	4541826 / 5551837	N/A
Ford 1-1/16" 10 Spline	4541810 / 5551837	N/A
Mopar 1-3/16" 18 Spline	4531818 / 5551837	N/A

TRANSMISSION PART NO. DESCRIPTION

Part no. (7 Digits) + Ratio Letter
 Example 7021610AA
 GM six speed 10 spline
 Input 3.28 1st .76 6th

1ST LETTER = 1ST GEAR RATIO A=3.28

B=4.06

C=4.42 D=3.01
 E=2.77 J=3.04
 K=2.08 L=2.24

2ND LETTER = 6TH GEAR RATIO

A=.76 B=.81
 C=.86 D=.62
 E=.91 G=.59
 H=.52 I=.55

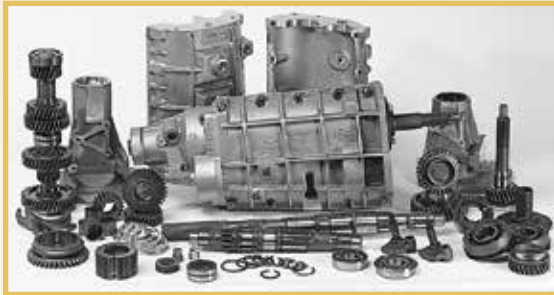
SPECIAL 9 DP ROAD RACE RATIOS

K=.80 L=.84

TRANSMISSION RATIO SELECTION GUIDE

GEAR	TOOTH COUNT	SET RATIO	MASTER DRIVE SET DRIVE RATIO		22/37	27/31
			MAINSHAFT GEAR	CLUSTER GEAR	1.682	1.148
1st	42/16	2.625	1071842	1551516	4.41	3.01
	41/17	2.412	1071841	1551517	4.06	2.77
	39/20	1.950	1071839	1551820	3.28	2.24
	38/21	1.810	1022838	1522821	3.04	2.08
2nd & 3rd	36/22	1.636	2322836	2522822	2.75	1.88
	35/24	1.458	2322835	2522824	2.45	1.67
	33/25	1.320	2371833	2551525	2.22	1.52
	33/26	1.269	2371833	2551826	2.13	1.46
	32/27	1.185	2322832	2522827	1.99	1.36
4th	28/30	0.933	2371528	2551830	1.57	1.07
	25/34	0.735	2460025	2560034	1.24	0.84
5th	30/29	1.034	2460030	2560029	1.74	1.19
					1.00	1.00
6th	24/53	0.453	4112024	5110053	0.76	0.52
	25/52	0.481	4112025	5110052	0.81	0.55
	26/51	0.510	4112026	5110051	0.86	0.59
	27/50	0.540	4112027	5110050	0.91	0.62
Special	25/34	0.735	4112925	5110934	N/A	0.84
	19/40	0.475	4112919	5110940	0.80	N/A





Replacement Parts

For view number see exploded view on page 47.

1ST GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
1	1071842	42/16 Tooth Count
	1071841	41/17 Tooth Count
	1071839	39/20 Tooth Count
	1022838	38/21 Tooth Count

1ST GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
2	1551516	42/16 Tooth Count
	1551517	41/17 Tooth Count
	1551820	39/20 Tooth Count
	1522821	38/21 Tooth Count

2ND & 3RD GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
3 & 4	2322836	36/22 Tooth Count
	2322835	35/24 Tooth Count
	2371833	33/25 Tooth Count
	2371833	33/26 Tooth Count
	2322832	32/27 Tooth Count
	2371528	28/30 Tooth Count

2ND & 3RD GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
6 & 7	2522822	36/22 Tooth Count
	2522824	35/24 Tooth Count
	2551525	33/25 Tooth Count
	2551826	33/26 Tooth Count
	2522827	32/27 Tooth Count
	2551830	28/30 Tooth Count

4TH GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
5	2460025	34/25 Tooth Count
	2460030	29/30 Tooth Count

4TH GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
8	2560034	34/25 Tooth Count
	2560029	29/30 Tooth Count

INPUT SHAFT (5TH DRIVE GEAR)

VIEW #	PART NO.	DESCRIPTION
9	4531818	Mopar 18 Spline 22/37 TC
	4521810	GM 10 Spline 22/37 TC
	4521826	GM 26 Spline 22/37 TC
	4522827	GM 26 Spline 27/31 TC
	4541810	Ford 10 Spline 22/37 TC
	4541826	Ford 26 Spline 22/37 TC

INPUT DRIVE GEAR (5TH CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
10	5551837	22/37 Tooth Count
	5522531	27/31 Tooth Count

6TH GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
11	4112024	24/53 Tooth Count
	4112025	25/52 Tooth Count
	4112026	26/51 Tooth Count
	4112027	27/50 Tooth Count
	4112925	25/34 Tooth Count
	4112919	19/40 Tooth Count

6TH GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
12	5110053	24/53 Tooth Count
	5110052	25/52 Tooth Count
	5110051	26/51 Tooth Count
	5110050	27/50 Tooth Count
	5110934	25/34 Tooth Count
	5110940	19/40 Tooth Count



Transmissions

6-Speed Overdrive - ROD

Replacement Parts (con't)

VIEW #	PART NO.	DESCRIPTION
13	5271922	Reverse Idler Gear
14	6560037	Reverse Mainshaft
15	5260013	Reverse Clustershaft Gear
16	1304093020	Keys (All)
17	4682AJ	Springs (All) (Not Shown)
18	1304091010	Synchro Brass 1-2 & 3-4
19	6460001	Synchro Brass 5-6
20	6151600	Hub 1-2 & 3-4
21	6160002	Hub 5-6
22	1304089006	Slider 1-2 & 3-4
23	6520000	Slider 5-6
24	6591600	Synchro Assem. 1-2 & 3-4
25	6560001	Synchro Assem. 5-6
26	1304096002	Shift Fork 1-2 & 3-4
27	6760000	Shift Fork 5-6
28	T-1024	Shift Fork, Reverse
29	6660001	Shift Arm, Reverse
30	6692012	Shift Arm 1-2
31	6655034	Shift Arm 3-4
32	6660050	Shift Arm 5-6
33	7855112	Input I.D. Bearing
34	7855716	Center Cluster Bearing
35	7855306	Front Cluster Bearing
35A	7855606	Rear Cluster Bearing
36	1000130010	Front & Rear Mainshaft Bearing
37	7871030	Rev. Idler Gear Bearing Assem.
38	7871052	2nd & 3rd Gear Bearing Assem. (Not Shown)
39	7871142	1st Gear Bearing Assem. (Not Shown)
40	7899142	4th Gear Bearing (Not Shown)
41	7880046	6th Gear Bearing (Not Shown)
42	8195086	Bearing Retainer Gasket (All)
43	8225750	Input Seal, Ford & Mopar
	8245625	Input Seal, AMC
44	103565	Taper Pin
45	7168113	Maincase (2) Halves
46	7226000	Tailhousing, GM
	7226001	Tailhousing, GM T-5 Repl. Version
	7246000	Tailhousing, Ford & Mopar
	7246001	Tailhousing, Ford Mustang T-5 Repl.
	7276000	Tailhousing, Corvette 4+3 Repl.
47	7360000	Mid-Plate
48	7561004	Mainshaft, GM
	7546101	Mainshaft, Ford, Mopar & Corvette 4+3 Repl. & GM T-5 Repl.

VIEW #	PART NO.	DESCRIPTION
49	7660005	Clustershaft (All)
50	7760001	Rev. Idler Shaft
51	8358113	Flanged Sleeve, 6th Gear
52	8255132	Tailhousing Seal
53	8358112	Shift Arm Bushings 1-2, 3-4 & 5-6
54	1000127050	Tailhousing Bushing
55	1304110002	Speedo Gear (All)
56	8635307	Front Bearing Retainer, Mopar
	8622911	Front Bearing Retainer, GM
	8625920	Front Bearing Retainer, GM Truck
	8644033	Front Bearing Retainer, Ford
	8644035	Front Bearing Retainer, Ford 78-83 1 1/16 - 10 Input
57	6960000	Detent Kit
58	8060000	Small Parts Kit
59	8260000	Case Plug Kit
60	9060000	Fastener Kit
61	8180050	Tailhousing Gasket
62	8260001	Shifter Arm Seal Kit
63	8358114	Flanged Sleeve, Input (Not Shown)
64	8060009	Snap Ring, 5/6 Hub

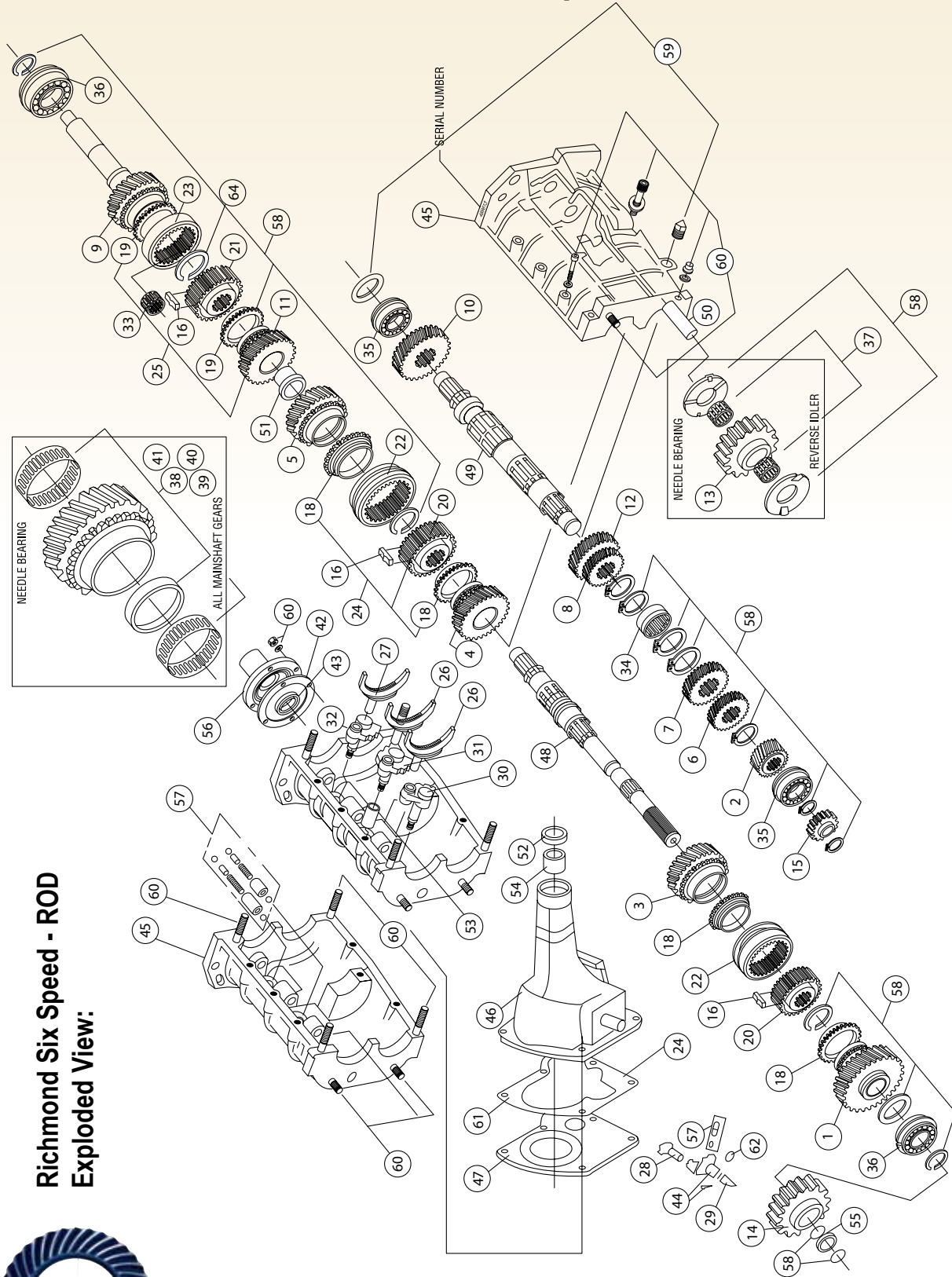
ADDITIONAL ITEMS NOT SHOWN

PART NO.	DESCRIPTION
5980004	Reverse Back-Up Light Switch
5960000	Reverse Back-Up Switch Wire Harness
6360005-21	Ford/GM Speedo Adaptor Kit
6360001	Ford Mustang Crossmember (T-5 replacement only)
6360002	Ford Mustang Crossmember Spacer (used with above)
6360000	GM "F" Body Crossmember (for 6 speed replacement of T-5 transmission only)
HR-6000	"Long" 6 Speed Shifter (all except GM T-5 replacement and Corvette 4+3 replacement)
HR-6002	"Long" 6 Speed Shifter (GM T-5 replacement only)
HR-6003	"Long" 6 Speed Shifter (Corvette 4+3 replacement only)
9260000	Corvette Console Shift Emblem (1968-1976)
9260001	Corvette Console Shift Emblem (1977-1981)
9260002	Corvette "Richmond Over Drive" Console Emblem (1984-1988)
8460000	Speedo Ext. Cable (T-5 replacement)
Sy-1310	Slip Yolk Turbo 400
Sy-1330	Slip Yolk Turbo 400
6-SP 760003P	Breather
8260003-1	Vent



6-Speed Overdrive - ROD

Exploded View



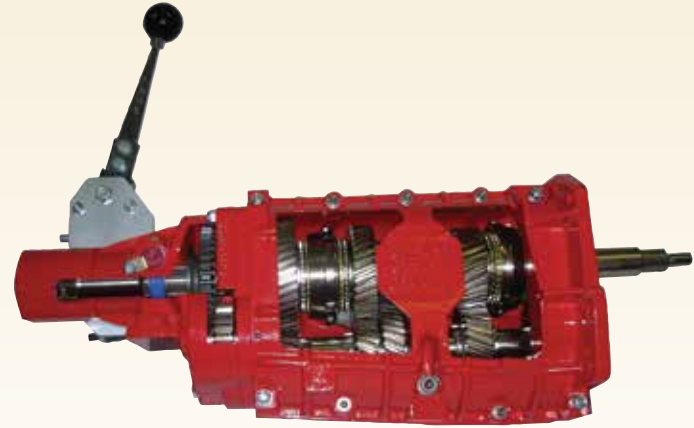
**Richmond Six Speed - ROD
Exploded View:**



NEW Super Street 5-Speed with O.D.

Features

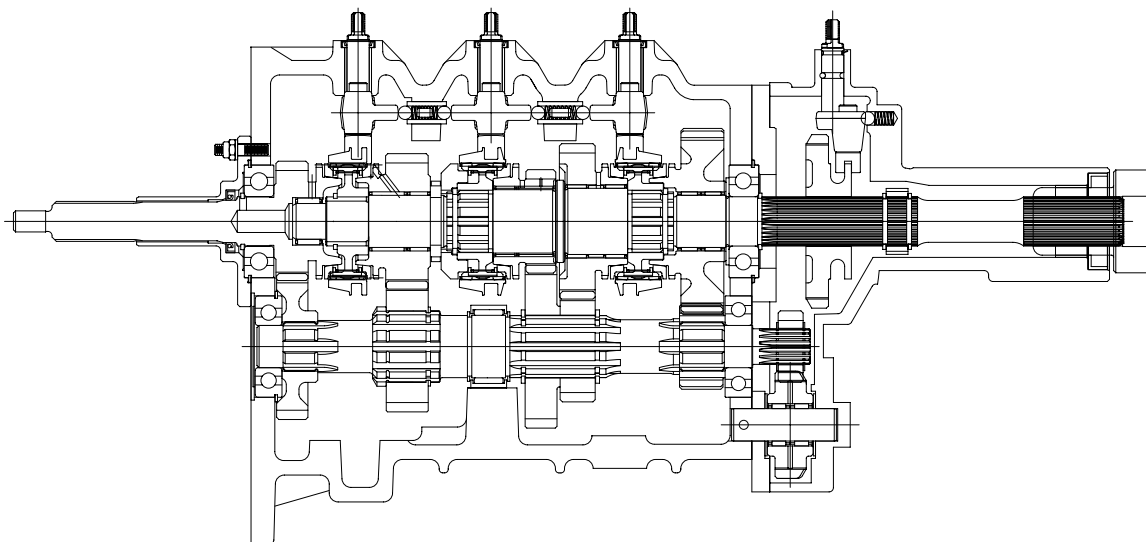
- NEW SUPER STREET 5-Speed with Overdrive
- Fully Rated at 600 ft. lbs. of torque
- Fits GM and Ford applications
- Features a Long Shifter for Performance & Durability



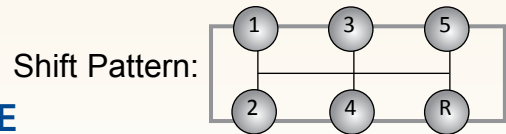
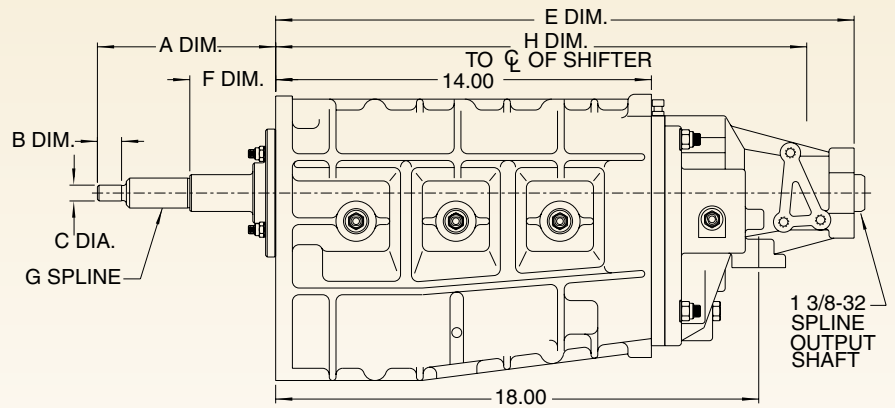
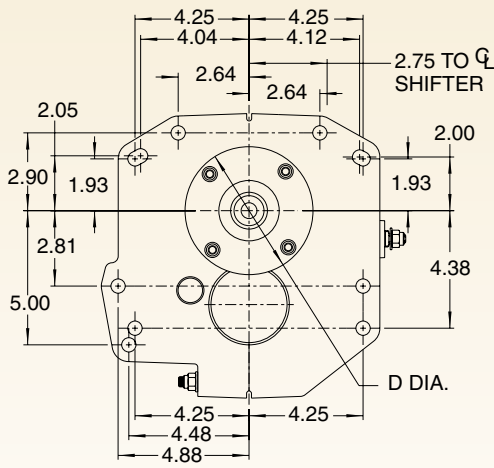
The SUPER STREET 5-Speed with Overdrive is the newest addition to the Richmond line of **Bullet Proof** transmissions. The SUPER STREET is fully rated at **600 ft. lbs. of torque** to confidently handle the demands of street performance, hot rods, muscle car, racing and other high performance applications.

Based on the successful Richmond NASCAR-type design and technology, the SUPER STREET is manufactured in the USA by skilled craftsmen using the best in CNC machining, gear cutting technology and race-proven in house treating. The transmission is built on the successful and dependable Richmond manual transmission housing. The design allows for more robust gears and components to give you the torque handling capacity higher horsepower cars require.

The SUPER STREET transmission comes complete with a Long Shifter for the ultimate in shift performance and durability. Designed to fit GM and Ford applications, the Richmond SUPER STREET is the answer for the performance enthusiasts who know that **"Winners Run RICHMOND!"**



NEW Super Street 5-Speed with O.D.



PART NUMBER AND MOUNTING SPECIFICATION GUIDE

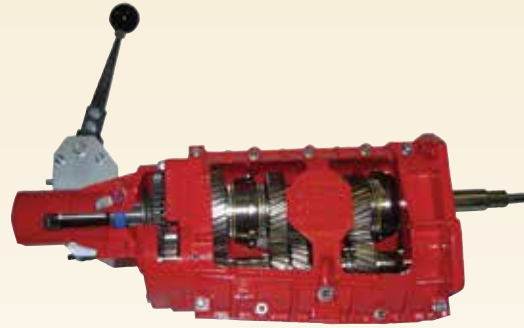
APPLICATION	PART NO.	A DIM.	B DIM.	C DIA.	D DIA.	E DIM.	F DIM.	G SPLINE	H DIM.	J DIM.
GM 3.33 10-Spline*	7020510A	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
GM 2.89 10-Spline*	7020510B	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
GM 3.06 10-Spline*	7020510C	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
GM 3.33 26-Spline*	7020526A	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
GM 2.89 26-Spline*	7020526B	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
GM 3.06 26-Spline*	7020526C	6.66	1.06	0.59	4.683	21.57	3.22	1 1/8-10	20.75	2.00
Ford 3.33 10-Spline*	7040510A	7.18	1.14	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
Ford 2.89 10-Spline*	7040510B	7.18	1.14	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
Ford 3.06 10-Spline*	7040510C	7.18	1.14	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
Ford 3.33 26-Spline*(2)	7040526A	6.49	1.14	0.668	4.849	24.00	3.83	1 1/8-26	20.75	2.00
Ford 2.89 26-Spline*(2)	7040526B	6.49	1.14	0.668	4.849	24.00	3.83	1 1/8-26	20.75	2.00
Ford 3.06 26-Spline*(2)	7040526C	6.49	1.14	0.668	4.849	24.00	3.83	1 1/8-26	20.75	2.00
5.0 Mustang 3.33 (T-5), 10-Spline*(1)	7080510A	7.18	1.17	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
5.0 Mustang 2.89 (T-5), 10-Spline*(1)	7080510B	7.18	1.17	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
5.0 Mustang 3.06 (T-5), 10-Spline*(1)	7080510C	7.18	1.17	0.668	4.849	24.00	4.37	1 1/16-10	20.75	2.00
Corvette 3.33 26-Spline*	7070526A	6.66	1.06	0.59	4.683	23.50	3.22	1 1/8-26	22.38	2.00
Corvette 2.89 26-Spline*	7070526B	6.66	1.06	0.59	4.683	23.50	3.22	1 1/8-26	22.38	2.00
Corvette 3.06 26-Spline*	7070526C	6.66	1.06	0.59	4.683	23.50	3.22	1 1/8-26	22.38	2.00
GM 3.33 T-5*(3)	7050526A	6.66	1.06	0.59	4.683	24.00	3.22	1 1/8-26	23.25	1.50
GM 3.89 T-5*(3)	7050526B	6.66	1.06	0.59	4.683	24.00	3.22	1 1/8-26	23.25	1.50
GM 3.06 T-5*(3)	7050526C	6.66	1.06	0.59	4.683	24.00	3.22	1 1/8-26	23.25	1.50
MOPAR 3.33 18-Spline	7030518A	8.75	2.54	0.748	4.807	24.00	4.28	1 1/316-18	20.75	2.00
MOPAR 2.89 18-Spline	7030518B	8.75	2.54	0.748	4.807	24.00	4.28	1 1/316-18	20.75	2.00
MOPAR 3.06 18-Spline	7030518C	8.75	2.54	0.748	4.807	24.00	4.28	1 1/316-18	20.75	2.00

* With Long Shifter

- (1) 1984-1993 (5.0L) includes cross member and speedometer hook-up kit. Bellhousing must be replaced with Lakewood part # 15202, or equivalent. A 1979-1983 Mustang V-8 bellhousing may also be used
- (2) For small block engines. For big block engines, cut pilot (B dimension) by 0.38".
- (3) "F" body T-5 transmission comes with cross member, speedocable extension and special shifter for torque are hook-up



Input Sets & Selection Guide



INPUT SETS

	26/33 INPUT/CLUSTER
GM 1-1/8" 26 Spline	4520526 / 5550533
GM 1-1/8" 10 Spline	4520510 / 5550533
Ford 1-1/8" 26 Spline	4540526 / 5550533
Ford 1-1/16" 10 Spline	4540510 / 5550533
Mopar 1-3/16" 18 Spline	4530518 / 5550533

TRANSMISSION PART NO. DESCRIPTION

Part no. (7 Digits) + Ratio Letter
Example 7020510A
 GM five speed 10 spline
 Input 3.33 or 7020510B

TRANSMISSION RATIO SELECTION GUIDE

			MASTER DRIVE SET DRIVE RATIO		26/33 1.269
GEAR	TOOTH COUNT	SET RATIO	MAINSHAFT GEAR	CLUSTER GEAR	RATIO
1st	42/16	2.625	1050542	1550516	3.33
	41/18	2.277	1050541	1550518	2.89
	41/17	2.411	1051541	1550517	3.06
2nd	35/24	1.458	2350535	2550524	1.85
3rd	30/29	1.034	2350530	2550529	1.31
4th	—	—	—	—	1.00
5th	22/36	.611	4150522	5150536	0.77

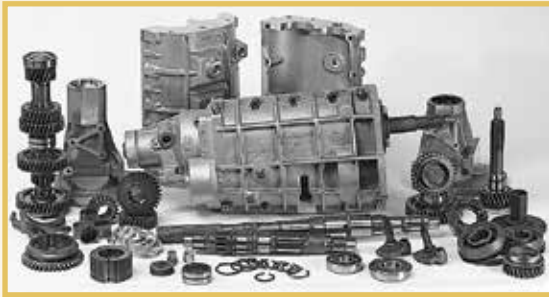
Use RICHMOND Transmission Lube Part # TLUBE (pg 126)

Performance Matched For WINNERS!

Center Distance	3.50 Inches
Oil Capacity	2 U.S Quarts
Approximate Dry Weight	106.5 lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever



NEW Super Street 5-Speed with O.D.



Replacement Parts

For view number see drawing on page 53.

1ST GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
1	1050542	42/16 Tooth Count
	1050541	41/18 Tooth Count
	1051541	41/17 Tooth Count

1ST GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
2	1550516	42/16 Tooth Count
	1550518	41/18 Tooth Count
	1550517	41/17 Tooth Count

2ND & 3RD GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
3 & 5	2350535	35/24 Tooth Count
	2350530	30/29 Tooth Count

2ND & 3RD GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
6 & 8	2550524	35/24 Tooth Count
	2550529	30/29 Tooth Count

OVERDRIVE GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
4	4150522	22/36 Tooth Count

OVERDRIVE GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
7	5150536	22/36 Tooth Count

INPUT SHAFT

VIEW #	PART NO.	DESCRIPTION
9	4520510	26/33
	4520526	26/33
	4540510	26/33
	4540526	26/33

INPUT DRIVE GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
10	5550533	26/33



Replacement Parts (con't)

For view number see drawing on page 53.

VIEW #	PART NO.	DESCRIPTION	VIEW #	PART NO.	DESCRIPTION
13	5271922	Reverse Idler Gear	51	6350005	Retainer O.D.
14	6560037	Reverse Mainshaft	52	8255132	Tailhousing Seal
15	5260013	Reverse Clustershaft Gear	53	8358112	Shift Arm Bushings 1-2, 3-4 & 5
16	1304093020	Keys (All)	54	1000127050	Tailhousing Bushing
17	4682AJ	Springs (All) (Not Shown)	55	1304110002	Speedo Gear (All)
18	1304091010	Synchro Brass 1-2 & O.D.	56	8622911	Front Bearing Retainer, GM (26T)
19	6460001	Synchro Brass 3 & 4		8644033	Front Bearing Retainer, Ford (26T)
20	6151600	Hub 1-2 & O.D.		8644035	Front Bearing Retainer, Ford (10T)
21	6150000	Hub 3 & 4		8635307	Front Bearing Retainer, Mopar (18T)
22	1304089006	Slider 1-2 & O.D.	57	6960000	Detent Kit
23	6520000	Slider 3 & 4	58	8060000	Small Parts Kit
24	6591600	Synchro Assem. 1-2	59	8260000	Case Plug Kit
25	6560002	Synchro Assem. 3 & 4		8260003P	Breather Assembly
26	1304096002	Shift Fork 1-2 & O.D.	60	9060000	Fastener Kit
27	6760000	Shift Fork 3 & 4	61	8180050	Tailhousing Gasket
28	T-1024	Shift Fork, Reverse	62	8260001	Shifter Arm Seal Kit
29	6660001	Shift Arm, Reverse	70	7899054	Overdrive Gear Bearing
30	6692012	Shift Arm 1-2	71	7899053	Overdrive Bearing
31	6650005	Shift Arm O.D.	72	8071400	Thrust Collar
32	6660050	Shift Arm 3 & 4	73	6350006	Thrust Ring Sleeve
33	7855112	Input I.D. Bearing	74	7899442	3rd Gear Bearing
34	7855716	Center Cluster Bearing	75	7855606	Rear Cluster Bearing
35	7855306	Front Cluster Bearing	76	6591601	Synchro Assy OD
36	1000130010	Front & Rear Mainshaft Bearing			
37	7871030	Rev. Idler Gear Bearing Assem.			
38	7871052	2nd Gear Bearing Assem. (Not Shown)			
39	7871142	1st Gear Bearing Assem. (Not Shown)			
40	7899142	3rd Gear Bearing			
42	8195086	Bearing Retainer Gasket (All)			
43	8225750	Input Seal, Ford, GM & Mopar			
	8245625	Input Seal, AMC			
44	103565	Taper Pin			
45	7168113	Maincase (2) Halves			
46	7226000	Tailhousing, GM			
	7246000	Tailhousing, Ford & Mopar			
	7276000	Tailhousing, Vette 4+3			
	7246001	Tailhousing, Mustang T-5 Rep.			
	7226001	Tailhousing, GM "F" Body, T-5 Rep.			
47	7360000	Mid-Plate			
48	7520532	Mainshaft, GM			
	7540532	Mainshaft, Ford, Mopar, Vette 4+3, GM T-5 Rep.			
49	7650000	Clustershaft (All)			
50	7760001	Rev. Idler Shaft			

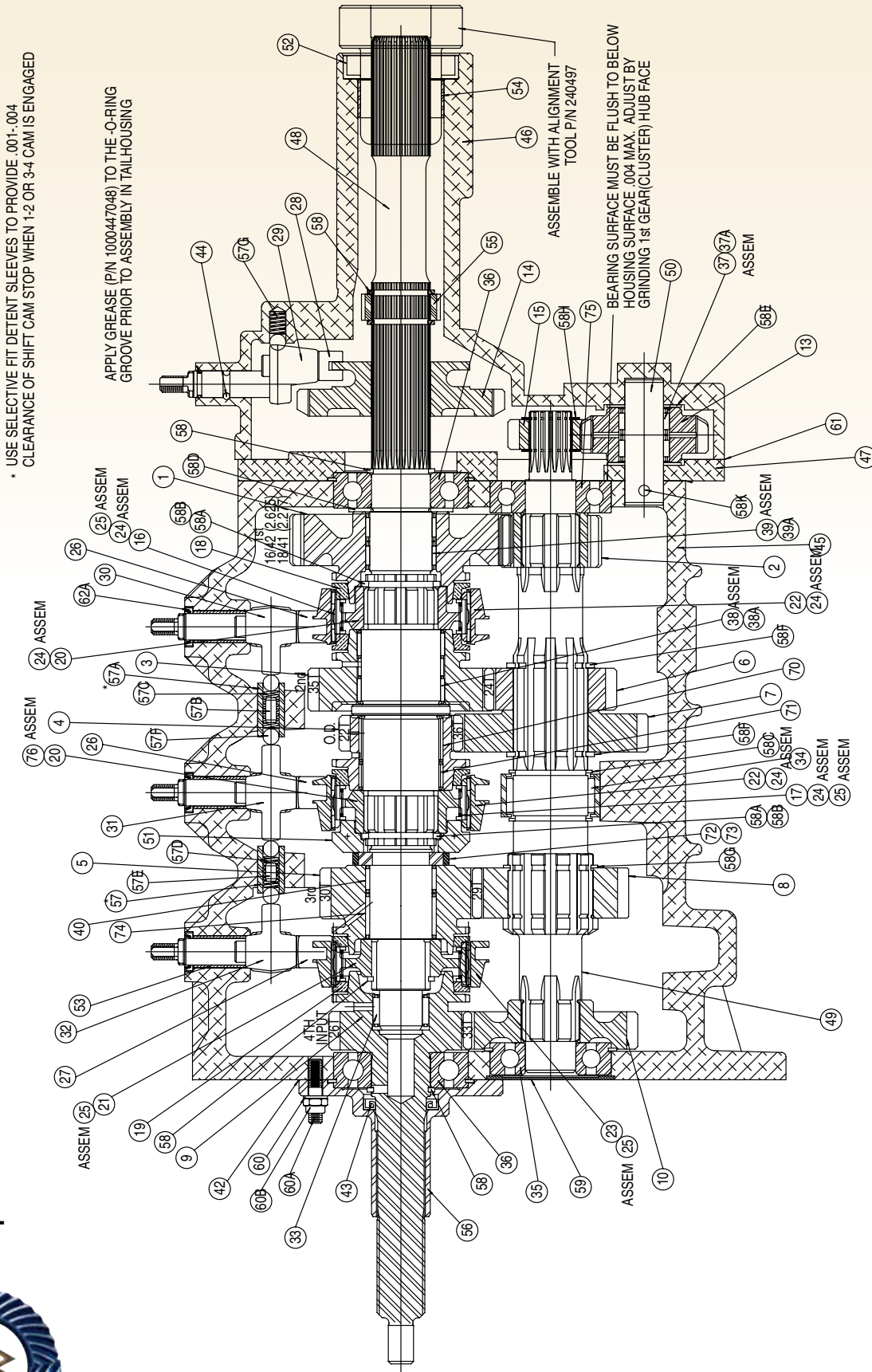
ADDITIONAL ITEMS NOT SHOWN

PART NO.	DESCRIPTION
5980004	Reverse Back-Up Light Switch
5960000	Reverse Back-Up Switch Wire Harness
6360005-21	Ford/GM Speedo Adaptor Kit
15202	Ford Mustang "Lakewood" Steel Bellhousing (for T-5 replacement only with Richmond 5 or 6 speed)
Sy-1310	Slip Yoke Turbo 400
Sy-1330	Slip Yoke Turbo 400
6-SP 760003P	Breather
8260003-1	Vent
3630001	Ford Mustang Crossmember (T-5 replacement only)
9060026	Screw (Mustang T-5 replacement)
6360000	GM "F" Body Crossmember (T-5 replacement only)
6360002	Crossmember Spacer (Mustang T-5 replacement)
HR5000-0	5-Speed Shifter - All except GM T-5 replacement and Vette 4+3
HR5002-0	5-Speed Shifter (GM T-5 replacement only)
HR5003-0	5-Speed Shifter (Vette 4+3 replacement)



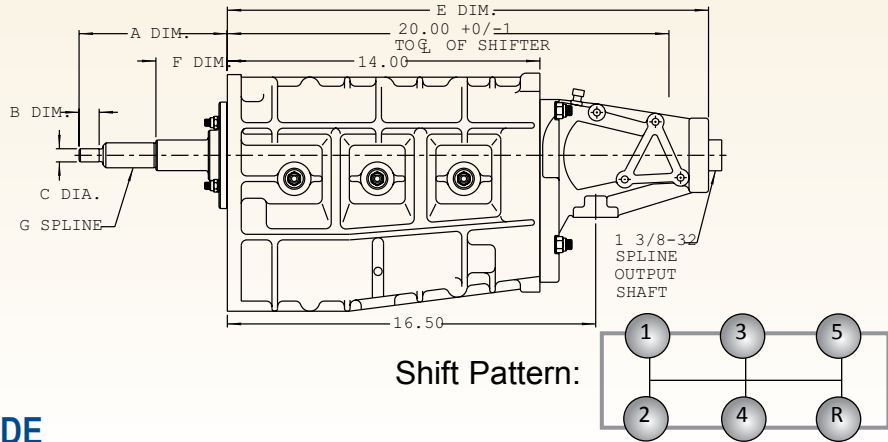
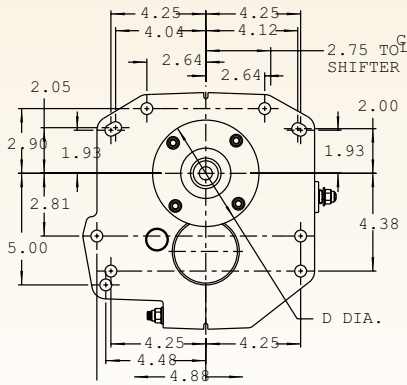
NEW Super Street 5-Speed with O.D.

Richmond Super Street Five Speed with Overdrive Exploded View:



Dimensions, Input Sets & Selection Guide

The Richmond Street Five Speed transmission delivers the ultimate blend of performance and economy. Utilization of four extra low gear ratios provide dramatic improvements in acceleration, while a 1:1 fifth gear allows maintenance of original fuel economy.



MOUNTING SPECIFICATION GUIDE

APPLICATION	PART NO.	A DIM.	B DIM.	C DIA.	D DIA.	E DIM.	F DIM.	G SPLINE
Ford	7041710	6.49*	1.14*	.668	4.849	24.00	3.83	1-1/8 - 26
Ford**	7041711	7.18	1.14	.668	4.849	24.00	4.37	1-1/16 - 10
GM	7021710	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 26
GM	7021711	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 10
GM Truck	7061710	6.66	1.06	.590	5.124	21.57	3.22	1-1/8 - 10
GM Truck	7061726	6.66	1.06	.590	5.124	21.57	3.22	1-1/8 - 26
Mopar	7031710	8.57	2.54	.748	4.807	24.00	4.28	1-3/16 - 18

* For small block engines. For big block, cut pilot (B Dim.) by .38
 ** '78 - '83 (5.0 L)

TRANSMISSION RATIO SELECTION GUIDE

PART NO.	DESCRIPTION	SPLINE	1ST	2ND	3RD	4TH	5TH	REV.	TORQUE
7021710-A	GM 1-1/8	26	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7021711-A	GM 1-1/8	10	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7031710-A	Mopar 1-3/16	18	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7041710-A	Ford 1-1/8	26	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7041711-A	Ford 1-1/16	10	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7061726-A	GM Truck 1-1/8	26	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
7061710-A	GM Truck 1-1/8	10	3.28	2.13	1.57	1.24	1.00	4.79	450 FP
Part No. - B			4.06	2.22	1.57	1.24	1.00	4.79	400 FP
Part No. - C			4.41	2.22	1.57	1.24	1.00	4.79	373 FP

Center Distance	3.50 Inches
Oil Capacity	2 U.S Quarts
Approximate Dry Weight	95 lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever

INPUT SETS

	SPLINE	22T/37T INPUT/CLUSTER
GM 1-1/8"	26	4521826 / 5551837
GM 1-1/8"	10	4521810 / 5551837
Ford 1-1/8"	26	4541826 / 5551837
Ford 1-1/16"	10	4541810 / 5551837
Mopar 1-3/16"	18	4531818 / 5551837

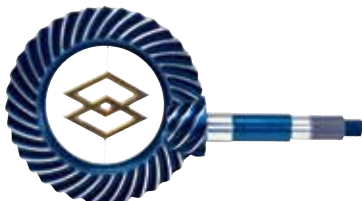




Replacement Parts

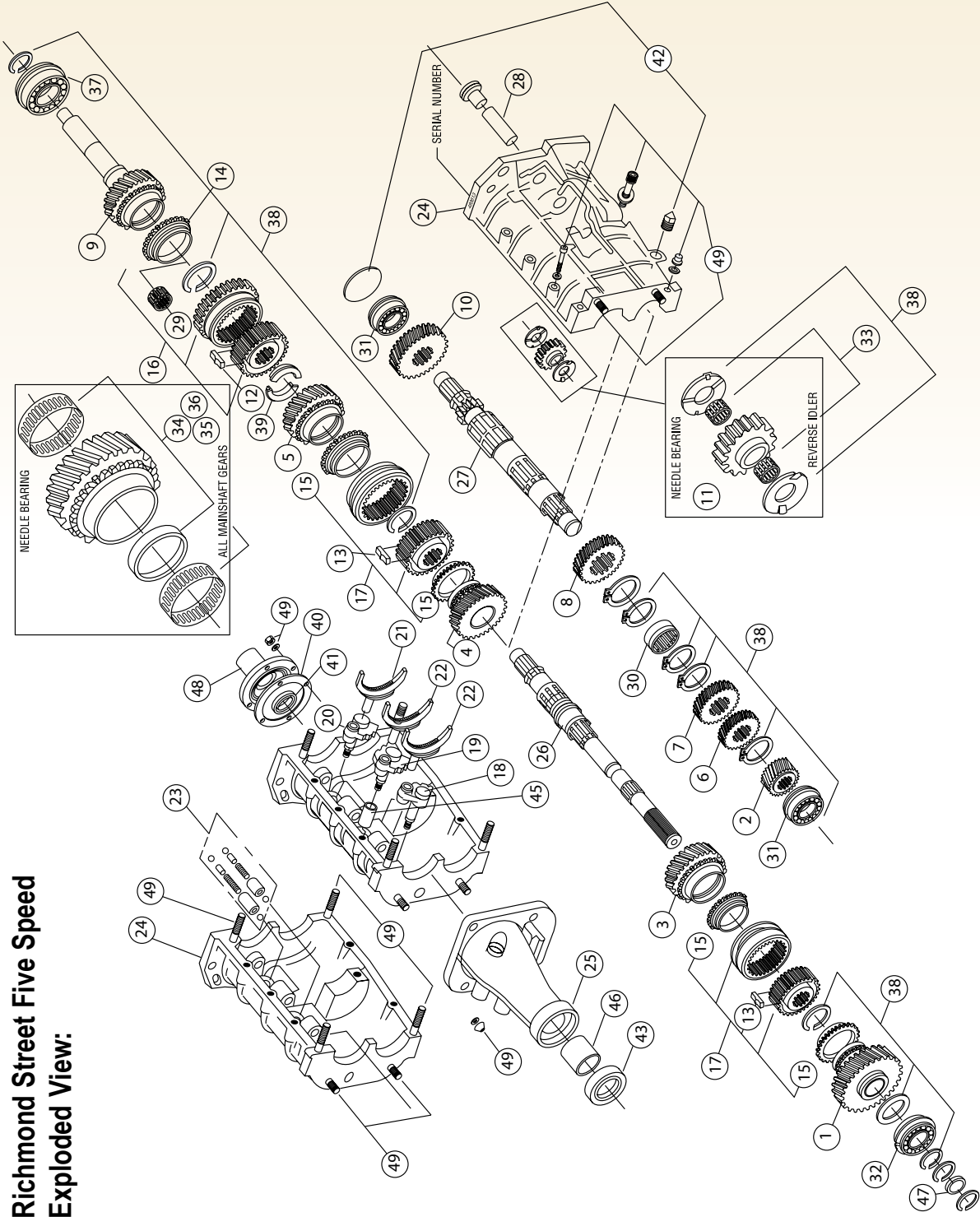
For view number see exploded view on page 56.

VIEW #	PART NO.	DESCRIPTION	VIEW #	PART NO.	DESCRIPTION
1	1071839	1st Gear Mainshaft 3.28 A Ratio	26	7571532	Mainshaft GM
	1071841	1st Gear Mainshaft 4.06 B Ratio		7572203	4WD Main Shaft
	1071842	1st Gear Mainshaft 4.41 C Ratio	27	7651010	Cluster Shaft
2	1551820	1st Gear Cluster 3.28 A Ratio	28	7774115	Shaft Reverse Idler
	1551517	1st Gear Cluster 4.06 B Ratio	29	7855112	Input ID Bearing
	1551516	1st Gear Cluster 4.41 C Ratio	30	7855716	Center Cluster Bearing
3	2371833	2nd Gear Mainshaft	31	7855306	Rear Cluster Bearing
4	2371528	3rd Gear Mainshaft	31A	7855605	Front Cluster Bearing
5	2471825	4th Gear Mainshaft	32	1000130010	Rear Output Bearing
6	2551525	2nd Gear Cluster B & C Ratio	33	7871030	Rev. Gear Bearing Assembly
	2551826	2nd Gear Cluster A Ratio	34	7871052	2nd & 3rd Gear Bearing Assembly (Not Shown)
7	2551830	3rd Gear Cluster	35	7871142	1st Gear Bearing Assembly (Not Shown)
8	2551834	4th Gear Cluster	36	7899442	4th Gear Bearing Assembly (Not Shown)
9	4521826	Input 26 Spline GM	37	1000130010	Input Bearing
	4531818	Input 18 Spline Mopar	38	8051500	Small Parts Kit
	4541826	Input 26 Spline Ford	39	8071400	Split Thrust Collar 4th Bearing
	4541810	Input 10 Spline Ford 78-83	40	8195086	Bearing Retainer Gasket (All)
11	5271922	Rev. Idler Gear	41	8225750	Input Seal, GM, Ford, Mopar
10	5551837	5th Gear Cluster	42	8251500	Case Plug Kit
12	6251500	Keys & Springs 5-REV	43	8255132	Extension Housing Seal
13	6291034	Keys & Springs 1-2-3-4	44	T90A108	Shifting Arm Seals (3 req.'d.)(Not Shown)
14	6451500	Synchro Brass 5-REV	45	8358112	Shift Arm Bushings
15	1304091002	Synchro Brass 1-2 & 3-4	46	1000127050	Extension Housing Bushing
16	6571837	5-REV Synchro Assembly		8380008	Extension Housing Bushing 9/85 & Newer
16 Alt.	6591700	5-REV Synchro Assy-1 New Bullet Proof	47	1304110002	Speedo Gear (All)
17	6591510	Synchro Assembly 1-2-3-4	48	8624911	Front Bearing Retainer, GM
17 Alt.	6591600	Synchro Assy 1-2-3-4 New Bullet Proof		8625920	Front Bearing Retainer, GM Truck
18	6692012	1-2 Shift Arm		8635307	Front Bearing Retainer, Mopar
19	6655034	3-4 Shift Arm		8644033	Front Bearing Retainer, Ford
20	6691034	5-REV Shift Arm		8644035	Front Bearing Retainer, Ford 78-83
21	6751550	Shift Fork 5-REV	49	9055500	Fastener Kit
22	1304096002	Shift Fork		HN1000	Shifter (Long)
23	6951500	Detent Kit		HN1002	Shifter (Long) 82-90 "F" Body
24	7158113	Main Case (2 Halves)		Sy-1310	Slip Yoke Turbo 400
	7158114	Main Case (2 Halves) 4 WD		Sy-1330	Slip Yoke Turbo 400
25	7221003	Extension Housing GM			
	7241003	Extension Housing Ford & Mopar			
	7252203	4WD Adapter Plate			
26	7541532	Mainshaft Ford & Mopar			



Transmissions

Street 5-Speed Exploded View



Richmond Street Five Speed
Exploded View:

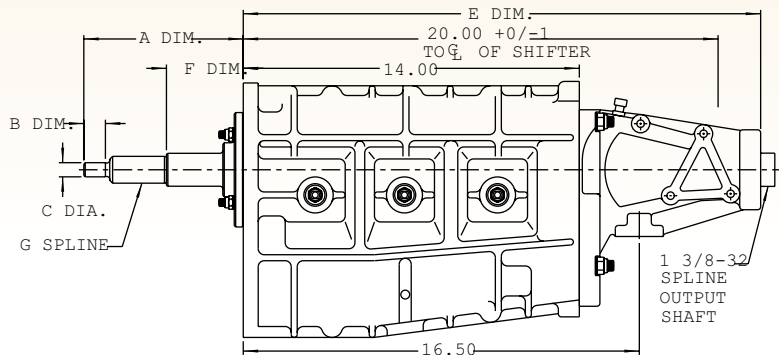
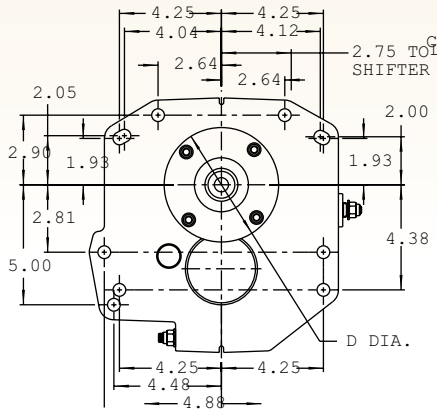


5-Speed Road Race

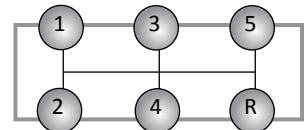
Dimensions



The Richmond Road Race Five Speed transmission is designed for the specific requirements of the road racer. The five speed transmission is assembled in the U.S.A. by American Craftsmen using the latest CNC machining and heat treat. This transmission features NASCAR proven road race style brass and a steel billet front bearing retainer for strength. Available in a wide variety of ratios, this transmission has tremendous torque multiplication and easy serviceability. Fully synchronized for smooth shifting, this five speed meets the challenge of demanding shifting of the road racer!



Shift Pattern:



MOUNTING SPECIFICATION GUIDE

APPLICATION	PART NO.	A DIM.	B DIM.	C DIA.	D DIA.	E DIM.	F DIM.	G SPLINE
Ford	7042726	6.49*	1.14*	.668	4.849	24.00	3.83	1-1/8 - 26
Ford**	7042710	7.18	1.14	.668	4.849	24.00	4.37	1-1/16 - 10
GM	7022726	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 26
GM	7022710	6.66	1.06	.590	4.683	21.57	3.22	1-1/8 - 10
GM Truck	7062710	6.66	1.06	.590	5.124	21.57	3.22	1-1/8 - 10
GM Truck	7062726	6.66	1.06	.590	5.124	21.57	3.22	1-1/8 - 26
Mopar	7032718	8.57	2.54	.748	4.807	24.00	4.28	1-3/16 - 18

* For small block engines. For big block, cut pilot (B Dim.) by .38

** '78 - '83 (5.0 L)

Center Distance 3.50 Inches
 Oil Capacity 2 U.S Quarts
 Approximate Dry Weight 95 lbs.
 Case & Extension Housing Aluminum
 Controls Side Lever

Use RICHMOND
 Transmission Lube
 Part # TLUBE (pg 126)



Performance Matched For
 WINNERS!





Selection Guide & Input Sets

INPUT SETS

	22T/37T INPUT/CLUSTER	27T/31T INPUT/CLUSTER
GM 1-1/8" - 26 Spline	4521826 / 5551837	4522827 / 5522531
GM 1-1/8" - 10 Spline	4521810 / 5551837	N / A
Ford 1-1/8" - 26 Spline	4541826 / 5551837	N / A
Ford 1-1/16" - 10 Spline	4541810 / 5551837	N / A
Mopar 1-3/16" - 18 Spline	4531818 / 5551837	N / A

TRANSMISSION RATIO SELECTION GUIDE

			MASTER DRIVE SET		22/37	27/31
			DRIVE RATIO		1.682	1.148
GEAR	TOOTH COUNT	SET RATIO	MAINSHAFT GEAR	CLUSTER GEAR	RATIO	
1st	42/16	2.625	1071842	1551516	4.41	3.01
	41/17	2.412	1071841	1551517	4.06	2.77
	39/20	1.950	1071839	1551820	3.28	2.24
	38/21	1.810	1022838	1522821	3.04	2.08
2nd & 3rd	36/22	1.636	2322836	2522822	2.75	1.88
	35/24	1.458	2322835	2522824	2.45	1.67
	33/25	1.320	2371833	2551525	2.22	1.52
	33/26	1.269	2371833	2551826	2.13	1.46
	32/27	1.185	2322832	2522827	1.99	1.36
4th	28/30	0.933	2371528	2551830	1.57	1.07
	25/34	0.735	2471825	2551834	1.24	0.84
	28/31	0.903	2422828	2522831	1.52	1.04
5th	30/29	1.034	2422830	2522829	1.74	1.19
					1.00	1.00





Replacement Parts

For view number see exploded view on page 61.

1ST GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
1	1071842	42/16 Tooth Count
	1071841	41/17 Tooth Count
	1071839	39/20 Tooth Count
	1022838	38/21 Tooth Count

1ST GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
2	1551516	42/16 Tooth Count
	1551517	41/17 Tooth Count
	1551820	39/20 Tooth Count
	1522821	38/21 Tooth Count

2ND & 3RD GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
3 & 4	2322836	36/22 Tooth Count
	2322835	35/24 Tooth Count
	2371833	33/25 Tooth Count
	2371833	33/26 Tooth Count
	2322832	32/27 Tooth Count
	2371528	28/30 Tooth Count

2ND & 3RD GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
6 & 7	2522822	36/22 Tooth Count
	2522824	35/24 Tooth Count
	2551525	33/25 Tooth Count
	2551826	33/26 Tooth Count
	2522827	32/27 Tooth Count
	2551830	28/30 Tooth Count

4TH GEAR (MAINSHAFT)

VIEW #	PART NO.	DESCRIPTION
5	2471825	25/34 Tooth Count
	2422828	28/31 Tooth Count
	2422830	30/29 Tooth Count

4TH GEAR (CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
8	2551834	25/34 Tooth Count
	2522831	28/31 Tooth Count
	2522829	30/29 Tooth Count

INPUT SHAFT (5TH DRIVE GEAR)

VIEW #	PART NO.	DESCRIPTION
9	4521826	22/37 T/C GM 1-1/8" 26 Spline
	4522827	27/31 T/C GM 1-1/8" 26 Spline
	4521810	22/37 T/C GM 1-1/8" 10 Spline
	4541826	22/37 T/C Ford 1-1/8" 26 Spline
	4541627	27/31 T/C Ford 1-1/8" 26 Spline
	4541810	22/37 T/C Ford 1-1/16" 10 Spline
	4531818	22/37 T/C Mopar 1-3/16" 18 Spline

INPUT GEAR (5TH CLUSTERSHAFT)

VIEW #	PART NO.	DESCRIPTION
10	5551837	22/37 Tooth Count
	5522531	27/31 Tooth Count



Transmissions

5-Speed Road Race

Replacement Parts (con't)

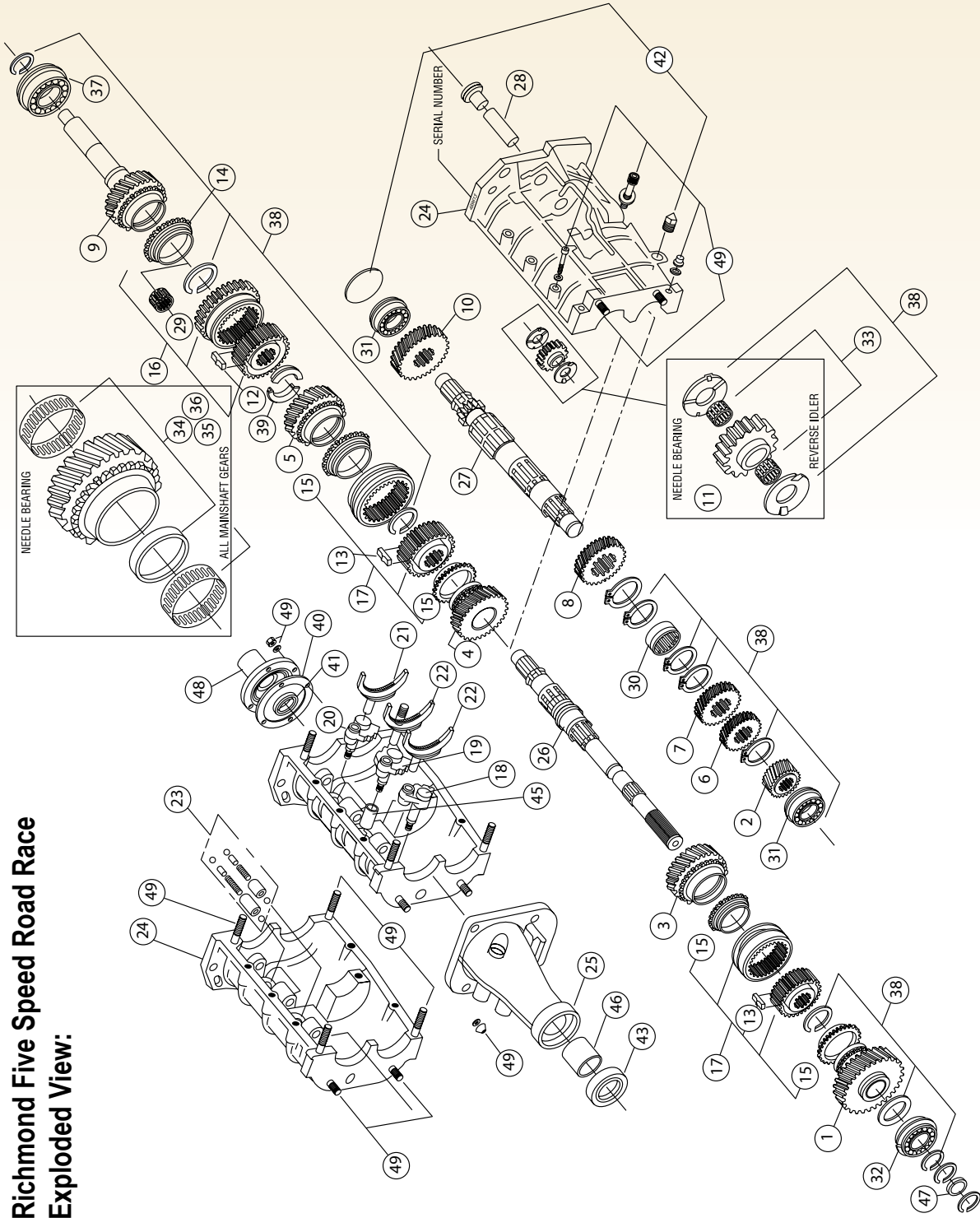
VIEW #	PART NO.	DESCRIPTION
11	5271922	Rev. Idler Gear
12	6251500	Keys & Springs 5-REV
13	1304093020	Keys 1-2-3-4
14	4682AJ	Spring 1-2 & 3-4 ((Not Shown))
15	1304091010	Synchro Brass (All)
16	6591700	5-REV Synchro Assy.-1
17	6591600	Synchro Assy. 1-2-3-4
18	6692012	1-2 Shift Arm
19	6655034	3-4 Shift Arm
20	6691034	5-REV Shift Arm
21	6751550	Shift Fork 5-REV
22	1304096002	Shift Fork
23	6951500	Detent Kit
24	7158113	Main Case (2 Halves)
	7158114	Main Case (2 Halves) 4 WD
25	7221003	Extension Housing GM
	7241003	Extension Housing Ford & Mopar
	7252203	4 WD Adapter Plate

VIEW#	PART NO.	DESCRIPTION
26	7541532	Mainshaft Ford & Mopar
	7571532	Mainshaft GM
	7572203	4 WD Main Shaft
27	7651010	Cluster Shaft
28	7774115	Shaft Reverse Idler
29	7855112	Input ID Bearing
30	7855716	Center Cluster Bearing
31	7855306	Rear Cluster Bearing
31A	7855606	Front Cluster Bearing
32	1000130010	Rear Output Bearing
33	7871030	Rev. Gear Bearing Assy.
34	7871052	2nd & 3rd Gear Bearing Assy.
35	7871142	1st Gear Bearing Assy.
36	7899422	4th Gear Bearing Assy.
37	1000130010	Input Bearing
38	8051500	Small Parts Kit
39	8071400	Split Thrust Collar 4th Bearing
40	8195086	Bearing Retainer Gasket (All)
41	8225750	Input Seal, GM, Ford, Mopar
42	8251500	Case Plug Kit
43	8255132	Extension Housing Seal
44	T90A108	Shifting Arm Seals (3 req'd)(Not Shown)
45	8358012	Shift Arm Bushing
46	8380008	Extension Housing Bushing
47	1304110002	Speedo Gear (All)
48	8622911	Front Bearing Retainer, GM
	8625920	Front Bearing Retainer, GM Truck
	8635307	Front Bearing Retainer, Mopar
	8644033	Front Bearing Retainer, Ford
	8644035	Front Bearing Retainer, Ford 78-83
49	9055500	Fastener Kit
	HN1000	Shifter (Long)
	HN1002	Shifter (Long) 82-90 "F" Body
	Sy-1310	Slip Yolk Turbo 400
	Sy-1330	Slip Yolk Turbo 400



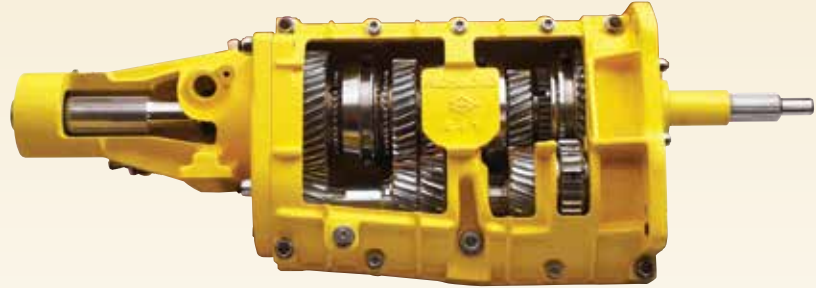
5-Speed Road Race

Exploded View



Richmond Five Speed Road Race
Exploded View:





How to Make 5th Gear Act Like an Overdrive

Example:

Muncie close ratio is 2.20 1st gear (multiply by the likely rear end) x 4.56 = 10.03

Assume 27" tire, RPM @ 70 MPH = 3972

With 7021710A 5 Speed ratio is 3.28 1st gear (multiply by the likely rear end x 3.08 = 10.10

Assume 27" tire, RPM @ 70 MPH = 2683

2683/3972 = the same as a .68 overdrive!!

Now what?

1. The Richmond 5 Speed can duplicate the Muncie through first 4 gears if you choose.

Muncie Trans Rear Ratio	VS.	RICHMOND Trans Rear Ratio
1st 2.20 4.56 10.03		1st 3.28 3.08 10.10
2nd 1.64 4.56 7.48		2nd 2.45 3.08 7.55
3rd 1.28 4.56 5.84		3rd 1.99 3.08 6.13
4th 1.00 4.56 4.56		4th 1.52 3.08 4.68

The Richmond 5-Speed matches a Muncie!

NOW! Shift into 5th for an absolutely quiet overdrive.

All overdrives are gears under power in mesh. All gears under power make some noise. The Richmond 5-Speed is straight through and **dead quiet!**

OR

2. The Richmond 5-Speed can run 5 gears, all tuned to equal energy.

7021710A has 5 gears to shift with equal splits, but in 5th gear it is 68% less RPM than a Muncie.





Winners Run RICHMOND!

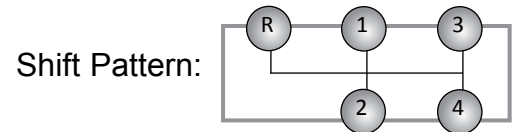
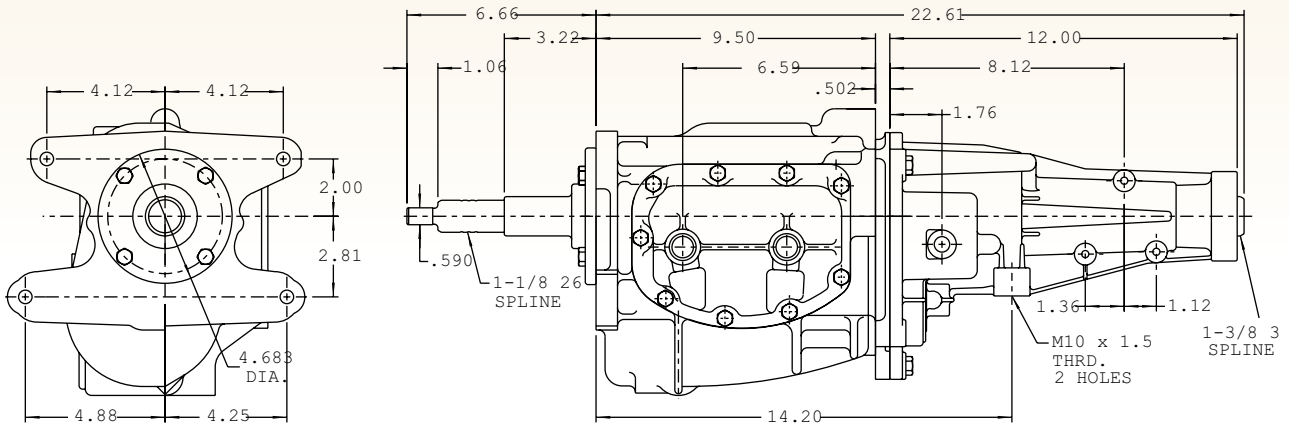
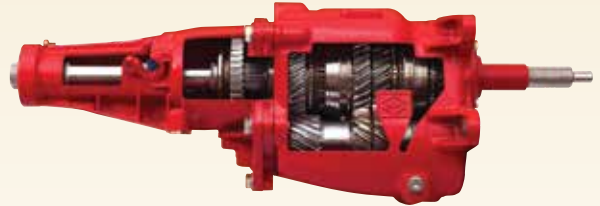
Transmissions

Super T-10 4-Speed

Dimensions

Available in G.M. Applications only.

The Richmond Super T-10 is a four speed countershaft helical gear transmission synchronized in all forward gears. First and reverse are constant mesh to prevent gear clash. Strut-type synchronizers are provided for longer life and easier shifting. The T-10 is used in applications for performance type automobiles and light trucks. The Richmond Super T-10 is the NASCAR standard.



GENERAL SPECIFICATIONS

PART NO.	DESCRIPTION	1ST	2ND	3RD	4TH	REV.	TORQUE
1304000070	2.43 "S" Ratio	2.43	1.61	1.23	1.00	2.35	375 Ft. Lbs.
1304000069	2.64 "W" Ratio	2.64	1.75	1.34	1.00	2.55	325 Ft. Lbs.
7021090	2.64 "X" Ratio	2.64	1.60	1.23	1.00	2.55	325 Ft. Lbs.
1304000072	2.88 "CC" Ratio	2.88	1.91	1.33	1.00	2.78	300 Ft. Lbs.

Center Distance	3.25 Inches
Oil Capacity	2.4 U.S Pints
Approximate Dry Weight	70 Lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever

Use RICHMOND
Transmission Lube
Part # TLUBE (pg 126)



Performance Matched For
WINNERS!



ASSEMBLIES

PART NO.	DESCRIPTION
1304000069	2.64 W Ratio
1304000070	2.43 S Ratio
1304000072	2.88 CC Ratio
7021090	2.64 X Ratio
1304000062	2.88 Y Ratio
1304000071	3.42 Z Ratio

VIEW #	PART NO.	DESCRIPTION
1	AT10107A	Rear Adapter Assembly
2	T101451/2C	Adapter Gasket
3	T10146 A	Adapter Gasket
4	T1024	Reverse Shift Fork
5	T1035	Reverse Idler Shaft
6	T1088A	Thrust Washer
7	T22110A	Ext. Housing Seal
8	T85B115	Side Cover Gasket
9	T85G25	Spacer
10	T85G26	Input Needle Bearing
11	T86166	Cluster Needle Bearing
12	T89C54	Front Bearing Retainer Seal
14	T90A108	Control Housing Seal
15	8680003	Thrust Washer (2 Required)
16	103565	Taper Pin
17	103905	Woodruff Key
18	1000127050	Extension Housing Bushing
19	1000130010	Mainshaft Bearing
20	1000130010	Input Bearing
21	1304027001	Front Bearing Retainer
22	1304053003	Cluster Bearing Spacer
23	1304053004	Cluster Bearing Washer
24	1304068001	Cluster Shaft
25	1304070002	Reverse Gear All Ratios
26	1304077008	Cluster Gear 2.64 W Ratio
	1304077009	Cluster Gear 2.43 S Ratio
	1304077010	Cluster Gear 2.64 X Ratio
	1304077012	Cluster Gear 2.88 Y Ratio
	1304077016	Cluster Gear 3.42 Z Ratio
	1304077017	Cluster Gear 2.88 CC Ratio
27	1304080004	First Gear W, S, CC, X, Y, Ratios
	1304080023	First Gear Z Ratio
28	1304080001	Second Gear S, W, CC, Z Ratios
	1304080020	Second Gear X, Y Ratios
29	1304080019	Third Gear X, CC, Y Ratios
	T10S11	Third Gear S, W Ratios
	T10U11	Third Gear Z Ratio

Replacement Parts
& Assemblies (con't)

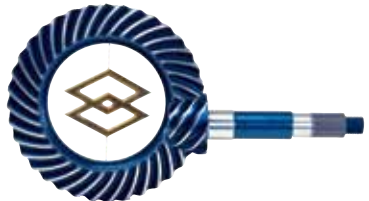
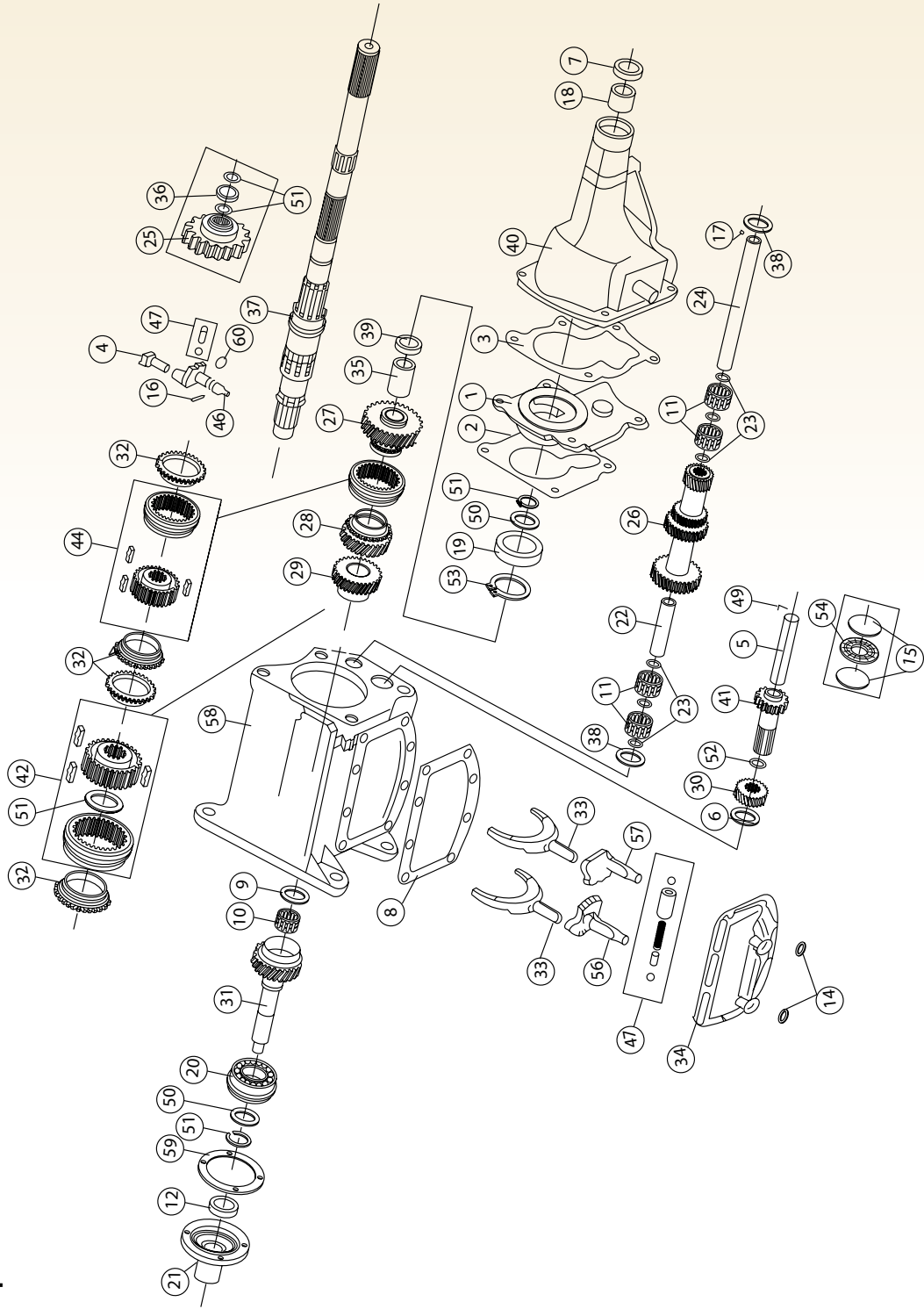
For view # see exploded view on page 65.

VIEW #	PART NO.	DESCRIPTION
30	1304084004	Reverse Gear Z Ratio
	1304084005	Reverse Idler Gear W, S, CC, X, Y Ratios
31	1304085006	Input Drive S Ratio
	1304085016	Input Drive W, X, Ratio
	1304085022	Input Drive CC, Y Ratio
	1304085023	Input Drive Z Ratio
32	1304091002	Brass Snychro Ring
33	1304096002	Shift Fork
34	1304097004	Side Cover
35	1304103001	First Gear Sleeve
36	1304110002	Speed O Gear All Ratios
37	1304171005	Mainshaft
38	1304193101	Thrust Washer
39	1304193002	Thrust Washer
40	1304566005	Extension Housing Assy.
41	1304584002	Reverse Idler Gear Assy. All Ratios
42	1304590007	3-4 Synchro Assy. w/o brass
43	1304590008	3-4 Synchro Assy. w/brass
44	1304590009	1-2 Synchro Assy. w/o brass
45	1304590010	1-2 Synchro Assy. w/brass
46	1304598003	Reverse Shift Cam Assy.
47	1304603010	Detent Kit
48	1304603011	Small Parts Kit (Needle Bearings, Snap Rings, Spacers & Washers) ((Not Shown))
	1304603012	Gasket Kit: 2, 3, 8 & 59 ((Not Shown))
49	456876	Lock Pin
50	4652U	Spacer
51	4734A-E	Snap Ring
52	4821A	Snap Ring
53	4829	Snap Ring
54	7880010	Needle Thrust Bearing
55	6291034	Synchro Key and Spring Kit
56	6680025	3-4 Shift Cam Assy.
57	6692012	1-2 Shift Cam Assy.
58	7180049	Main Case
59	8195086	Bearing Retainer Gasket
60	8280040	"O" Ring
	Sy-1310	Slip Yolk Turbo 400
	Sy-1330	Slip Yolk Turbo 400



Super T-10 4-Speed Exploded View

Richmond Super T-10 Four Speed
Exploded View:



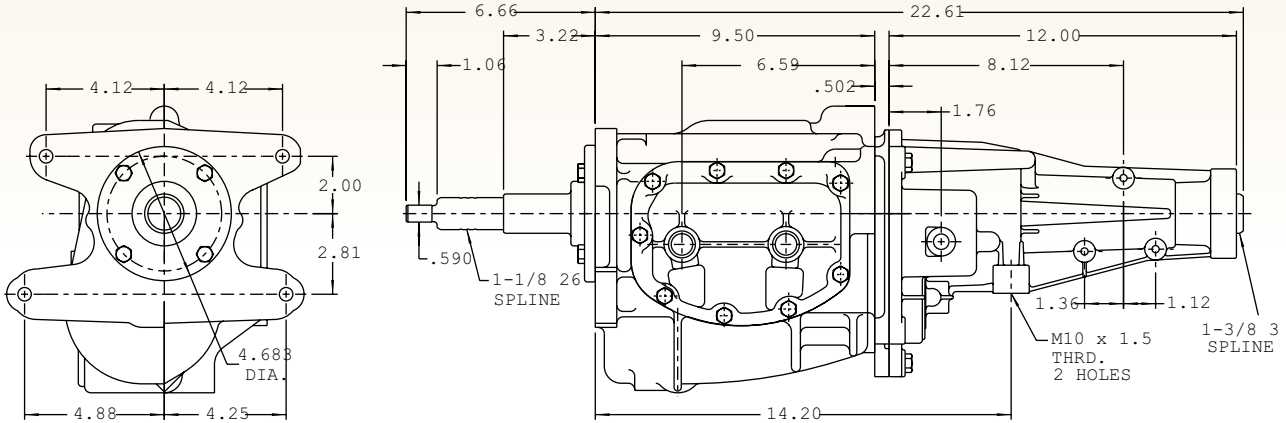
Super T-10 Plus 4-Speed



Dimensions

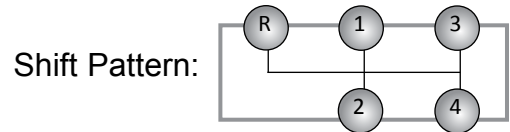
Available in G.M. Applications only.

Designed for the rigors of a road course, the Richmond T-10 Plus is assembled in the U.S.A. by American Craftsmen. Using the latest CNC machining and heat treat, this T-10 is available in a multiple range of ratios. The T-10 Plus combines race proven synchro assemblies and NASCAR proven technology to deliver smoothness and strength needed for the demands of a road course. Engineered with a pro-quality approach, the Richmond T-10 Plus delivers the quality and performance you expect!



SPECIAL FEATURES

- Steel Input Bearing Retainer
- Race Brass Synchro Rings



GENERAL SPECIFICATIONS

PART NO.	DESCRIPTION	1ST	2ND	3RD	4TH	REV.	TORQUE
7021510	2.43 "S" Ratio	2.43	1.61	1.23	1.00	2.35	375 Ft. Lbs.
7021520	2.64 "W" Ratio	2.64	1.75	1.34	1.00	2.55	325 Ft. Lbs.
7021530	2.64 "X" Ratio	2.64	1.60	1.23	1.00	2.55	325 Ft. Lbs.
7021540	2.88 "CC" Ratio	2.88	1.91	1.33	1.00	2.78	300 Ft. Lbs.
7021560	3.42 "Z" Ratio	3.42	2.28	1.46	1.00	3.51	286 Ft. Lbs.

Center Distance	3.25 Inches
Oil Capacity	2.4 U.S Pints
Approximate Dry Weight	70 Lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever

Use RICHMOND Transmission Lube Part # TLUBE (pg 126)

Performance Matched For WINNERS!





Winners Run RICHMOND!

Transmissions

Super T-10 Plus 4-Speed

ASSEMBLIES

PART NO.	DESCRIPTION
7021510	2.43 S Ratio
7021520	2.64 W Ratio
7021530	2.64 X Ratio
7021540	2.88 CC Ratio
7021550	2.88 Y Ratio
7021560	3.42 Z Ratio

Replacement Parts & Assemblies (con't)

For view # see exploded view on page 68.

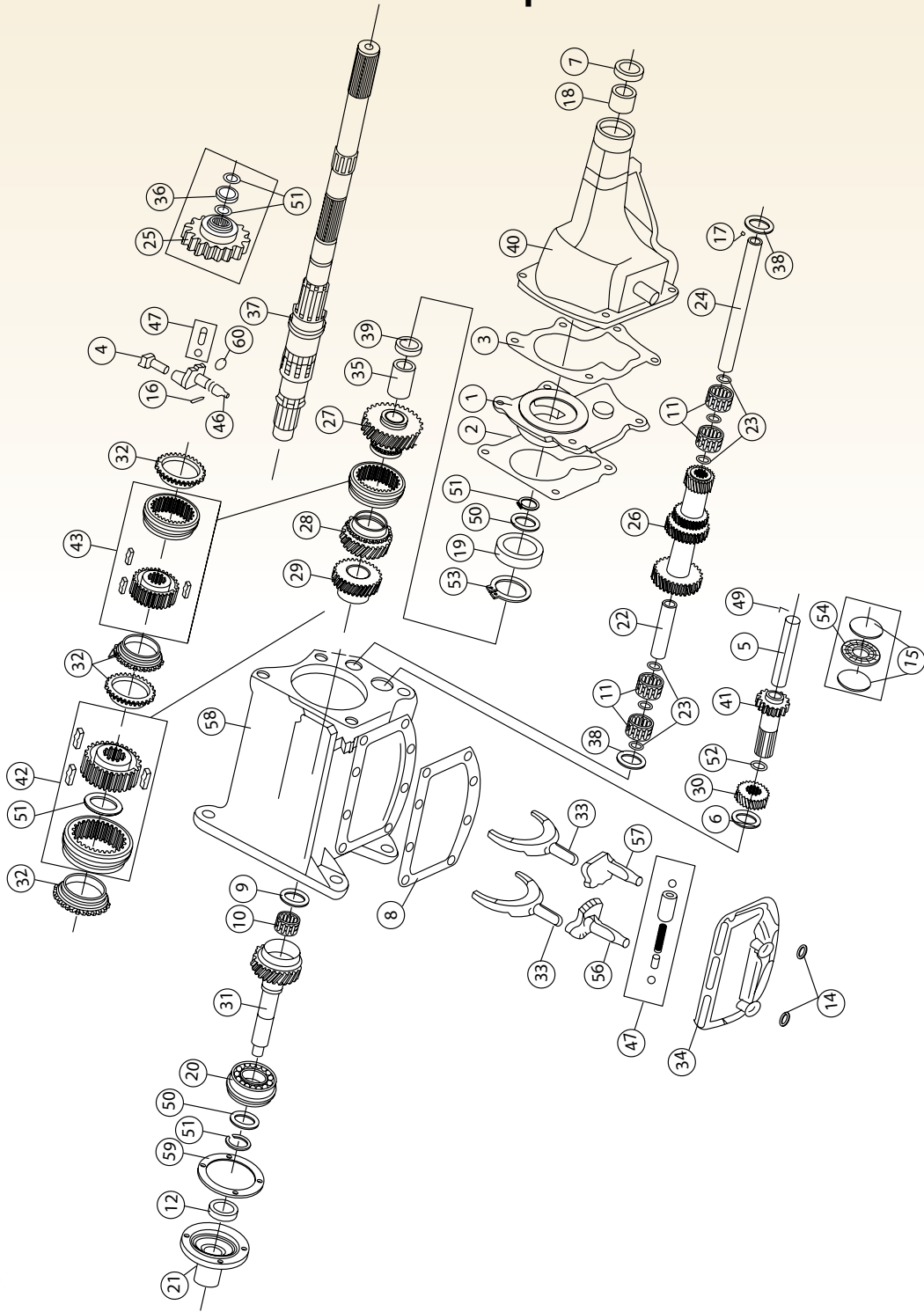
VIEW #	PART NO.	DESCRIPTION
1	AT10107A	Rear Adapter Assembly
2	T101451/2C	Adapter Gasket
3	T10146 A	Adapter Gasket
4	T1024	Reverse Shift Fork
5	T1035	Reverse Idler Shaft
6	T1088A	Thrust Washer
7	T22110A	Ext. Housing Seal
8	T85B115	Side Cover Gasket
9	T85G25	Spacer
10	T85G26	Input Needle Bearing
11	T86166	Cluster Needle Bearing
12	T89C54	Front Bearing Retainer Seal
14	T90A108	Control Housing Seal
15	8680003	Thrust Plate (2 Required)
16	103565	Taper Pin
17	103905	Woodruff Key
18	1000127050	Extension Housing Bushing
19	1000130010	Mainshaft Bearing
20	1000130010	Input Bearing
21	1304027010	Front Bearing Retainer
22	1304053003	Cluster Bearing Spacer
23	1304053004	Cluster Bearing Washer
24	1304068001	Cluster Shaft
25	1304070002	Reverse Gear All Ratios
26	1304077008	Cluster Gear 2.64 W Ratio
	1304077009	Cluster Gear 2.43 S Ratio
	1304077010	Cluster Gear 2.64 X Ratio
	1304077012	Cluster Gear 2.88 Y Ratio
	1304077016	Cluster Gear 3.42 Z Ratio
	1304077017	Cluster Gear 2.88 CC Ratio
	1304077056	Cluster Gear 2.41 T Ratio
27	1304080004	First Gear W, S, CC, X, Y, Ratios
	1304080023	First Gear Z Ratio
28	1304080001	Second Gear S, W, CC, Z Ratios
	1304080020	Second Gear X, Y Ratios
29	1304080019	Third Gear X, CC, Y Ratios
	T10S11	Third Gear S, W Ratios
	T10U11	Third Gear Z Ratio

VIEW #	PART NO.	DESCRIPTION
30	1304084004	Reverse Gear Z Ratio
	1304084005	Reverse Idler Gear W, S, CC, X, Y Ratios
31	1304085006	Input Drive S Ratio
	1304085016	Input Drive W, X, Ratio
	1304085022	Input Drive CC, Y Ratio
	1304085023	Input Drive Z Ratio
32	1304091010	Brass Synchronizing Ring
33	1304096002	Shift Fork
34	1304097004	Side Cover
35	1304103001	First Gear Sleeve
36	1304110002	Speed O Gear All Ratios
37	1304171005	Mainshaft
38	1304193101	Thrust Washer
39	1304193002	Thrust Washer
40	1304566005	Extension Housing Assy.
41	1304584002	Reverse Idler Gear Assy. All Ratios
42	1304590016	3-4 Synchro Assy. w/ Brass
43	1304590018	1-2 Synchro Assy. w/ Brass
44	1304093020	Keys (All)
45	4682AJ	Springs (All)
46	1304598003	Reverse Shift Cam Assy.
47	1304603010	Detent Kit
48	1304603011	Small Parts Kit (Needle Bearings, Snap Rings, Spacers & Washers) ((Not Shown))
	1304603012	Gasket Kit: 2, 3, 8 & 59 ((Not Shown))
49	456876	Lock Pin
50	4652U	Spacer
51	4734A-E	Snap Ring
52	4821A	Snap Ring
53	4829	Snap Ring
54	7880010	Needle Thrust Bearing
56	6680025	3-4 Shift Cam Assy.
57	6692012	1-2 Shift Cam Assy.
58	7180049	Main Case
59	8195086	Bearing Retainer Gasket
60	8280040	"O" Ring
61	1304090010	1-2 Hub
62	1304090009	3-4 Hub
	Sy-1310	Slip Yolk Turbo 400
	Sy-1330	Slip Yolk Turbo 400 HB1000S/Shifter



Super T-10 Plus 4-Speed Exploded View

Richmond Super T-10 Plus Four Speed
Exploded View:

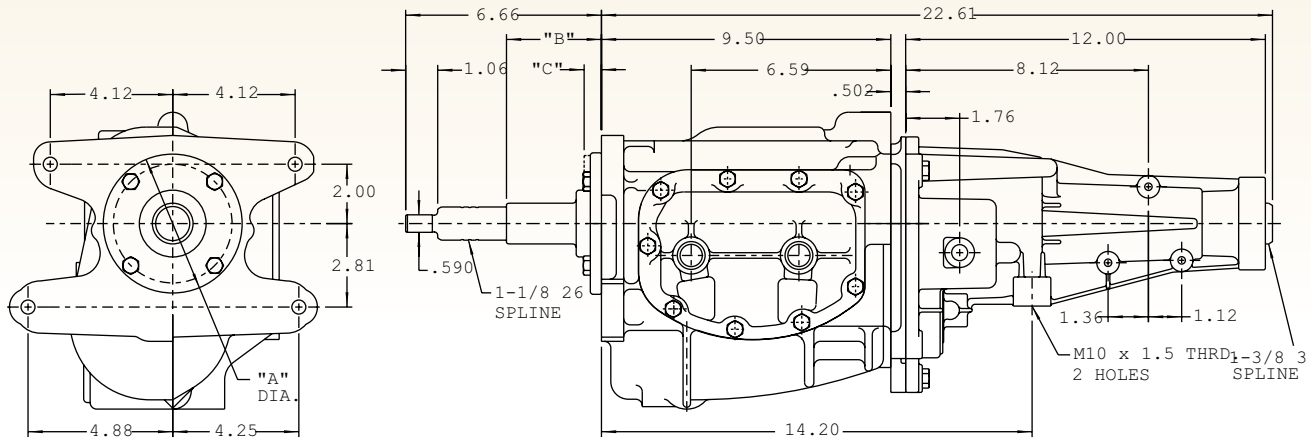
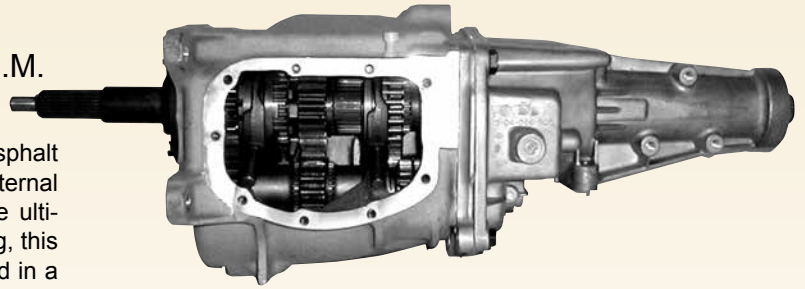


Super T-10 Plus 2-Speed

Dimensions

Available in G.M. 1 $\frac{1}{8}$ -26 Input Spline and G.M. 1 $\frac{1}{8}$ -10 Input Spline.

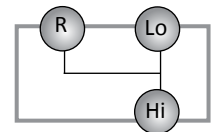
The Richmond Two Speed is designed for either dirt or asphalt racing where the rules stipulate an OEM case with an external clutch. The Two Speed utilizes straight cut gears for the ultimate in strength and durability. The best part is the shifting, this Two Speed uses Dog Rings for clutchless shifting. Offered in a variety of ratios, the two speed will let you get a "jump" on the competition.



SPECIAL FEATURES

- Clutchless Shifting
- Straight Cut Gears
- Legal OEM Case
- Interchangeable Cluster

Shift Pattern:



GENERAL SPECIFICATIONS

PART NO.	SPLINES	RATIO A	RATIO B	RATIO C	RATIO D	RATIO E	RATIO F	RATIO G
7020010	10	1.03	1.12	1.23	1.34	1.46	1.59 -- NEW	1.74 -- NEW
7020026	26	1.03	1.12	1.23	1.34	1.46	1.59 -- NEW	1.74 -- NEW

Use RICHMOND
Transmission Lube
Part # TLUBE (pg 126)

Performance Matched For
WINNERS!

Center Distance	3.25 Inches
Oil Capacity	2.4 U.S. Pints
Approximate Dry Weight	62 Lbs.
Case & Extension Housing	Aluminum
Controls	Side Lever

Also available with the following options:

- 10 Spline Input and 27 Spline Output
- 10 Spline Input and 32 Spline Output
- 26 Spline Input and 32 Spline Output
- Bushing or Roller bearing option in 27 Spline Output
- Bushing only in 32 Spline Output





Winners Run RICHMOND!

Transmissions

Super T-10 Plus 2-Speed

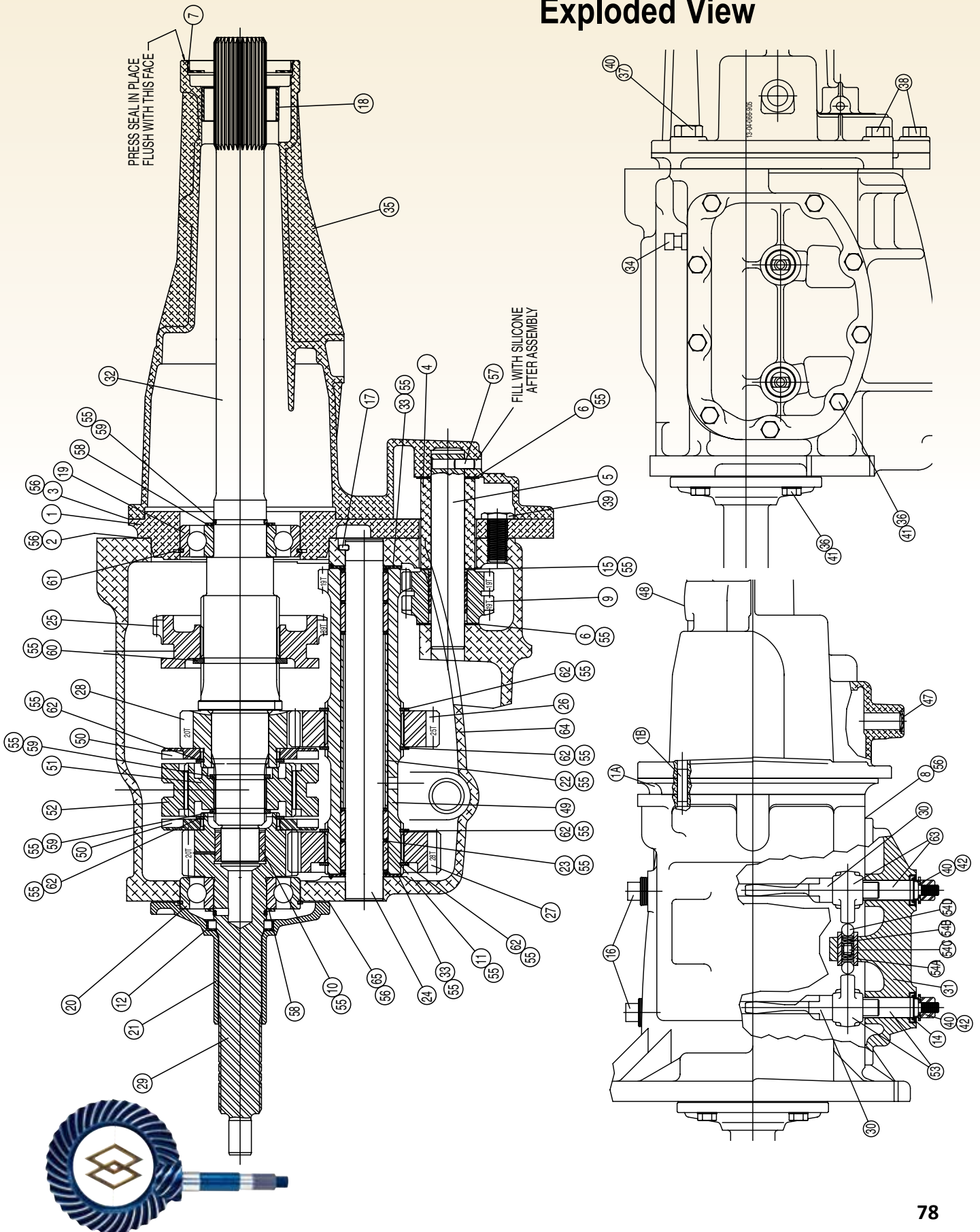
VIEW #	PART NO.	DESCRIPTION	VIEW #	PART NO.	DESCRIPTION
1	AT10107A	Rear Adapter Assembly	32	7520000	Mainshaft
1A	T10107A	Extension Adapter	33	1304193101	Thrust Washer
1B	1000043008	Dowel Pin	34	8256375	Breather Assy
2	T101451/2C	Adapter Gasket	35	1304566020	Extension Housing Assembly
3	T10146 A	Adapter Gasket	36	179817	Bolt
4	6320000	Reverse Idler Shaft	37	179888	Bolt
5	T1035	Reverse Idler Shaft	38	411382	Bolt
6	T1088A	Thrust Washer	39	4737D	Bolt
7	T22110A	Ext. Housing Seal	40	9056601	Washer
8	T85B115	Side Cover Gasket	41	114605	Lock Washer
9	5220000	Reverse Idler Gear	42	9056621	Lock Nut
10	7855112	Input Needle Bearing (Caged)	43	9980025	Rag, Oil Warning, Warranty
11	T86166	Cluster Needle Bearing	44	1000191012	Shipping Cover Rear
12	T89C54	Front Bearing Retainer Seal	45	4681AM	Output Shaft Shipping
14	T90A108	Control Housing Seal			
15	8620000	Thrust Washer	Cover		
16	1000052021	Pipe Plug	46		Owners Manual
17	103905	Woodruff Key	47	095042	Expansion Plug (.625 Dia.)
18	1000127050	Extension Housing Bushing	48	8220000	Expansion Plug (.875 Dia.)
19	1000130010	Mainshaft Bearing	49	7620000	Cluster Shaft
20	1000130010	Input Bearing	50	4320000	Dog Ring 1st & 2nd Gear
21	1304027001	Front Bearing Retainer	51	6120000	Hub 1st & 2nd Gear
22	1304053003	Cluster Bearing Spacer	52	6520001	Slider 1st & 2nd Gear
23	1304053004	Cluster Bearing Washer	53	6620000	Shift Arm Assy 1st & 2nd Gear
24	1304068001	Cluster Shaft	54	1304603010	Detent Kit
25	6520002	Reverse Slider Gear	54A	1304103013	Interlock Sleeve
26	1520023	First Gear Cluster 23T	54B	T85B42	Spring
	1520024	First Gear Cluster 24T	54C	T85B87	Interlock Pin
	1520025	First Gear Cluster 25T	54D	453593	Steel Ball
27	2520027	Second Gear Cluster 27T	55	8020000	Small Parts Kit (Needle Bearings, Snap Rings, Spacers & Washers)
	2520028	Second Gear Cluster 28T	56	1304603012	Gasket Kit - Consists of 2, 3, 8 & 65
28	1020020	First Gear Mainshaft 20T			
	1020021	First Gear Mainshaft 21T	57	456876	Lock Pin
	1020022	First Gear Mainshaft 22T	58	4652U	Spacer
29	4520026	Input Shaft (GM 1.125-26 Spline)	59	4734A-E	Snap Ring
	4520010	Input Shaft (GM 1.125-10 Spline)	60	8056694	Snap Ring (Reverse)
	4521026	Input Shaft (GM 1.125-26 Spline)	61	4829	Snap Ring
	4521010	Input Shaft (GM 1.125-10 Spline)	62	8056200	Snap Ring
30	1304096002	Shift Fork	63	6692012	Rev. Shift Cam Assy.
31	1304097004	Side Cover	64	7180049	Main Case
			65	8195086	Bearing Retainer Gasket

RATIO	INPUT	2ND CLUSTER	1ST CLUSTER	1ST MAIN SHAFT
1.03	4521026 (21T) 4521010 (21T)	2520027 (27T)	1520025 (25T)	1020020 (20T)
1.12	4520026 (20T) 4520020 (20T)	2520028 (28T)	1520025 (25T)	1020020 (20T)
1.23	4520026 (20T) 4520010 (20T)	2520028 (28T)	1520024 (24T)	1020021 (21T)
1.34	4520026 (20T) 4520010 (20T)	2520028 (28T)	1520023 (23T)	1020022 (22T)
1.46	4517026 (17T) 4517010 (17T)	2520031 (31T)	1520025 (25T)	1020020 (20T)
1.59	4517026 (17T) 4517010 (17T)	2520031 (31T)	1520024 (24T)	1020021 (21T)
1.74	4517026 (17T)			



Super T-10 Plus 2-Speed

Exploded View



RICHMOND GEAR INSTALLATION INSTRUCTION VIDEO

It is our strong recommendation that you read this set of instructions very carefully before beginning the actual gear set installation, since no gear set can be expected to withstand the abuse of performance applications if not carefully and properly installed. An extra ten minutes at this point could spell the difference in regard to safety and extended gear life...or a prematurely failed gear set. Don't rush the installation! It can be a foolish waste of time.



The RICHMOND GEAR INSTALLATION INSTRUCTION VIDEO is designed for you to see how to properly install ring and pinion gear sets.

Applications covered in this video include:

American Motors • Chevrolet 10 bolt 1955-1964 • Chrysler 8.25" • Chrysler 8.75" and 9.25" • Corvette 1955-1962 • Corvette 1963 - present • Dana 28-44-60 • Ford 8"-8.8"-9"-7.50" • GM 10 Bolt • GM 12 Bolt car and truck • Oldsmobile and Pontiac 1957-1964 • Toyota

Available through your local RICHMOND GEAR Distributor.

VERIFY RATIO BEFORE ASSEMBLY

STEP 1. Remove the gears to be replaced and thoroughly clean both the gear carrier and housing with solvent to remove any gear/bearing residue, which could lead to abrasive failure of the new gear set. After cleaning, dry-wipe (or air-dry) all disassembled parts, housings, and covers.

STEP 2. Examine the ring gear mounting surface for nicks or burrs which might prevent total landing of the newly installed ring gear. Ring/pinion tooth depth variations can result from a ring gear that is "cocked" on its mounting surface. If a ring gear spacer is to be used, also

check it for similar surface imperfections, dressing these with block backed pieces of grit paper or a small file. Following material removal (from ANY part of the assembly), bathe the pieces in the solvent and wipe or air-dry.



NOTE:
Spacers

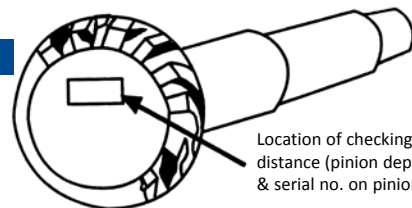
not normally recommended

Location of backlash dimension & gear serial no. on ring gear



Illustration A

Illustration B

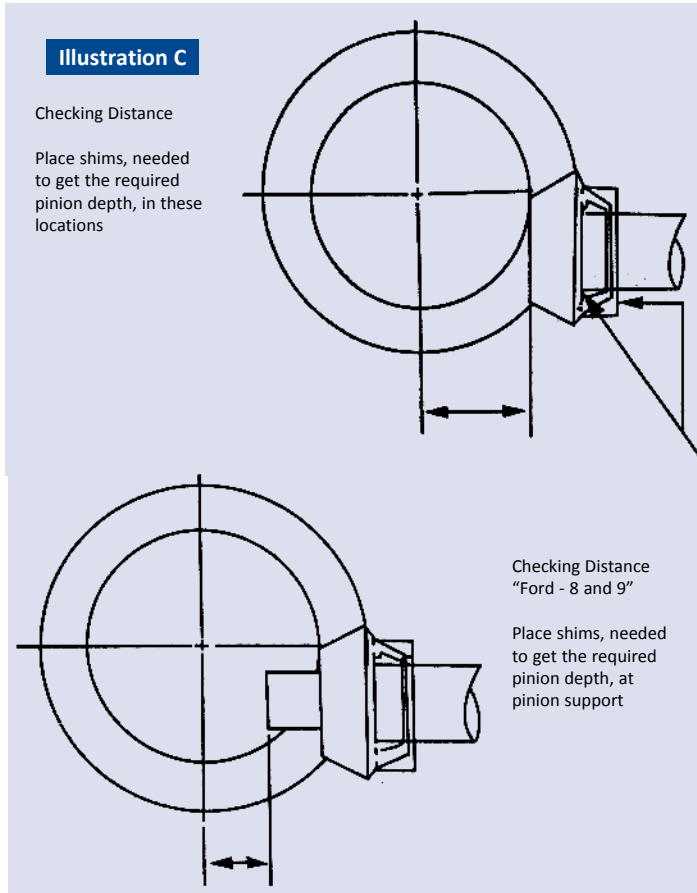


Location of checking distance (pinion depth) & serial no. on pinion

STEP 3. Study the illustrations provided with these instructions. Familiarize yourself with the terms "backlash" and "pinion depth" (sometimes called checking distance). Each set of gears is a matched pair which has been prerun on a gear test machine. Consequently, the pair should never be mixed with other rings or pinions. Also, since all gear sets have been run-checked, specific settings are supplied with each ring/pinion pair. These specifications vary from set to set. Backlash settings are marked on the outside diameter face of the ring gear as follows (see illustration A): Ref: BL.008, which means a backlash figure of .008 inch at the closest point. Pinion depth settings (or checking distance) are marked on the face of the pinion gear as follows (see illustration B): Ref: CD 2.799, which means distance of 2.799 inches from centerline of the ring gear to pinion face. Dimensional variations for backlash SHOULD NOT EXCEED .004" variation. **Example: If backlash is .008, the backlash -- including maximum variation -- should be .008-.012.**

STEP 4. When installing the pinion gear you must check its depth in the housing as per the pinion depth dimension. Add or subtract pinion depth shims to arrive at the checking distance etched on the surface of the pinion face. (See illustration C.). Refer to Helpful Hints & Additions to Richmond Gear Installation Instructions on pages 3 and 4.

STEP 5. Using a new crush collar or preload shim pack,



set the pinion rotating torque to 10-15 (used bearings) 20-25 (new bearings) inch pounds. For oval track applications when not using a cooling pump, set at 16-17 inch pounds on new bearings and 10 inch pounds maximum on used bearings.

STEP 6. After correct installation of the pinion gear, position the ring gear and check for backlash. Mount a magnetic-base dial indicator on the axle housing in such a way that the indicator plunger will be moving in a line that is tangent to rotation of the ring gear. This will provide you with a backlash reading which should conform to the figure etched on the side of the ring gear. Again, maintain a tolerance of .004 variation. Example: If backlash is .008, the backlash - including maximum variation - should be .008-.012. (Backlash is always measured in 3 or more places equally spaced around in the ring gear.) Note:

For oval track racing set BL at approximately .012-.014 inches.

STEP 7. Compensation for variations in this setting can be made by side-adjustment of the ring gear. Adjusting rings or side-shim packs can be changed to bring the backlash and rotating torque figures into tolerance. (Use same torque on gear bearings as on pinion bearings.) You are now ready to check the tooth contact pattern to assure that no accidental departures from the factory-marked specifications have been made. Apply a thin coat of RICHMOND GEAR compound ("Part # 55-0001-1") on gear teeth for best results. Tooth contact patterns should comply with those shown on next page. (Note rounded or bullet nose shape at heel end of pattern on Gear drive sides). See page 4 for patterns and additional installation hints.

If the pattern is not in those approximate positions, reset the pinion depth and reset gear backlash until the patterns are closer to the above diagram. Pinion and/or gear should not be adjusted to try to achieve a deeper pattern. The length of the pattern may vary with the amount of the load applied during the check procedure.

If satisfactory pattern results cannot be obtained after a reasonable adjustment, return the gear set to RICHMOND GEAR for evaluation. An accurate evaluation can not be obtained on a used set.

STEP 8. Fill the gear case with sufficient amount of RICHMOND GEAR 75-140 Synthetic Gear Lube and maintain the proper level at all times. Proper maintenance is a must to protect your safety and working life of your gear set. Check oil level between scheduled oil change to insure that proper oil level is maintained. Inspect vent plug to insure it is clean and operating. Inspect oil leakage, excessive heating, or any unusual noise or vibration. Note: For oval track racing, add 2 to 3 additional pts. gear lube.

RICHMOND GEAR OIL



75-140 Synthetic Oil.

GL6 with Limited Slip Additive
1 U.S. Quart / 0.946 Liter

FINAL RESULTS

Properly designed, manufactured, and maintained RICHMOND GEAR gears, correctly assembled by you in a clean rigid gear box, and operated with the proper lubricant, should result in safe and satisfactory performance. Be sure you select the proper application for your gear set.

For any questions concerning these installation instructions, please contact:

RICHMOND GEAR TECH LINE

WARRANTY

Warranty is limited to material and/or workmanship defect at time of shipment from the factory, and in no event shall seller have any liability for consequential damages of any kind resulting from a breach of this warranty. This warranty will be void on all products that show evidence of misapplication, improper installation, abuse, lack of proper maintenance, negligence, or alteration from original design. This warranty is in lieu of any other warranties, either express or implied, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OF FITNESS FOR ANY PARTICULAR PURPOSE.

ADDITIONAL INFORMATION

Buyer shall be solely responsible for determining the adequacy of the product for any and all uses to which buyer shall apply the product. The application by buyer shall not be subject to any implied warranty of fitness for that particular purpose. The manufacturer makes no warranty or representations, expressed or implied, by operation of law or otherwise as to the merchantability or fitness for a particular purpose of the goods sold hereunder. Buyer acknowledges that it alone has determined that the goods purchased hereunder will suitably meet the requirements of their intended use. In no event will the manufacturer be liable for consequential, incidental or other damages.

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with selection, installation, operation, lubrication, and maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purpose, the matter should be referred to RICHMOND GEAR.

BREAK IN

A new ring and pinion installation, especially a high numeric ratio with new bearings, can cause an excessive heat buildup in the rear end and cause softening of the gear teeth and bearings if a break in is not performed.

Street vehicles should be driven at normal street driving speed for approximately 10 miles, then stop and let cool for 30 minutes. Do this 2 to 3 times. Towing vehicles need approximately 200 to 300 miles of normal street driving before being used for towing.

On circle track race cars make approximately 6 to 8 laps at slow speed, then let cool for 30 minutes. Make 6 to 8 more laps at slow speed, then 2 to 3 laps at full speed, then let cool again for 30 minutes.

Drag cars need only an initial run-in since they are driven short distances and heat is not normally a problem with proper lube and backlash allowance.

NOTE: If after the above break in is performed, overheating of the rear end is suspected, repeat the final portion of the break in procedures.

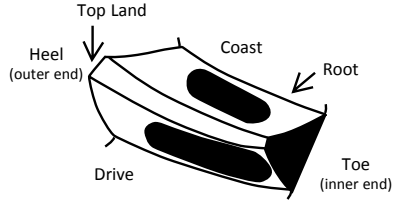
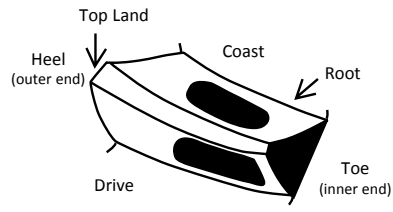
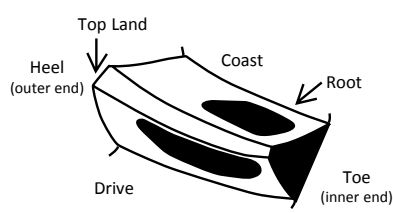
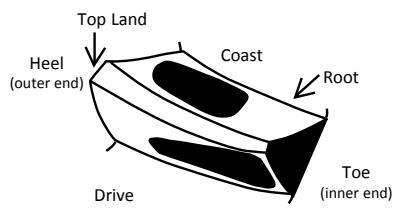
HELPFUL HINTS & ADDITIONS TO RICHMOND GEAR INSTALLATION INSTRUCTIONS

After completely reading instructions, go back to step #4. The following group of shim thickness are only if you do not have access to a pinion depth gauge or the old shim from the old pinion to start with. G.M.- .035, Ford 8-9" - .020, Ford 8.8 - 7.5 - .030, All Dana's- .035, 8-3/4 x 1-3/4 pin, - .090, 8-3/4 x 1-7/8 pin, - .020, Mopar- 9-1/4 - .020.

Pinion depth shims are located underneath the rear pinion bearing cone that is pressed on pinion with exception of the Dana Models. Dana pinion depth shims are underneath the rear pinion bearing cup in the housing. Dana carrier bearing preload shims are between carrier and bearing cone. All others are on the outside of bearing cup unless spanners are used as in the Ford 8 and 9 inch, both 8-3/4 and Mopar 9-1/4. Ford 8 and 9 inch pinion depth is regulated by shims between pinion support and chuck or center section.

Step #5 - If crush collar is used to set bearing preload, do not use until you have established pinion depth and backlash and you are satisfied with the pattern you get. You can simulate pinion bearing preload by tightening pinion nut until the right preload is achieved with only motor oil on the pinion bearings. The crush collar and pinion seal should be last to install.

TOOTH CONTACT CHART

	Ring Gear Tooth Contact	Coast Side	Drive Side	Condition	Remedy
A		49-Series Ideal Pattern		IDEAL PATTERN	V/A
B		69-79-Series Ideal Pattern		IDEAL PATTERN	N/A
C		All Series - Pattern Too High		HIGH TOOTH CONTACT heavy on the top of the drive gear tooth profile	Move the Drive PINION DEEPER into MESH.
D		All Series - Pattern Too Low		LOW TOOTH CONTACT heavy on the root of the drive gear tooth profile	Move the Drive PINION OUT of MESH.

TORQUE SPECIFICATIONS

RING GEAR BOLTS GRADE 8

3/8" x all lengths	60-65 ft lbs.
1/2" x all lengths	100-110 ft lbs.

CARRIER CAP BOLTS

7/16" (5/8" head)	60-65 ft lbs.
1/2" (3/4" head)	80-85 ft lbs.

Step #7-G.M. rear cover style housings use shims on the outside, between bearing cup and housing, adjusting backlash and carrier bearing preload. If starting with a bare housing, or you are installing a spool or different carrier, before you mount the ring gear, establish equal shim pack on each side of carrier and enough to create a drag when you slide it in and out of the housing by hand. Keep in mind you should keep the thickest shim next to the bearing cup. With a little loctite on the threads of the ring gear bolt, mount gear to carrier or spool. After adjusting shim pack

to get proper backlash and once you have established your pattern, remove carrier and pinion. Now is the time to install crush collar and pinion seal. NOTE: Always use loctite on the pinion nut. If you do not have a rear end housing spreader, you will have to work at installing the carrier once you add more shim to preload the carrier bearings. As a rule of thumb all carrier bearings will require .010 preload. After adding .005 to each side of the shim pack, coat surfaces of the shims with axle bearing grease to hold them in the housing, make sure the cups stay straight. Using a plastic or brass hammer, gently pound on bearing cups side to side until carrier has seated in housing. Again, it is important that you keep the cups straight during this operation. A spreader is almost necessary for all Dana Model rear ends. Torque caps to proper torque value.