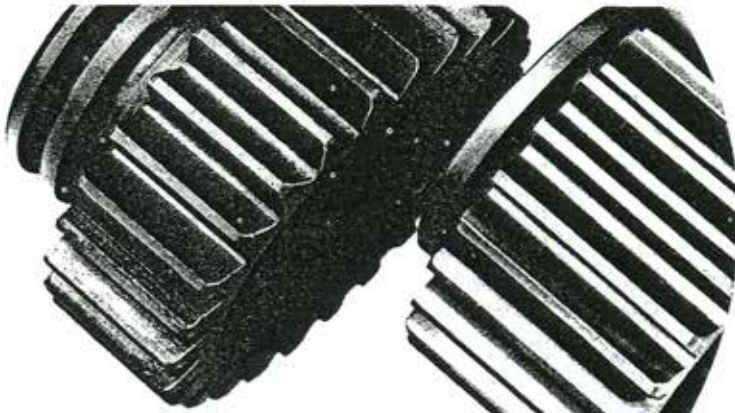


FOUR-SPEED TRANSMISSION SERVICE NOTES

UNSHAVED GEAR



SHAVED GEAR

Shaved and unshaved gear forms.

There have been modifications to tooth forms, finishes, and shaft diameters; therefore, it is extremely important to select the correct shaft-to-gear and gear-to-gear combination to ensure safe operation. An incorrect choice can be hazardous. **CAUTION:** Under no circumstances can small-bore gears be used on a non-stepped shaft, nor can large-bore gears be used on a stepped shaft.

Mainshafts with CEI threads can be updated by using later shafts with UNF threads, with the appropriate nuts and spacer. **CAUTION:** Care must be taken to ensure that the shafts are compatible with existing gears, or these should be replaced at the same time. Non-needle roller layshafts can be converted to needle-roller type, if the gearbox case is modified. Mainshaft

Stock

T916	M/S	2nd
T930	L/S	3rd
T955	M/S	2nd
T964	L/S	3rd
T968	M/S	2nd
T1843	L/S	
T1844	L/S	
T1845	L/S	
T1910	M/S	1st
T1914	M/S	1st
T2379	L/S	3rd
T2436	M/S	
T2438	M/S	
T2530	M/S	4th
T3657	M/S	4th
T3670	L/S	
T3857	M/S	2nd
T3858	M/S	3rd
T3860	L/S	3rd
T3861	L/S	2nd
T3862	L/S	1st
T3889	M/S	3rd
T3890	L/S	3rd
T3891	M/S	4th
T4155	L/S	
T4158	M/S	
T4159	L/S	
T4160	L/S	2nd
T4161	M/S	2nd
T4162	L/S	
T4163	L/S	1st
T4166	L/S	2nd
T4167	M/S	2nd
T4168	L/S	3rd
T4169	M/S	3rd
T4172	M/S	4th
T4173	M/S	

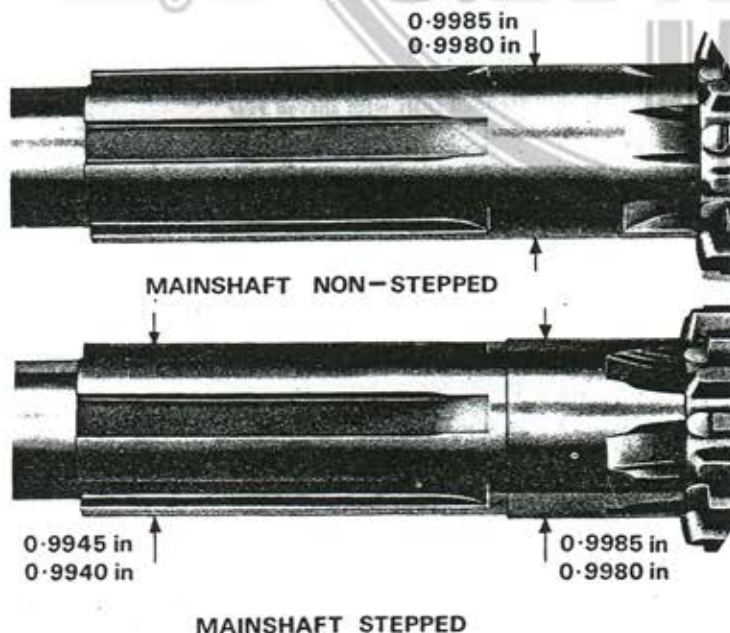
N.L.S.

T914	M/S	
T917	M/S	3rd
T926	L/S	4th
T957	M/S	1st
T959	L/S	
T961	L/S	4th
T963	L/S	2nd
T971	L/S	
T974	L/S	2nd
T1063	L/S	
T1065	L/S	2nd
T1177	M/S	
T1179	M/S	3rd
T1382	M/S	1st
T1383	M/S	1st
T1384	M/S	1st
T1608	L/S	
T1609	L/S	
T1610	L/S	
T1912	M/S	1st
T2093	L/S	
T2160	L/S	
T2163	L/S	
T2316	M/S	4th
T2378	M/S	3rd
T2528	M/S	4th
T3864	L/S	
T3893	M/S	
T4153	L/S	
T4154	L/S	

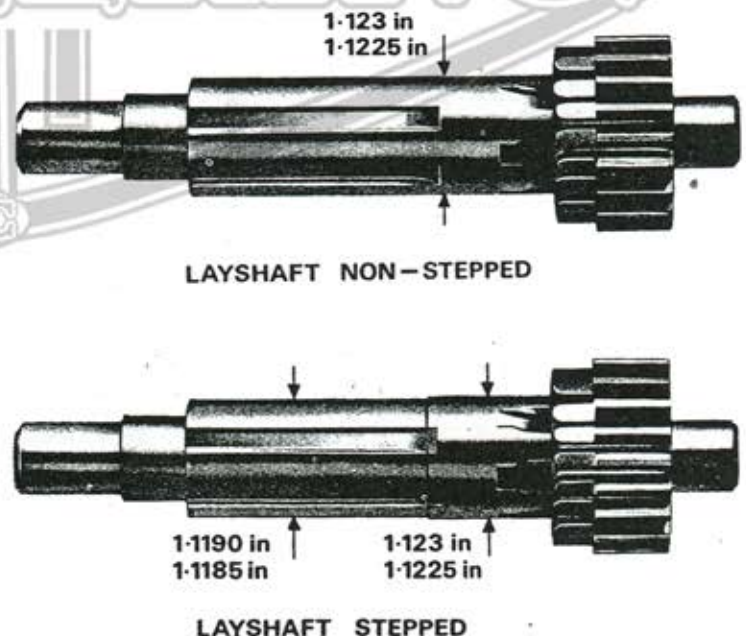
Use

T2436
T3858
T3862
None
None
T4163
T4166
None
T4160
None
T3861
T2438
T4169
T1914
T1910
T2530
T1843
T1845
T1844
T2530
T1843
T1844
T1845
T3891
T3889
T4172
T1843
T2436
T1845
T2438

Table of stock items for the gearbox, those no longer stocked, and current replacements.



Specifications of the stepped and non-stepped mainshafts.



Specifications of the stepped and non-stepped layshafts.

TRANSMISSIONS

Part No.	Description	No. of teeth	Used	Ratio	Details
T914	Mainshaft assembly	16	Up to 1967	Std. and wide	Stepped shaft CEI threads
T916	Mainshaft second	20	Up to early 1969	Std.	Non shaved sliding gear. Small bore
T917	Mainshaft third	24	Up to 1968	Std. and wide	Non shaved running gear
T926	Layshaft low	30	Up to early 1969	Std. and wide	Non shaved bushed running gear
T930	Layshaft third	22	Up to early 1969	Std. and wide	Non shaved sliding gear. Small bore
T955	Mainshaft second	21	Up to early 1969	Close	Non shaved sliding gear. Small bore
T957	Mainshaft high	24	Up to 1960	Close	Non shaved small splines non extended bush
T959	Layshaft assembly	22	Up to 1962	Close	Stepped shaft, non shaved. Plain bushes
T961	Layshaft low	28	Up to 1968	Close	Non shaved bushed running gear
T963	Layshaft second	25	Up to 1968	Close	Non shaved running gear
T964	Layshaft third	23	Up to early 1969	Close	Non shaved sliding gear. Small bore
T968	Mainshaft second	19	Up to early 1969	Wide	Non shaved sliding gear. Small bore
T971	Layshaft assembly	18	Up to 1960	Wide	Stepped shaft non shaved. Plain bushes
T974	Layshaft second	27	Up to 1968	Wide	Non shaved running gear
T1063	Layshaft assembly	20	Up to 1960	Std.	Stepped shaft non shaved. Plain bushes
T1065	Layshaft second	26	Up to early 1969	Std.	Non shaved running gear
T1177	Mainshaft assembly	18	Up to 1961	Close	Stepped shaft CEI threads
T1179	Mainshaft third	23	Up to 1968	Close	Non shaved running gear
T1382	Mainshaft high	26	Up to 1963	Std.	Non shaved extended bush. Small splines
T1383	Mainshaft high	24	Up to 1963	Close	Non shaved extended bush. Small splines
T1384	Mainshaft high	28	Up to 1963	Wide	Non shaved extended bush. Small splines
T1608	Layshaft assembly	20	1961—1962	Std.	Stepped shaft incl. speedo drive. Needle roller
T1609	Layshaft assembly	22	1961—1962	Close	Stepped shaft incl. speedo drive. Needle roller
T1610	Layshaft assembly	18	1961—1962	Wide	Stepped shaft incl. speedo drive. Needle roller
T1843	Layshaft assembly	20	1963—1967	Std.	Stepped shaft hole for speedo gear
T1844	Layshaft assembly	18	1963—1967	Wide	Stepped shaft hole for speedo gear
T1845	Layshaft assembly	22	1963—1967	Close	Stepped shaft hole for speedo gear
T1910	Mainshaft high	24	1964—1967	Close	Non shaved extended bush. Large splines
T1912	Mainshaft high	28	1964—1966	Wide	Non shaved extended bush. Large splines
T1914	Mainshaft high	26	1964—1967	Std.	Non shaved extended bush. Large splines
T2093	Layshaft assembly	20	1968—early 1969	Std.	Stepped shaft no speedo drive
T2060	Layshaft assembly	18	1967—1968	Wide	Stepped shaft. No hole for speedo drive
T2163	Layshaft assembly	22	1968—early 1969	Close	Stepped shaft. No hole for speedo pinion
T2316	Mainshaft high	26	1968—early 1969	Std.	Non shaved extended nose
T2378	Mainshaft third	23	Early 1969	Std.	Non shaved running gear
T2379	Layshaft third	22	Early 1969	Std.	Non shaved sliding gear. Small bore
T2436	Mainshaft assembly	16	1968—early 1969	Std. and wide	Stepped shaft. U.N.F. threads
T2438	Mainshaft assembly	18	1968—early 1969	Close	Stepped shaft. U.N.F. threads
T2528	Mainshaft high	24	1968—early 1969	Close	Non shaved extended nose. Large splines
T2530	Mainshaft high	28	1967—1968	Wide	Non shaved extended nose. Large spline
T3657	Mainshaft high	23	1969—1970	Wide	Shaved extended nose. Large spline
T3670	Layshaft assembly	15	1969 (M.P. only)	Wide	Stepped shaft (metric module)
T3857	Mainshaft second	20	Late 1969—1970	Std.	Shaved sliding gear. Large bore
T3858	Mainshaft third	24	1969—1970	Wide	Shaved running gear
T3860	Layshaft third	22	Late 1969—1970	Wide	Shaved sliding gear. Large bore
T3861	Layshaft second	26	Late 1969—1970	Std.	Shaved running gear
T3862	Layshaft low	30	1969—1970	Std. and wide	Shaved bushed running gear
T3864	Layshaft assembly	20	Early 1969	Std.	Stepped shaft with shaved gear
T3889	Mainshaft third	23	Late 1969—1970	Std.	Shaved running gear
T3890	Layshaft third	22	Late 1969—1970	Std.	Shaved sliding gear. Large bore
T3891	Mainshaft high	26	Late 1969—1970	Std.	Extended nose. Shaved gear
T3893	Mainshaft assembly	16	Early 1969	Std. and wide	Stepped shaft. Shaved gear
T4153	Layshaft assembly	22	Early 1969—1970	Close	Stepped shaft shaved gear
T4154	Mainshaft assembly	18	1968—early 1969	Close	Stepped shaft shaved gear
T4155	Layshaft assembly	20	Late 1969—1970	Std.	Non stepped shaft shaved gear
T4158	Mainshaft assembly	16	Late 1969—1970	Std. and wide	Non stepped shaft shaved gear
T4159	Layshaft assembly	15	Late 1969—1970	Wide	Non stepped shaft shaved gear
T4160	Layshaft second	27	1969—1970	Wide	Shaved running gear
T4161	Mainshaft second	19	Late 1969—1970	Wide	Shaved sliding gear large bore
T4162	Layshaft assembly	22	Late 1969—1970	Close	Non stepped shaft. Shaved gear
T4163	Layshaft low	28	Early 1969—1970	Close	Shaved bushed running gear
T4166	Layshaft second	25	Late 1969—1970	Close	Shaved running gear
T4167	Mainshaft second	21	Late 1969—1970	Close	Shaved sliding gear. Large bore
T4168	Layshaft third	23	Late 1969—1970	Close	Shaved sliding gear. Large bore
T4169	Mainshaft third	23	Early 1969—1970	Close	Shaved running gear
T4172	Mainshaft high	24	Late 1969—1970	Close	Shaved extended nose
T4173	Mainshaft assembly	18	Late 1969—1970	Close	Non stepped shaft. Shaved gear

Table of gearbox components available for the 650cc models and alternates for updating older transmissions. NLS means no

FOUR-SPEED TRANSMISSION SERVICE NOTES

Stock	1st Alternative	2nd Alternative
NLS	T2436 M/S + ^{S586} _{S549} nuts + T2279 spacer	T4158 M/S + T3857 M/S 2 + ^{S586} _{S549} nuts + T2279 spacer
Stock	T3857 M/S2 + T4158 M/S + ^{S586} _{S549} + T2279 spacer	None
NLS	T3858 M/S3 (24T) for W.R. up to 1970 and std. to early 1969	T3889 M/S3 (23T) + T4155 L/S + T3890 L/S 3 (22T)
NLS	T3862 L/S low	None
Stock	T3860 L/S 3 (22T) + T4155 L/S	T3890 L/S 3 (22T) + T4155 L/S + T3889 M/S3 (23T)
Stock	T4167 M/S 2 + T4173 M/S + ^{S586} _{S549} + T2279 spacer	None
NLS	None	None
NLS	None	None
NLS	T4163 L/S low	None
NLS	T4166 L/S 2	None
Stock	T4168 L/S 3 + T4162 L/S	None
Stock	T4161 M/S 2 + T4158 M/S	None
NLS	None	None
NLS	T4160 L/S 2	None
NLS	None	None
NLS	T3861 L/S 2	None
NLS	T2438 M/S + ^{S586} _{S549} nuts + T2279 spacer	T4173 M/S + T4167 M/S 2 + ^{S586} _{S549} nuts + T2279 spacer
NLS	T4169 M/S 3	None
NLS	T1914 M/S high may be used with 1964/70 sprocket	T3891 M/S high + E7037 plate + E7565 oil seal (Unit construction only)
NLS	T1910 M/S high may be used with 1964/70 sprocket	T4172 M/S high + E7037 plate + E7565 oil seal (Unit construction only)
NLS	T2530 M/S high may be used with 1964/70 sprocket	T3657 M/S high + T4159 L/S + T3860 L/S3 + E7037 plate + E7565 oil seal (unit construction only). No alternative 1960—1963
NLS	T1843 L/S	T4155 L/S + T3890 L/S 3 (No speedo drive)
NLS	T2163 L/S	T4162 L/S + T4168 L/S 3 (No speedo drive)
NLS	T1844 L/S	T4159 L/S + T3657 M/S high + T3860 L/S 3 + E7037 plate + E7565 oil seal (unit construction). No speedo drive
Stock	T4155 L/S + T3890 L/S 3 (No speedo drive)	None
Stock	T4159 L/S + T3657 M/S high + T3860 L/S 3 + E7037 plate + E7565 oil seal (unit construction). No speedo drive	None
Stock	T4162 L/S + T4168 L/S 3 (No speedo drive)	None
Stock	T4172 M/S high + E7037 plate + E7565 oil seal	None
NLS	T2530 M/S high + E7307 plate + E7565 oil seal	T3657 M/S high + T4159 L/S + T3860 L/S 3
Stock	T3891 M/S high + E7037 plate + E7565 oil seal	None
NLS	T1843 L/S	T4155 L/S + T3890 L/S 3
NLS	T1844 L/S	T4159 L/S + T3657 high + T3860 L/S 3 + E7037 plate + E7565 oil seal
NLS	T1845 L/S	T4162 L/S + T4168 L/S 3
NLS	T3891 M/S	None
NLS	T3889 M/S 3	None
Stock	T3890 L/S 3 + T4155 L/S	None
Stock	{ T4158 M/S + T3857 M/S 2 Std. ratio } { T4158 M/S + T4161 M/S 2 Wide ratio }	{ None } { None }
Stock	T4173 M/S + T4167 M/S 2	None
NLS	T4172 M/S high	None
Stock	T3657 M/S high + T4159 L/S + T3860 L/S 3	None
Stock	Current (metric module)	None
M.P.	None	T4159 L/S + T3860 L/S 3
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
NLS	T1843 L/S	T4155 L/S + T3890 L/S 3
Stock	Current	None
Stock	Current	None
Stock	Current	None
NLS	T2436 M/S	{ T4158 M/S + T3857 M/S 2 Std. } { T4158 M/S + T4161 M/S 2 Wide }
NLS	T1845	T4162 L/S + T4168 L/S 3
NLS	T2438	T4173 M/S + T4167 M/S 2
Stock	Current	None
Stock	Current	None
Stock	Current (metric module)	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None
Stock	Current	None

longer stocked.