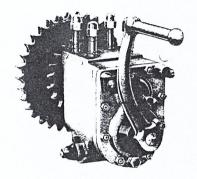
APRIL. \*1927.

## STURMEY ARCHER COUNTERSHAFT GEAR I



L.S. TYPE

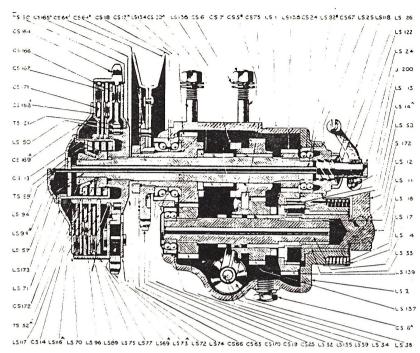
3-SPEED for CHAIN-CUM-BELT or ALL-CHAIN DRIVE.

## STURMEY-ARCHER GEARS LTD.

LENTON———NOTTINGHAM——ENGLAND.

Telegrams "TRIPLE, NOTTINGHAM."

Tel. 4155



A SECTIONAL VIEW OF THE STURMEY-ARCHER 3-SPEED COUNTERSHAFT GEAR.

# STURMEY-ARCHER 3-SPEED COUNTERSHAFT GEAR L.S. TYPE.

Suitable for Engines from 300 c/c to 1200 c/c.

The outstanding feature of this new production is that three speeds and a kick-starter are provided by using only three pairs of pinions. The kick-starter drive is taken through the low gear pinions, thus dispensing with the extension on the box, and reducing weight appreciably. The kick-starter mechanism is entirely enclosed, and the box presents a particularly neat and pleasing appearance.

The pinions of this box are so arranged that, when in high gear, the idle wheels are gearing down, thus reducing friction considerably.

The change gear compensator so well known to users of S.A. Gears is now incorporated in the box, giving this device greater efficiency and perfect lubrication.

This compensator, together with constant mesh pinions, prevents any possibility of damage to gears when changing.

#### TYPES OF CLUTCHES



#### SINGLE PLATE CLUTCH.

The single Plate Clutch contains cork inserts: very simple and light, for engines not exceeding 250 c/c. (This clutch is not used now on the L.S. Box.)



#### THE 2 PLATE CLUTCH.

Cork and Ferodo insert type.

Roller bearings in brass cage, for single cylinder engines up to 400 c/c or twins up to 500 c/c.



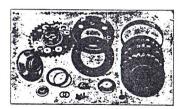
#### THE 3 PLATE CLUTCH.

Cork and Ferodo insert type.

Roller bearings in brass cage, for engines up to 1,000 c/c.

#### THE SHOCK ABSORBER CLUTCH.

The drive is taken through a series of rubber buffers in the clutch sprocket, taking up very little space, and light in weight; in fact it has proved so efficient in action that it is not possible to distinguish between the belt and the all-chain when this shock absorber is fitted.



## 3 PLATE SHOCK ABSORBER CLUTCH.

The 3 Plate (Heavy Weight) shock absorber clutch for engines up to 1,000 c/c.

Ferodo insert type, roller bearings and efficient rubber shock absorbers.

#### 2 PLATE SHOCK ABSORBER CLUTCH.

A 2 plate shock absorber clutch (not illustrated) is also supplied, suitable for engines up to 400 c/c. or twins up to 500 c/c.

#### 4 PLATE CLUTCH.

A special 4-plate clutch, with or without shock-absorber, is also supplied for high efficiency engines of the super-sports variety at extra charge.

The Clutch Drivers, Centres and Plates on these single spring clutches all have six grooves or tongues. These parts may be distinguished by this fact from the corresponding parts belonging to multi-spring clutches, which are designed with eight grooves or tongues.

#### SHOCK ABSORBER MULTI-SPRING CLUTCH.

A new Multi-spring Shock Absorber Clutch (illustrated on page 16) has been introduced: the Sprocket is mounted on a roller bearing and is securely held in position laterally to eliminate side play and also prevent any variation in chain line. The six springs are equally spaced round the face, and are arranged to bring the pressure as close to the driving surface as possible.

The advantage of the Multi-spring Clutch is a more equal distribution of the Spring pressure round the driving surface; also that the plates are less liable to tilt when the Clutch is released, and altogether a most efficient Clutch.

This type of clutch is made in 2-plate, 3 plate, and 4-plate sizes.

### SLIPPING CLUTCH.

The clutch worm lever should be examined immediately any sign of slipping is suspected, to ensure that it has it idle movement when the clutch is fully engaged.

Through wear on the clutch plates, or faulty setting, the lever may be found resting on the stop spring. In this case it will be necessary to loosen the lever from the worm, move it forward slightly, and adjust the wire stop screw to suit.

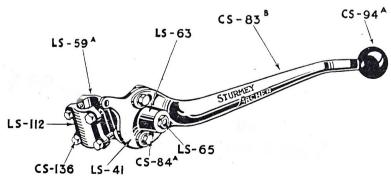
In the case of the new type clutch nut, it may be found that the shoulder on the worm is bearing on the face of the felt washer. (See illustration on page 1.) As a temporary measure release the steel cap LS 26, but to effectually cure the trouble, it will be necessary to shorten the clutch rod by \$\frac{1}{16}\$" or thereabout.

When fitting up the clutch control cable ease off the bends as much as possible, otherwise the clutch will be difficult to operate.

#### GEAR CONTROLS.

Two types of change gear control are supplied, and each type is available for the different positions given below:—

1. DISC PATTERN WITH "V" NOTCHES, as illustrated.

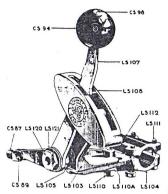


This type of control can be supplied to fix to the Saddle-down tube as illustrated above, or mounted on a bracket bolted to the top of the box, or fitted to an extension of the gearbox cover.

The length of the stem of the Quadrant Stud varies according to the method of fixing, otherwise all "Disc" type controls are identical.

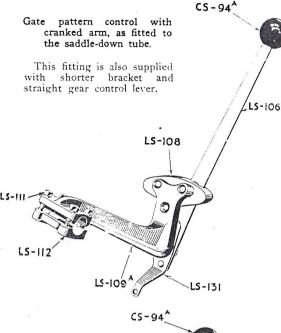
#### 2. GATE PATTERN.

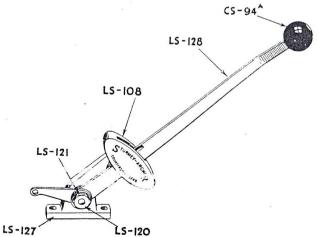
Can be supplied to fix to the tube underneath the tank, or to the saddle-down tube, or to bolt to the top of the gearbox:—



Gate pattern control for the tube underneath the tank.

Supplied either with adjustable fitting shown, to suit any width tank up to 104 inches, or with fixed brackets to suit Stin., 10in., and 11tin. tanks.





Gate pattern control as fitted to top of the gearbox.

It is to be noted that the top of the gearbox has to be specially grooved and two fixing studs fitted to take this control, so that conversions from any other type except Disc on Box, is not possible.

### CHANGING GEAR.

When starting from rest, with engine running and gear in neutral, release clutch and push gear control sharply into first or low position, when throttle may be opened to the required amount, and clutch engaged gradually. As sufficient momentum is obtained, clutch and gear control may again be manipulated for second and finally high gear as above.

We would emphasize that gear boxes are meant to be used. Sturmey Archer gears are particularly easy to change, therefore never allow the engine to labour, or resort to slipping the clutch on a hill. Change down to a lower gear; keep the engine running freely, and you will find that a much faster climb can be made without punishing the engine.

## GEAR ADJUSTMENT.

It is important to see that the gear control is kept properly adjusted, and this should be tested occasionally to see that it is correct.

Before proceeding to adjust the control, see that compensator spring nut on lever side of rocking shaft is thoroughly tight.

The adjustment of the gear is effected by removing the pin from the top connection on the end of the control rod, and giving the connection one turn, or half a turn, on the thread, up or down, to lengthen or shorten the control rod as required. When the gear is properly adjusted the control lever should move an equal amount either side of the neutral notch without engaging either the middle or low gear; finally check by pin in top connection, being just free to slide when in high gear.

#### TO TAKE GEAR APART.

Disconnect clutch control wire, then remove seven cover nuts and gently pull off the cover plate. Do not use a screwdriver or similar tool to part the joint, or the latter will fail to retain oil when reassembled. If the plate sticks, one or two light blows inside the kick-starter crank will loosen it. This will expose the complete interior to view. By disconnecting gear control rod the low and middle gear pinions, also layshaft, may be lifted out.

When replacing, take care that the ball bearings are not tilted. No forcing is necessary when replacing the cover plate.

#### LUBRICATION.

Use Speedwell "Crimsangere Light," Vacuum "Mobilubricant Soft," or Wakefield Castrolease Light," specially prepared for Sturmey-Archer Gearboxes. Facilitate gear changing and do not leak. "Crimsangere" and "Castrolease" are supplied in 1lb. tubes. Charge with ½lb., and recharge with ½lb. about every 1,000 to 1,500 miles. Add about 3 tablespoonsful of engine oil to the "Crimsangere" and "Mobilubricant Soft."

It is very important to see that these instructions are carefully observed. No harm is done by an additional charge, but on the other hand we find that a large percentage of gear trouble can be directly attributed to insufficient lubrication or by using a lubricant which is not suitable.

It is not advisable to use thick grease, as it may prevent the free operation of the kick starter pawl.

The various joints in the gear changing lever mechanism should be kept oiled regularly to ensure freedom of action. Inject a liftle vaseline or grease between the index and quadrant plate CS110 and CS111.

DO NOT lubricate the clutch, as this is designed to run dry.

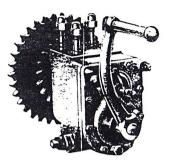
## FORMULA FOR FINDING THE NUMBER OF TEETH IN ENGINE SPROCKET.

*Diameter of belt di	rum No. 6	of teeth in Gea	ar Sprocket	No. of teeth in
*Diameter of gear p	oulley	Required top	Gear.	Engine Sprocket
Exam	mple $\frac{2.0}{8} \times \frac{3.0}{5}$	$=\frac{5}{3}\times\frac{6}{1}=$	$\frac{3.0}{5} = 15 \text{ te}$	eth.

\*For all chain drive insert No. of teeth of back Sprocket and Gear Sprocket.

LIST OF AVAILABLE GEAR RATIOS  GEARS 10 PITCH.						1 1.47 2.94 1 1.33 2.18 . 1 1 3.6			
TOP	Standard Ratios		1	Close	Ratios	Wide Ratios			
	Middle	Low	Mi	iddle Low		Middle	Low		
3 3 3 3 4 4 4 4 5 5 5 5 6 6 6 6	4.41 4.78 5.15 5.51 5.88 6.25 6.62 6.98 7.35 7.72 8.09 8.45 8.82 9.19	8.82 9.56 10.29 11.03 11.76 12.50 13.23 13.97 14.70 15.44 16.17 16.91 17.64 18.38 19.11	3.9 4.0 4.0 5.0 5.0 6.0 6.0 7.0 7.0 8.0 8.0	32 566 999 332 555 999 32 555 98 32 555 98 332	6.54 7.09 7.63 8.18 8.72 9.27 9.81 10.36 10.90 11.45 11.99 12.54 13.63 14.17	5.40 5.85 6.30 6.75 7.20 7.65 8.10 8.55 9.00 9.45 9.90 10.35 10.80 11.25 11.70	10.80 11.70 12.60 13.50 14.40 15.30 16.20 17.10 18.00 19.80 20.70 21.60 22.50 23.40		

SUITABLE FOR MACHINES FROM 400 to 1200 c/c.



The gear illustrated has a 4 stud fixing with heavy internal pinions, and is interchangeable with our C.S. type gear.

For engines over 400 c/c a 3 or 4 plate heavy clutch is fitted.

# PARTICULARS OF Particulars required when ordering GEARS. Gears.

Chain-cum-belt.
Engine Chain line 3½"
Belt line, 2½".
Belt pulley 8" dia. for 1" belt.
All Chain.
Engine chain line 3½"
Rear Chain line, 2½"
Rear chain line, 2½" for ½" chain.
Clutch sprocket, 34T, ½" pitch, x ½"
or ½" wide.
Back sprocket, 19T, ½" pitch, x ½"
or ½" wide.
Back sprockets can also be supplied with 15-16-17-18-22
and 24T.

Also whether 2 or 4 stroke.

Type of drive:—All chain.

"Chain-cum-belt.

Number of teeth on sprockets with pitch and width of chains, also if shock absorber is required

Make and C/C of engine.

Type of control (see page 3).

Disc on seat tube (dia. of tube).

Disc on box.

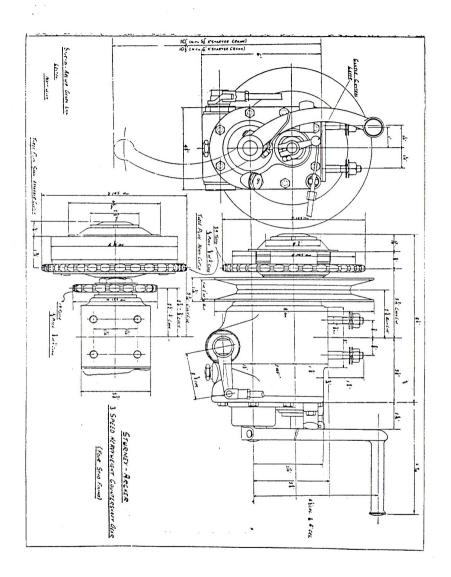
Gate on tube under tank (dia.

Gate on tube under tank (dia. of tube).

Gate on down tube (dia. of tube). Gate on box.

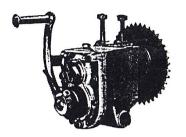
Dia. of handlebar.

When customer requires a certain top gear, it is necessary to give particulars as to the number of teeth on the Engine and Road Wheel Sprockets.



### STURMEY-ARCHER 3-SPEED LIGHTWEIGHT.

SUITABLE FOR MACHINES UP TO 400 c/c.



The gear illustrated has a 2 stud fixing, and is fitted with a two-plate clutch as standard.

#### PARTICULARS OF GEARS.

#### Chain-cum-belt.

Engine chain line, 3" or  $3\frac{1}{2}$ ".

Engine chain line, 316" with 78" belt pulley and to" chain.

Belt line  $2\frac{1}{5}$ " for  $\frac{3}{4}$ " or  $\frac{7}{5}$ " belt.

Belt pulleys 7" dia.

All chain drive.

Engine chain line 3" or  $3\frac{1}{2}$ ".

Rear chain line, 236"

Clutch sprocket, 42T, ½" pitch, 18"

or is wide.

Rear sprocket, 20T, ½" pitch, 36" or wide.

#### Particulars required when ordering Gears.

### Make and C/C of engine.

Also whether 2 or 4 stroke.

Type of drive:-All chain.

" Chain-cum-belt.

Number of teeth on sprockets with pitch and width of chains, also whether shock absorber is required.

Type of control (see page 3).
Disc on scat tube (dia. of tube).

Disc on box.

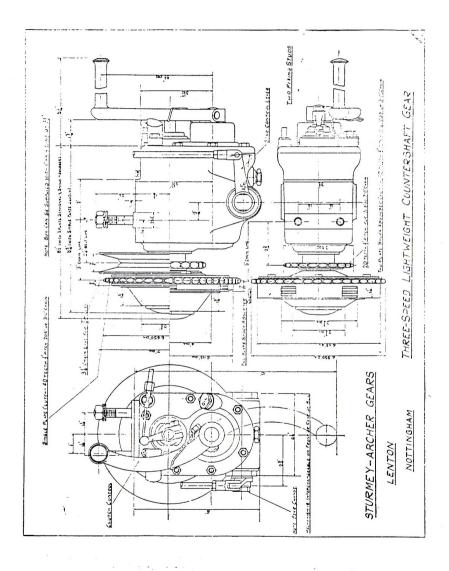
Gate on tube under tank (dia. of tube).

Gate on down tube (dia. of tube).

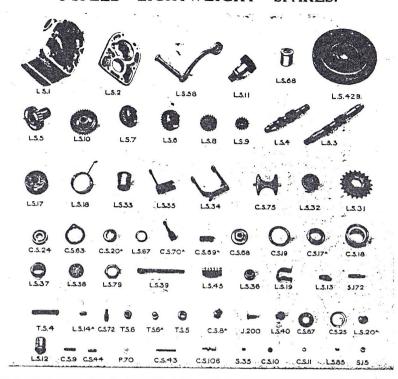
Gate on box.

Dia. of handlebars.

When customer requires a certain top gear, it is necessary to give particulars as to the number of teeth on the Engine and Road Wheel Sprockets.



## 3-SPEED LIGHTWEIGHT SPARES.



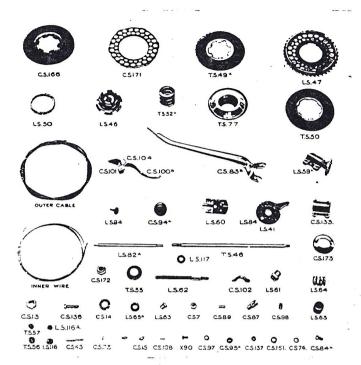
## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS.

		GEARBOX NUMBER		AN	D	PR	EC	EDING LETTERS.
Svn	nbol .	No.	š.	d.	1		bol N	
LS	. 1			0	-			CULT C. F. J.
,,		Gearbox Cover 0 1		0			35	Destrict Charles Charl
"			ŏ	2	1	,,	250	
,,	2	Axle (for single plate clutch only) 0 1		Õ	1	**	334	Rocking Shaft Lever (for Front of Box) 0 6 6 It is best to return the whole of this part, as
,,					i			slight variations are found necessary to suit
				0				
(:				6	į.		20	011 D-+
	-							Oil Retainer Cap 0 0 2
1 "			5		i	**		Rocking Shaft Lever Bush 0 2 0
"				0		**		Rocking Shaft End Bush 0 1 6
("	10				1	**		Rocking Shaft 0 1 3
,,	10	Low Gear and Kick Starter Wheel 0 1	U	0	1	**	40	Rocking Shaft Nut 0 0 6
		These symbol numbers should only be quoted				**	42a	Pulley, 7in., \$in 0 13 6
		for 12-14 pitch gears.			1	**		Pulley, 7in., in 0 13 6
		See footnote after H.W. gear parts (page 13).			1	**	44	Axle Sprocket (#in. x in. 17T.) 0 7 6
	11		9	6		**		Compensator Spring 0 0 5
.,	12	Layshart Dush	-	•		.,		Kick Starter Crank 51 in 0 12 6
		If a new Layshaft Bush is required, the					67	Oil Retaining Washer 0 0 2
		Axle must be returned to us to have one			1	**	79	Pulley Lock Nut 0 0 9
		fitted, charge 4/-			1		85	Rivet for Kick Starter Cam 0 0 1
,,	145	Distance piece for extended K.S Axle 13/16in.					152	Felt Washer for Main Bearing 0 0 2
			0	3	1	T.S.	4	Fixing Stud 0 0 5
**	145	A Distance piece for extended K.S. Axle 1 5/16in.				,,	5	Gearbox Spring Washer 0 0 2
			0	3	1	**	8	
		Kick Starter Pawl 0	1	3		,,	6a	Gearbox Nut (Domed and Plated) 0 0 8
.,	14		0	3			39	Bottom Fixing Plate (C/Stays 1 in. or 2 in.
	17		0	9				Crs. 0 2 9
	. 17	a Ditto, for Extended K.S. Axles 0	0	9	1		40	Top Fixing Plate (C/Stays 17in. or 21in. Crs.) 0 2 9
	18		1	0		C.S.	8a	Gearbox Oil Plug 0 0 9
	. 18	a Return Spring for in. Extended K.S. Axle 0	1	0	İ		9	Gearbox Cover Stud 0 0 3
	18		1	0		,,	10	
	. 18		1	0	-	,,		Gear Box Cover Spring Washer (set of 7) 0 0 4
	19		0	7	į	,,		L.H. or R.H. Cone for Main Gear Wheel L.S.5 0 2 6
	19		0	7	-	11	18	Ball Cup 0 5 0
			0	7	1	"	19	Dust Cap 0 0 3
,,		d Ditto, for 2in, Extended K.S. Axle 0			1	.,		Main Axle Thrust Washer 0 1 6
	20	a Kick Starter Relief Cam 0			1		24	
"	91				1	**	25	L.H. Bail Cup Adjusting Washer 0 0 1
	32	Ball Bearing Cup 0	ó	3	1			
	33		i	6		"	44	
,,	-		•	•	1 1	**	-	Rick Starter Pawl Spring Plunger 0 0 3
					11			

CLUTCH CONTROL.

GEAR CONTROL.

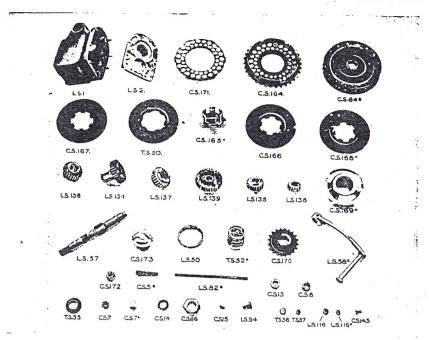
2-PLATE CLUTCH.



## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS.

Sym	bol N					£	S.	d.	1	Sym	bol N	To. f s. d.	
C.S.	63	Pulley Locking	Plate .			. ~0	0	5		L.S.	65	Spring Nut 0 0 6	
	67	R.H. Adiusting	Washer			. 0	0	1	1			Spring Nut Washer 0 0 1	
	68	Clutch Nut				. 0	5	0		,,,	84		
**	69a	Clutch Worm				. 0	1	9			84b	Securing I'eg for Gear Control 0 0 1	
	70a	Clutch Worm L					2	6		C.S	7	Quadrant Stud Nut 0 0 3	
"	72	Clutch Wire Sto		***			1	0			74	Carina Washing	
,,	75	Sliding Gear Pla					2	6		**		Constance with Vech assessed	
,,	106	Bowden Wire S					ō	9		• • •		Casa I assas Data	
Š.	172	Cotter Pin for F				. 0	o	2		••	87	C - C -	
S.	15	Cotter Pin Nut				. ŏ	ő	ī		,,	89	Casa Casassina Dia	
P.		Cotter Pin Wash		dor \			0	i				Tavas Vach	
ŝ.	35	Pulley Locking					0	7		**		Casa I aman Wash Wash	
Ţ.	200						0	:		.,	97		
LS.		Lavshaft Bush				. 0	5			,,		Gear Connection Washer 0 0 1	
L.3.	00					. 0	3	0		**	98	Gear Lever Knob Plug 0 0 2	
		(Only used when	there is	no MICK S	tarter nitted	3).				* *	108	Split Pin 0 0 1	
		CLUT	CH CON	TROL (He	ndle Bar).						133	Support Bracket Clip 0 2 6	
C.S.	72	Wire Nipple (pe					0	6		**	136	Fixing Screw 0 0 4	
C.J.	100	Clutch Control	T doz., .			. 0	4				137	Gear Connection Lock Nut 0 0 1	
.,	101							0		T.S.	46	Gear Control Rod (see Note on Page 17) 0 1 0	
**		Fulcrum					2	6				Gear Control (complete) 1 9 0	
**	102	Half Clip Fulcrum Pin					1	0				SINGLE PLATE CLUTCH (Not Illustrated).	
**							0	1					
::	106a	Fulcrum Pin Nu	ıt .	;		. 0	ŏ	i				(We have not used this Clutch since 1924)	
	106a (90	Fulcrum Pin Nu Fixing Screw	ıt .			. 0	0	1		L.S.		(We have not used this Clutch since 1924). Clutch Outer Plate 0 2 6	
	106a	Fulcrum Pin Nu Fixing Screw Clip Nut	ıt .			. 0	0	1 1		L.S.	49a 80	(We have not used this Clutch since 1924).  Clutch Outer Plate 0 2 6 Axle Nut 0 0 5	
	106a (90	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch	it Inner V	 Vire		. 0	0 0 0	8			80 81	(We have not used this Clutch since 1924)       1. Clutch Outer Plate       0     2     6       Axle Nut        0     0     5       Clutch Adjuster Nut        0     0     0	
	106a K90 K111	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins, Clut	Inner V	Vire	  Cable	. 0	0 0 0 0 2	8			80 81 82	(We have not used this Clutch since 1924).  Clutch Outer Plate 0 2 6 Axle Nut 0 0 5	
.,	106a (90 (111 100a	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control	Inner V	Vire r Bowden	Cable	. 0 . 0 . 0	0 0 0 0 2 12	8			80 81 82 94	(We have not used this Clutch since 1924).       Clutch Outer Plate       0     2     6       Axle Nut        0     0     5       Clutch Adjuster Nut        0     0     0     0       Clutch Rod (see Note on Page 17)       0     0     0	
.,	106a (90 (111 100a 100b	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control ( Clutch Control)	Inner V	Vire r Bowden	Cable	. 0 . 0 . 0	0 0 0 0 2 12	8			80 81 82 94	(We have not used this Clutch since 1924).       Clutch Outer Plate       0     2     6       Axle Nut       0     0     5       Clutch Adjuster Nut      0     0     9       Clutch Rod (see Note on Page 17)      0     0     0       Thrust Fin (see Note on Page 17)      0     0     0	
.,	106a (90 (111 100a 100b 198	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control ( Clutch Control ( Thimble	Inner V ch Oute Complet Complet	Vire r Bowden e e with Wire	Cable	. 0 . 0 . 0	0 0 0 0 2 12 8	8 8		т. <u>ё.</u>	80 81 82 94	(We have not used this Clutch since 1924);       Clutch Outer Plate       0     2     6       Axle Nut       0     0     5       Clutch Adjuster Nut      0     0     0     10       Clutch Adjuster Nut      0     0     0     0     10       Clutch Bod (see Note on Page 17)      0     0     10       Thrust Pin (see Note on Page 17)      0     0     10       Clutch Ball Retainer      0     0     0	
.,	106a (90 (111 100a 100b 198 199	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve	Inner V ch Oute Complet Complet	Vire r Bowden e with Wire less Wire	Cable es and Stop	. 0 . 0 . 0 . 0 . 0 p 0	0 0 0 0 2 12 8	8 8			80 81 82 94 34	(We have not used this Clutch since 1924);     0     2     6       Clutch Outer Plate       0     2     6       Axle Nut       0     0     9       Clutch Adjuster Nut       0     0     9       Clutch Rod (see Note on Page 17)      0     0     0     10       Thrust Pln (see Note on Page 17)      0     0     10       Clutch Ball Retainer       0     0     10       Clutch Sprocket 3/16in. or 5/16in.     wide       6	
.,	106a (90 (111 100a 100b 198 199	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us	Inner V ch Oute Complet Complet	Vire r Bowden e with Wire less Wire	Cable es and Stop	. 0 . 0 . 0 . 0 . 0 p 0	0 0 0 0 2 12 8	8 8		т. <u>ё.</u>	80 81 82 94 34	(We have not used this Clutch since 1924);       Clutch Outer Plate     0     2     6       Axle Nut     0     0     5       Clutch Adjuster Nut     0     0     0     0       Clutch Adjuster Nut     0     0     0     0     0       Clutch Rod (see Note on Page 17)     0     0     0     0       Thrust Pin (see Note on Page 17)     0     0     0     0       Clutch Ball Retainer     0     0     0     0       Clutch Sprocket 3/16in. or 5/16in. wide     0     16     0       Chain     0     16     0	
.,	106a (90 (111 100a 100b 198 199	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve	Inner V ch Oute Complet Complet	Vire r Bowden e with Wire less Wire	Cable es and Stop	. 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0	8 8		T.S.	80 81 82 94 34 35	(We have not used this Clutch since 1924).       Clutch Outer Plate      0     2     6       Axle Nut      0     0     5       Clutch Adjuster Nut      0     0     9       Clutch Rod (see Note on Page 17)      0     0     10       Intrust Plin (see Note on Page 17)      0     0     10       Clutch Ball Retainer      0     0     10       Clutch Ball Retainer       0     16     0       Cbair       0     16     0     2     6       Clutch Back Plate       0     2     6	
.,	106a C90 C111 100a 100b 198 199 73b	Fulcrum Pin Nu Flxing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us only) per dozen	Inner V ch Oute Complet Complet or Swive ed on H	Vire r Bowden e with Wire less Wire l andlebar Co	Cable es and Stop and Stop es and Stop es and Stop es and Stop es and es	. 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0	8 8 0 0 1 4		T.S.	80 81 82 94 34 35	We have not used this Clutch since 1924	
.,	106a C90 C111 100a 100b 198 199 73b	Fulcrum Pin Nu Fixing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us	Inner V ch Oute Complet Complet or Swive ed on H	Vire r Bowden e with Wire less Wire l andlebar Co	Cable es and Stop and Stop es and Stop es and Stop es and Stop es and es	. 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0	8 8 0 0 1 4		T.S.	80 81 82 94 34 35 50 524 55	(We have not used this Clutch since 1924).       Clutch Outer Plate      0     2     6       Axle Nut      0     0     5       Clutch Adjuster Nut      0     0     9       Clutch Rod (see Note on Page 17)     0     0     10       Intrust Plin (see Note on Page 17)     0     0     10       Clutch Ball Retainer     0     0     10       Clutch Ball Retainer      0     16       Clutch Sproseket 3/16in or 5/16in, wide      0     16       Clutch Back Plate      0     2     6       Clutch Spring     0     1     8       Clutch Spring Collar (fits over L.S. 81)     0     0     0	
.,	106a C90 C111 100a 100b 198 199 73b	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us only) per dozen QEAR CONTROI Quadrant	Inner V ch Oute Complet Complet cr Swive ed on H	Vire r Bowden e with Wire less Wire l andlebar Co	Cable es and Stop and Stop es and Stop es and Stop es and Stop es and es	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0 0	8 8 0 0 1 4		T.S.	80 81 82 94 34 35 50 52a 55 56	(We have not used this Clutch since 1924);     0     2     6       Clutch Outer Plate      0     0     2     6       Axle Nut      0     0     9     9       Clutch Adjuster Nut      0     0     9     9       Clutch Rod (see Note on Page 17)      0     0     10       Intrust Pin (see Note on Page 17)      0     0     10       Clutch Ball Retainer      0     0     10       Clutch Ball Retainer      0     16     0       Chain      0     16     0       Chain      0     1     8       Clutch Back Plate      0     1     8       Clutch Spring      0     1     8       Clutch Spring Collar (fits over L.S. 81)     0     0     6       Cork Insert, Sin, dia, per dozen     0     0     0	
	106a C90 C111 100a 100b 198 199 73b	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us only) per dozen QEAR CONTROI Quadrant	Inner V ch Oute Complet Complet cr Swive ed on H	Vire r Bowden e with Wire e less Wire l landlebar Co	Cable es and Stop ontrol Part	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0 0	8 8 0 0 1 4		T.S.	80 81 82 94 34 35 50 52a 55 56 57	(We have not used this Clutch since 1924).       Clutch Outer Plate     0     2     6       Axle Nut     0     0     5       Clutch Adjuster Nut     0     0     9       Clutch Rod (see Note on Page 17)     0     0     10       Drust Pin (see Note on Page 17)     0     0     10       Clutch Ball Retainer     0     0     10       Clutch Ball Retainer     0     0     10       Clutch Back Plate     0     16     0     2       Clutch Spring     0     1     3     0     1     3       Clutch Spring Collar (fits over L.S. 81)     0     0     0     6       Cork Insert, Jin. dia., per dozen     0     0     0     5       Cork Insert, Jin. dia., per dozen     0     0     0     5	
L.S.	106a C90 C111 100a 100b 198 199 73b	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins, Clut Clutch Control ( Clutch Control ( Thimble Handlebar Leve Wire Nipple (us only) per dozen  GEAR CONTROL	Inner V ch Oute Complet Complet Er Swive ed on H (See I	Vire  T Bowden ( e with Wir  Liss Wire  Landlebar Co.  Hustration	Cable es and Sto s and Stop ontrol Part	. 0 . 0 . 0 . 0 p 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0 0 0	8 8 0 0 1 4 6	=	T.S.	80 81 82 94 34 35 50 52 55 56 57 77	(We have not used this Clutch since 1924).       Clutch Outer Plate     0     2     6       Axle Nut      0     0     5       Clutch Adjuster Nut      0     0     9       Clutch Rod (see Note on Page 17)      0     0     10       Intrust Pin (see Note on Page 17)      0     0     10       Clutch Ball Retainer      0     0     10       Clutch Ball Retainer      0     16     0       Clutch Back Plate      0     2     6       Clutch Spring      0     1     2     6       Clutch Spring      0     0     5       Cork Insert, Sin, dia., per dozen      0     0     5       Cork Insert, Jin, dia., per dozen      0     0     3       Clutch Spring Cup     0     3     0	
L.S.	106a (90 (111 100a 100b 198 199 73b	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet Sins. Clut Clutch Control of Thimble Handlebar Leve Wire Nipple (us only) per dozen <b>GEAR CONTROL</b> Quadrant Support-Bracke Index Plate	Inner V ch Oute Complet Complet er Swive ed on H (See i	Vire  r Bowden of e with Wire less Wire  l  landlebar Co  llustration	Cable	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0 0	8 8 0 0 1 4 6 6 0 0		T.S	80 81 82 94 34 35 50 52 55 56 57 77 14	(We have not used this Clutch since 1924)	
L.S.	106a (90 (111 100a 100b 198 199 73b 41 59a 60 61	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins. Clut Clutch Control of Thimble Handlebar Leve Wire Nipple (us only) per dozen GEAR CONTROL Quadrant Support-Bracke Index Plate Quadrant Bush	Inner V ch Oute Complet Complet er Swive ed on H (See i	Vire  T Bowden of e with Wire less Wire  andlebar Co	Cable cand Stops and Stop control Part	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 2 12 8 0 0 0 5 5 3 1	8 8 0 0 1 4 6 0 0 0		T.S	80 81 82 94 34 35 50 52a 55 56 57 77 14 15a	(We have not used this Clutch since 1924)	
L.S.	106a (90 (111 100a 100b 198 199 73b 41 .59a 60	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins, Clut Clutch Control 1 Clutch Control 1 Clutch Control 1 Clutch Control 1 Wire Nipple (us only) per dozen GEAR CONTROI Quadrant Support-Bracke Index Plate Quadrant Bush Quadrant Stud	Inner V ch Oute Complet Complet Complet cr Swive ed on H (See i	Vire r Bowden ve e with Wire e less Wire l limit and lebar Co llustration	Cable es and Stop s and Stop control Part	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 0 2 12 8 0 0 0	8 8 0 0 1 4 6 0 0 6		T.S	80 81 82 94 34 35 50 52a 55 56 57 77 14 15a 27	(We have not used this Clutch since 1924)   Clutch Outer Plate	
L.S.	106a (90 (111 100a 100b 198 199 73b 41 .59a 60 61 .62	Fulcrum Pin N: Fixing Screw Clip Nat 6 6 fect of Clutch 5 fect Sins. Clut Clutch Control 1 Thimble Handlebar Leve Wire Nipple (us only) per dozen Guadrant Support-Bracke Index Plate Quadrant Bush Quadrant Bush Quadrant Bush Quadrant Bush	Inner V ch Oute Complet Complet Complet Complet Complet t t	Vire	Cable es and Stop ontrol Part	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 0 2 12 8 0 0 0	8 8 0 0 1 4 6 0 0 6 3		T.S	80 81 82 94 34 35 50 52a 55 56 57 77 14 15a	(We have not used this Clutch since 1924).  Clutch Outer Plate 0 0 2 6 Axle Nut 0 0 0 5 Clutch Adjuster Nut 0 0 0 9 Clutch Rod (see Note on Page 17) 0 0 10 Clutch Ball Retainer 0 0 10 Clutch Ball Retainer 0 0 10 Clutch Ball Retainer 0 16 Clutch Ball Retainer 0 16 Clutch Ball Retainer 0 16 Clutch Barl Retainer 0 16 Clutch Spring 0 16 Clutch Spring Collar (fits over L.S. 81) 0 10 Cork Insert, Jin. dia., per dozen 0 0 5 Cork Insert, Jin. dia., per dozen 0 0 5 Clutch Body Locking Washer 0 0 1 Clutch Body Locking Washer 0 0 1 Clutch Body Locking Washer 0 0 1 Clutch Centre 0 1 2 Clutch Centre 0 1 2 Clutch Centre 0 1 6	
L.S.	106a (90 (111 100a 100b 198 199 73b 41 .59a 60 61 .62	Fulcrum Pin Ni Fixing Screw Clip Nut 6 feet of Clutch 5 feet 8ins, Clut Clutch Control 1 Clutch Control 1 Clutch Control 1 Clutch Control 1 Wire Nipple (us only) per dozen GEAR CONTROI Quadrant Support-Bracke Index Plate Quadrant Bush Quadrant Stud	Inner V ch Oute Complet Complet Complet Complet Complet t t	Vire r Bowden ve e with Wire e less Wire l limit and lebar Co llustration	Cable es and Stop s and Stop control Part	. 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0	0 0 0 0 0 2 12 8 0 0 0	8 8 0 0 1 4 6 0 0 6	12	T.S	80 81 82 94 34 35 50 52a 55 56 57 77 14 15a 27	(We have not used this Clutch since 1924)   Clutch Outer Plate	

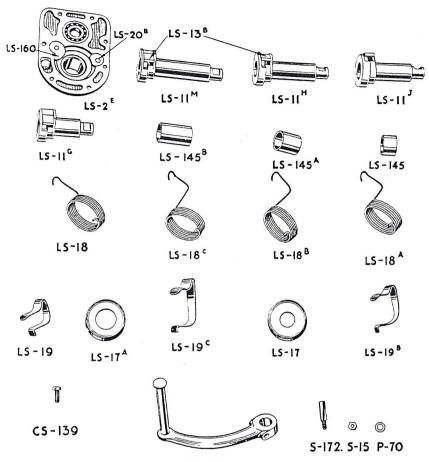
### 3-SPEED HEAVYWEIGHT AND 3-PLATE CLUICH.



## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS.

		-			CDDING DDIIDNO.	
Symbol No.	£	s. d	1 1	Symbol	No. f s, d	
L S. 43 Clutch Centre	ñ ı	2 0	1			
(Only used where 34in, Chain Line is required).	0 1	2 0	1	C.S. /	Gearbox Nu 0 0 3	
TWO PLATE CLUTCH.			1	" /	7a Gearbox Nut Domed and Plated 0 0 8	
	21.0	9 9			4b Belt Pulley, 1in 0 15 0	
L.S. 46 Clutch Centre	0 1	2 0	1	170	) Axle Sprocket (§in. × §in. Chain) 0 7 6	•
., 47 Clutch Sprocket, in. P. x 3/16in. W. (Cork			- 1		(Note: -An Extra charge is made for sprockets	
Inserts)	1	3 0			with more than 19 teeth).	
,, 47a Clutch Sprocket, in. P. × 5/16in. W. (Cork				LS. 66		
Inserts)	1	3 0		., 143		
,, 50 Roller Cage (less Rollers)		2 0				
, 47 Clutch Sprocket \(\frac{1}{2}\)in. \(\frac{1}{2}\)in. (Fibre Inserts)		5 0	- 1	,, 134		
", 47 Clutch Sprocket fla. x 3/1011. (Flore Inserts)				,, 135	Layshaft Pinion 0 5 0	
		5 0	1	., 136	Main Axle Sliding Pinion 0 8 6	
L.S. 50a Roller Cage Plate		0 3	1	,, 137	Layshaft Sliding Pinion 0 10 0	
,, 50b Roller		0 2		., 1138	Main Axle Pinion 0 4 0	
,, 50c Rivet (Set of 8)	0	0 2		., 139	Low Gear and K.S. Wheel 0 10 0	
Roller Cage (complete)	0	4 9		24	Clutch Worm 0 1 9	
" 82a Clutch Rod (see Note on Page 17)		0 10	- 1	122		
,, 94 Thrust Pin (see Note on Page 17)		0 10				
C.S. 172 Adjuster Nut		0 9	1			
L.S. 117 Adjuster Nut Packing Washer				., 25		
E.S. 117 Adjuster Nut Facking Washer				,, 26	Oil Retaining Cap for Clutch Nut 0 0 9	
T.S. 55 Clutch Spring Collar (fits over C.S. 172)		0 6	1 N	., 118	Felt Washer for above 0 0 2	
C.S. 13 Axle Nut		0 5	•	EPAI	M 1925 ONWARDS THE ABOVE GEARS (10-12 PITCH)	
., 14 Axie Nut Lock Washer		0 1	1	FROM	HAVE BEEN FITTED TO ALL LS. GEARS.	
., 15a Axle Key, 3/16in	0	0 3			MAYE BEEN FILLED TO ALL L.S. BEAKS.	
, 166 Centre Plate	0	2 6		PART	S USED ONLY ON BOXES WITH INTERNAL STOP	
171 Friction Ring with Fibre Plugs	0	5 0			FOR KICK STARTER	
" 171 Friction Ring with Fibre Plugs		5 0			FOR KICK STARTER.	
" 173 End Cap	0	1 6		L.S. 21	FOR KICK STARTER.  E Gearbox Cover 0 16 0	
,, 173 End Cap	0	1 6		L.S. 21	FOR KICK STARTER.  E. Gearbox Cover 0 16 0  G. Kickstarter Axle (Standard) 0 12 6	
", 173 End Cap	0	1 6 2 6 2 6		L.S. 2E	FOR KICK STARTER.  E Gearbox Cover 0 16 0  G Kickstarter Axle (Standard) 0 12 8  H Kickstarter Axle 1 in. extended 0 12 8	
, 173 End Cap	0 0	1 6 2 6 2 6 1 8		L.S. 2E	FOR KIGK STARTER.  E Gearbox Cover	
	0 0 0	1 6 2 6 2 6 1 8 0 5		L.S. 2E	FOR KIGK STARTER.  B. Gearbox Cover	
, 173 End Cap T.S. 49a Clutch Outer Plate , 50, Clutch Back Plate , 52a Clutch Spring , 56 Friction Cork Plug, Jin. dia., per dozen , 57 Priction Cork Plug, Jin. dia., per dozen	0 0 0 0 0	1 6 2 6 2 6 1 8 0 5		L.S. 2E	FOR KIGK STARTER.  B. Gearbox Cover	
173	0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0		L.S. 2E	FOR KIGK STARTER.  B. Gearbox Cover 0 16 0  G. Kickstarter Azle (Standard) 0 12 8  H. Kickstarter Azle 1 in. extended 0 12 8  J. Kickstarter Azle 1 in. extended 0 12 8  M. Ditto 2 in. Extended 0 12 6  B. Kickstarter Pawl 0 1 3  B. Kickstarter Pawl 0 1 3	
173	0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5		L.S. 2E	FOR KIGK STARTER.  B. Gearbox Cover 0 16 0  G. Kickstarter Azle (Standard) 0 12 8  H. Kickstarter Azle 1 in. extended 0 12 8  J. Kickstarter Azle 1 in. extended 0 12 8  M. Ditto 2 in. Extended 0 12 6  B. Kickstarter Pawl 0 1 3  B. Kickstarter Pawl 0 1 3	
	0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0		L.S. 2E	FOR KICK STARTER.	
	0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0		L.S. 2E	FOR KIGK STARTER.	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0		L.S. 2E 11 11 11 13 14 20 16	FOR KICK STARTER.   0 16 0	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2H 11 11 11 11 13 14 20 16	FOR KIGK STARTER.	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0		L.S. 2H 11 11 11 11 13 14 20 16 50	FOR KICK STARTER.     0 16   0   6   0   6   0   6   0   6   0   6   0   6   0   6   0   6   0   6   0   6   0   6   0   0	
173 End Cap 15. 49a Clutch Outer Plate 50. Clutch Back Plate 50. Clutch Spring 56 Friction Cork Plug, Jin. dia., per dozen 57 Friction Cork Plug, Jin. dia., per dozen 58 Friction Cork Plug, Jin. dia., per dozen 59 Friction Cork Plug, Jin. dia., per dozen 50 Spring Cup Securing Peg (Rivetted to T.S. 49a) 50 Friction Cup Securing Peg (Rivetted to T.S. 49a) 51 Sector 16 Study Fixing) 52 Gearbox Cover 63 Friction Fixing) 63 Gearbox Cover 64 It should be noted that a special box is used	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2H 11 11 11 13 14 20 16  L.S. 50 50	FOR KIGK STARTER.	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2H 11 11 11 13 14 20 16  L.S. 50 50	FOR KICK STARTER.	
173 End Cap  T. 49a Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, iin. dia., per dozen  57 Friction Cork Plug, iin. dia., per dozen  77 Clutch Spring Cup  58 Spring Cup Series (Rivetted to T.S. 19a)  78 REATY WEIGHT GEARS THE FOLLOWIN  18 SPRING CUP SCHOOL OF THE PROPERTY OF	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2H 11 11 11 13 14 20 16  L.S. 50 50	FOR KICK STARTER.	
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2H 11 11 11 13 14 20 16 50 50 50	FOR KIGK STARTER.     Garbox Cover   0 16 0     G Kickstarter Azle (Standard)   0 12 6     K Kickstarter Azle (Standard)   0 12 6     K Kickstarter Azle (Standard)   0 12 6     J Kickstarter Azle (Standard)   0 12 6     J Kickstarter Azle (Standard)   0 12 6     B Kickstarter Pawl   0 1 3     B Kickstarter Pawl   0 0 3     B Kickstarter Pawl   0 0 0 3     B Kickstarter Pawl   0 0 0 3     B Kickstarter Cam   0 0 0 3     B Kickstarter Stop Piece   0 0 4     C Kickstarter Stop Piece   0 0 0 4     D Roller Cage (Jass Rollers)   0 2 0 0     B Roller Cage Plate   0 0 0 2 0     C Rivet (Set of 8)   0 0 0 2 0     Roller Cage (complete)   0 0 4 3     Roller Cage (complete)   0 0 4     Roller Cage (complete)   0 0 0 2     Roller Cage (complete)   0 0 0 2	
173 End Cap  T. 49a Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, iin. dia., per dozen  57 Friction Cork Plug, iin. dia., per dozen  77 Clutch Spring Cup  82 Spring Cup Securing Peg (Rivetted to T.S.49a)  FOR HEAVY WEIGHT GEARS THE FOLLOWING  8 USESTITUTIONS ARE MADE (10-12 Pitch).  Cest-Dox (4 Stud Fixing)  2 Greator Core Core Core Core Core Core Core Co	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 2F	FOR KICK STARTER.	
173 End Cap  1.5. 49a. Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  58 Friction Cork Plug, Jin. dia., per dozen  59 Friction Cork Plug, Jin. dia., per dozen  50 Friction Cork Plug, Jin. dia., per dozen  70 Event Core  80 Friction Cork Plug, Jin. dia., per dozen  81 Spring Cup Securing Peg (Rivetted to T.S. 49a)  81 Substitutions Are MADE (10-12 Pltch).  1 Cerbor 16 Stuff Fixing)  2 Gearbox Cover  1 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, it should be clearly explained what position the Control couples.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 2 6 1 8 0 5 0 5 3 0 1		L.S. 500	FOR KIGK STARTER.     Gearbox Cover   0 16 0 0     G Kickstarter Azle (Standard)   0 12 6     K Kickstarter Azle (Standard)   0 12 6     K Kickstarter Azle (Standard)   0 12 6     J Kickstarter Azle (Standard)   0 12 6     J Kickstarter Azle (Standard)   0 12 6     J Kickstarter Azle (Standard)   0 12 6     B Kickstarter Pawl   0 1 3     B Kickstarter Pawl   0 0 3     B Kickstarter Pawl   0 0 0 3     B Kickstarter Pawl   0 0 0 3     B Kickstarter Stop Piece   0 0 4     C Kickstarter Stop Piece   0 0 4     Roller Cage Plate   0 0 0 3     Roller Cage Plate   0 0 0 3     Roller Cage Plate   0 0 0 3     Roller Cage (Complete)   0 0 0 2     C Rivet (Set of 8)   0 0 0 2     C Clutch Rod (see Note on Page (17)   0 0 10     Turnst Fin (see Note on Page (17)   0 0 10     C Turnst Fin (see Note on Page (17)   0 0	
173 End Cap T.5. 49a Clutch Outer Plate 50. Clutch Back Plate 512 Clutch Spring 56 Friction Cork Plug, iin. dia., per dozen 57 Friction Cork Plug, iin. dia., per dozen 67 Clutch Spring Cup 82 Spring Cup Securing Peg (Rivetted to T.S.49a) FOR HEAVY WEIGHT GEARS THE FOLLOWING SUBSTITUTIONS ARE MADE (16-12 Pitch) 1 Gearbox (4 Stud Fixing) 1 Gearbox Cover Insign 1 I should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, it should be clearly explained what position the Control occupies. 2 Gearbox Cover and Control Bracket (used with	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 1 8 0 5 0 5 3 0 0 1 7 6 6 0		L.S. 2F 11 11 11 11 11 11 11 11 11 11 11 11 11	FOR KICK STARTER.	
173 End Cap  T. 49a Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, film dia., per dozen  57 Friction Cork Plug, film dia., per dozen  77 Clutch Spring Cup  82 Spring Cup Securing Peg (Rivetted to T.S.49a)  FOR HEAVY WEIGHT GEARS THE FOLLOWING  8 USESTITUTIONS ARE MADE (10-12 Pitch).  1 Cest-Dox (4 Stud Fixing)  2 Created the Control is bolted direct to the top  of the gear-box. When ordering L.S. 1;  the should be clearly explained what position  the Control couples.  2 Gearbox Cover and Control Bracket (used with  Disc Control on Cover for 1928)	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 1 8 0 5 5 3 0 1 7 6 6 0		L.S. 2F 11 11 11 13 14 20 16 50 50 50 50 50 50 50 50 51 116	FOR KICK STARTER.	
173 End Cap T.5. 49a Clutch Outer Plate 50. Clutch Back Plate 50. Clutch Spring 56 Friction Cork Plug, §in. dia., per dozen 77 Clutch Spring Cup 82 Spring Cup Securing Peg (Rivetted to T.S.49a) FOR HEAVY WEIGHT GEARS THE FOLLOWING SUBSTITUTIONS ARE MADE (10-12 Plitch) 1 Gearbox Cover 1 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, its should be clearly explained what position the Control occupies. 2b Gearbox Cover and Control Bracket (used with Disc Control on Cover for 1928) L.S. 57 Main Azile	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 2 6 1 8 0 5 5 3 0 1 7 6 6 0 8 3 0		L.S. 2F 11 11 11 11 12 16 16 50 50 50 50 50 50 50 50 51 116 116 116 116 117	FOR KICK STARTER.	
173 End Cap T.5. 49a Clutch Outer Plate 50. Clutch Back Plate 50. Clutch Spring 56 Friction Cork Plug, §in. dia., per dozen 77 Clutch Spring Cup 82 Spring Cup Securing Peg (Rivetted to T.S.49a) FOR HEAVY WEIGHT GEARS THE FOLLOWING SUBSTITUTIONS ARE MADE (10-12 Plitch) 1 Gearbox Cover 1 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, its should be clearly explained what position the Control occupies. 2b Gearbox Cover and Control Bracket (used with Disc Control on Cover for 1928) L.S. 57 Main Azile	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 6 1 2 2 6 8 1 0 5 5 5 0 0 1 7 6 0 8 3 2 6		L.S. 21 11 11 11 11 11 11 11 12 14 20 50 50 50 50 50 50 50 50 50 50 116 117 17	FOR KICK STARTER.	
173 End Cap  1.5. 49a. Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  58 Friction Cork Plug, Jin. dia., per dozen  59 Friction Cork Plug, Jin. dia., per dozen  70 Friction Cork Plug, Jin. dia., per dozen  71 Striction Cork Plug, Jin. dia., per dozen  72 Spring Cup Securing Peg (Rivetted to T.S. 49a)  73 For MEAVY WEIGHT GEARS THE FOLLOWING  74 Seebox 16 Stuff Fixing)  75 Gearbox Cover  76 Gearbox Cover  77 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, it should be clearly explained what position to cover for Jin. Jin. Spring Cover and Control Bracket (used with Disc Control or Cover for 1826)  78 Gearbox Cover and Control Bracket (used with Disc Control or Cover for 1826)  79 See Kick Starter Crank 6 \$516 in. Centres  70 See For Por Stud	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 2 6 6 8 3 0 0 5 5 3 0 1 7 6 0 8 3 2 0 5 5		LS. 21 11 11 11 11 11 11 12 12 14 20 16 16 50	FOR KIGK STARTER.	
173 End Cap T.5. 49a Clutch Outer Plate 50. Clutch Back Plate 50. Clutch Spring 56 Friction Cork Plug, §in. dia., per dozen 77 Clutch Spring Cup 82 Spring Cup Securing Peg (Rivetted to T.S.49a) FOR HEAVY WEIGHT GEARS THE FOLLOWING SUBSTITUTIONS ARE MADE (10-12 Plitch) 1 Gearbox Cover 1 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, its should be clearly explained what position the Control occupies. 2b Gearbox Cover and Control Bracket (used with Disc Control on Cover for 1928) L.S. 57 Main Azile	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 6 6 1 2 2 6 8 1 0 5 5 5 0 0 1 7 6 0 8 3 2 6		L.S. 21 11 11 11 11 11 11 11 12 14 20 50 50 50 50 50 50 50 50 50 50 116 117 17	FOR KICK STARTER.	
173 End Cap  1.5. 49a. Clutch Outer Plate  50. Clutch Back Plate  50. Clutch Spring  56 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  57 Friction Cork Plug, Jin. dia., per dozen  58 Friction Cork Plug, Jin. dia., per dozen  59 Friction Cork Plug, Jin. dia., per dozen  70 Friction Cork Plug, Jin. dia., per dozen  71 Striction Cork Plug, Jin. dia., per dozen  72 Spring Cup Securing Peg (Rivetted to T.S. 49a)  73 For MEAVY WEIGHT GEARS THE FOLLOWING  74 Seebox 16 Stuff Fixing)  75 Gearbox Cover  76 Gearbox Cover  77 It should be noted that a special box is used when the Control is bolted direct to the top of the gear-box. When ordering L.S. 1, it should be clearly explained what position to cover for Jin. Jin. Spring Cover and Control Bracket (used with Disc Control or Cover for 1826)  78 Gearbox Cover and Control Bracket (used with Disc Control or Cover for 1826)  79 See Kick Starter Crank 6 \$516 in. Centres  70 See For Por Stud	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 2 6 6 8 3 0 0 5 5 3 0 1 7 6 0 8 3 2 0 5 5		LS. 21 11 11 11 11 11 11 12 12 14 20 16 16 50	FOR KIGK STARTER.	

### INTERNAL AND EXTERNAL K.S. STOP PARTS.

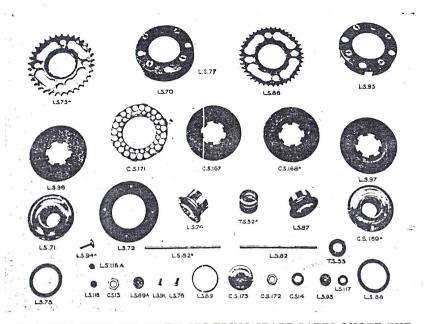


LS-58

## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS.

Symbol No.	€ s. d.	Symbol No.	$f \in d$
C.S. 15a Axle Key, 3/16in	0 0 3	I.S. 142 Clutch Sprocket for in. x in. Chain	1 0 0
	1 6 0	87 Clutch Centre	
	1 8 0		0 0 5
	0 12 0	, 88 Sprocket Securing Ring	
	0 2 6	" 89 Sprocket Split Ring	0 0 4
	0 2 6	, 91 Clutch Driver Screw	. 0 0 1
167 Clutch Centre Plate (Flat)		93 Rubber Shock Absorber	0 0 2
., 168a Clutch Outer Plate	0 2 6	94a Thrust Pin (See Note on Page 17)	. 0 0 10
	0 3 0	95 Clutch Driver	0 8 0
	0 5 0	97 Clutch Back Plate	0 2 6
	0 0 9	116 Fibre Plug, in. dia., per dozen	0 1 0
173 Clutch End Cap	0 1 6	. 116a Fibre Plug, Jin. dia per dozen	0 1 0
T.S. 50 Rack Plate	0 2 6	C.S. 13 Axle Nut	0 0 5
., 52a Clutch Spring	0 1 8	14 Axle Nut Lock Washer	
, 56 Friction Plug, Sin, dia., per dozen (Cork)		167 Clutch Centre Plate (Flat)	0 0 1
	0 0 5	, 167 Chitch Centre Plate (Plat)	
		" 168a Clutch Outer Plate	0 2 6
SPECIFICATION OF 2 PLATE SHOCK ABSORBER		, 169a Clutch Spring Cup	0 3 "
	0 0 2	, 171 Clutch Friction Ring with Fibre Plugs	
in dia Balls (Set of 16)	0 0 6	, 172 Clutch Adjuster Nut	0 0 9
72 Clutch Sprocket Back Plate	0 2 6	173 Clutch End Cap	0 1 6
. 82 Clutch Rod (See Note on Page 17)	0 0 10	T.S. 52a Heavy Clutch Spring	0 1 8
., 86 Clutch Sprocket, 5/16in. or 3/16in. width	1 0 0	55 Clutch Spring Collar (Fits over C.S.172)	0 0 6
		the party of the p	

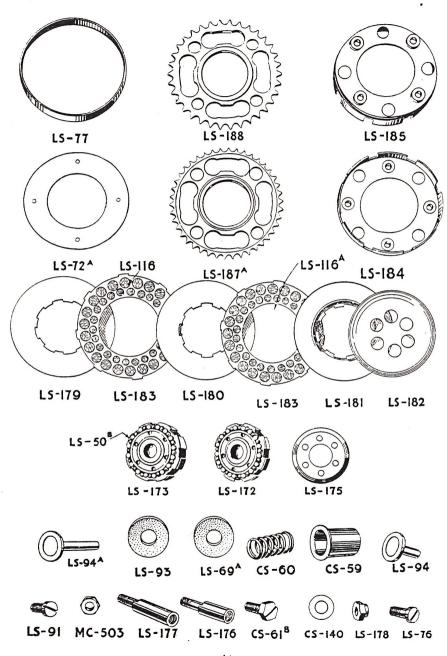
### 2 and 3 PLATE SHOCK ABSORBER CLUTCHES.



## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS.

GEARBOX NUMBER AND							EDING LETTERS.
SPECIFICATION OF 3 PLATE SHOCK ABSORBE	R C	UT	CH		Sym	bol No	o. f s. d.
Symbol No.		1 5					Clutch Spring Box 0 0 4
I C FOR U. D.II.		0	0 2			60	Clutch Spring
in. dia, Balls (Set of 16)			0 6				Clutch Spring Screw 0 0 2
" 69a Rubber Shock Absorber			0 2		M.C.	503	Nut for Clutch Driver Screw 0 1
,, 70 Clutch Driver			8 0				PLATE MULTI-SPRING SHOCK ABSORBER CLUTCH.
, 71 Clutch Spring Cup			3 0		L.S.	700	Clutch Sprocket Back Plate 0 2 6
,, 72 Clutch Sprocket Back Plate			2 6		L.S.		
, 73a Clutch Sprocket lin. × lin. & lin. × lin.			0 0		**	93	Clutch Driver Screw 0 0 1 Shock Absorber Rubber 0 0 2
			2 0		1.7		Thousand Italian
,, 74 Clutch Centre	***		0 5				Clutch Friction Plug, \$\frac{1}{2}\text{in. diam.} \qquad \qquad 0 0 1
76 Clutch Driver Screw			0 1		**		
L.S. 77 Clutch Outer Cover			0 10		2.0	173	Clutch Friction Plug, in. diam 0 0 1 Clutch Centre 0 17 6
" 82b Clutch Rod (see Note on Page 17)			0 10		**		Sprocket Locking Ring 0 1 0
" 89 Sprocket Split Ring			0 4		.,	175	
,, 94a Thrust Pin (see Note on Page 17)			0 10		**	177	Clutch Spring Stud 0 0 6 Clutch Spring Stud Nut 0 0 2
96 Clutch Back Plate			2 6		***	178	Clutch Back Plate 0 2 6
, 116 Fibre Plug, sin. dia., per dozen			1 (		**		Ciutch Dack Hate
" 116a Fibre Plug, Jin, dia., per dozen			i		L.S.	180	Clutch Centre Plate 0 2 6 Clutch Outer Plate 0 2 6
C.S. 13 Axle Nut	**		0 5			182	Clutch Spring Box Plate 0 2 6
, 14 Axle Nut Lock Washer			0 1		"	183	Clutch Friction Plate with Fibre Plugs 0 5 0
" 167 Clutch Centre Plate (Flat)			2 6		**	185	Clutch Driver 0 8 0
168a Clutch Outer Plate			2 6		**		Clutch Sprocket (\$in. × \$in. × 34T) 1 0 0
, 171 Clutch Friction Ring with Fibre Plugs			3		**	100	Clutch Sprocket (fin. × fin. × 34T) 1 0 0
" 172 Clutch Adjuster Nut			5 (		**	1004	Clutch Rod 0 0 10
., 173 Clutch End Cap		0	1 6		•		Main Axle 0 13 0
T.S. 52a Heavy Clutch Spring		n	1 8		C.S.	13	Axle Nut 0 0 5
55 Clutch Spring Collar (fits over C.S. 172			0 6	á		140	Axle Lock Washer 0 0 1
		r			"	59	Clutch Spring Box 0 0 4
TWO PLATE SHOCK ABSORBER MULTI SPRING CL	UTC	HP.	ART	8.	,,	60	Clutch Spring 0 0 2
L.S. 172 Clutch Centre		0 1	7 6	3	*1	61h	Clutch Spring Screw 0 0 2
" 175 Sprocket Locking Plate			1 (		MC		Nut for Clutch Driver Screw 0 0 1
., 176 Clutch Spring Stud		0	Ò é	3 1			
, 178 Clutch Spring Nut			0 3		MO	DEL 4	4 PLATE MULTI-SPRING SHOCK ABSORBER CLUTCH.
179 Clutch Back Plate					L.S.	72a	Clutch Sprocket Back Plate 0 2 6
. 180 Clutch Centre Plate		ŏ.	2 6			76	Clutch Driver Screw 0 0 1
, 181 Clutch Outer Plate		0	2	6		76a	Clutch Driver Bush 0 0 0
. 182 Clutch Spring Box Plate		0	2		.,	93	
, 183 Clutch Friction Plate with Fibre Plugs		0	5				Thrust Pin 0 0 10
184 Clutch Driver		0	8	0		116	Clutch Friction Plug, fin. diam 0 0 1
,, 187 Clutch Sprocket (42T in. x 3/16ths in.)		1	0 1	0		116a	Clutch Friction Plug, in. diam 0 0 1
" 187a Clutch Sprocket (42T lin. x 5/16ths in.)		1	0	0	**	174	Clutch Centre 0 17 6
189 Clutch Rod		0	0 1	0		175	Sprocket Locking Plate 0 1 0
192 Main Axle		0 1	13	0	,,	177	Clutch Spring Stud 0 0 6
72a Clutch Sprocket Back Plate		0	2	6		178	Clutch Spring Stud Nut 0 0 2
91 Clutch Driver Screw		0	0	1		179	Clutch Back Plate 0 2 6
, 94 Thrust Pin		0	0 1	0	. ,,	160	Clutch Centre Plate 0 2 6
., 116 Friction Plugs, 2in		0	0	1	**	181	Clutch Outer Plate 0 2 6
116a Friction Plugs, in		0		1	,,		a Citual Spring DOX Frate
C.S. 13 Axle Nut		0		5	,,	183	
" 14a Axie Nut Lock Washer		0	0	1 .	"	186	Clutch Driver 0 8 0

### MULTI-SPRING SHOCK ABSORBER CLUTCHES.



## TO AVOID MISTAKES WHEN ORDERING SPARE PARTS QUOTE THE GEARBOX NUMBER AND PRECEDING LETTERS

Symbol No:	d. I Svi	mbol No:
L.S. 188 Clutch Sprocket (\$\frac{1}{2}\text{in.} \times \frac{2}{3}\text{in.} \times 34T) 1 0		
		S. 106 Gate Seat Tube Control Lever with Cranked
		Arm 0 5
		. 106a Ditto, with Straight Arm 0 5
	0	
14- 4-1- 1 11: 1	5	L.S. GATE CONTROL FITTED ON BOX (See page 4).
	1 15	5. 105 Control Fulcrum Stud 0 0
" 59a Clutch Spring Box 0 0	4	
" 60 Clutch Spring 0 0	2	110 Divisió Car Carata
,, 61b Clutch Spring Screw 0 0	2	
M.C. 503 Nut for Clutch Driver Screw 0 0	1	191 Spring Washer
L.S GATE CHANGE CONTROL FITTED UNDER TAN	,	
(See page 4).	۸. ,,	107 C . 15 1 .
	1 6	
L S. 103 Gate Support Bracket (adjustable pattern) 0 5	0	128 Long Gear Lever with Knob fitted 0 5
,, 105 Control Fulerum Stud 0 0	9	. 129 Control Rod (Gate on Box Type) 0 1
" 104 Lower Clip Bracket (adjustable pattern) 0 5	0 C.S.	
, 107 Gear Lever with Knob 94a fitted 0 5	0 "	, 87 Gear Connection 0 0
. 108 Control Gate	0 "	89 Gear Connection Pin 0 0
., 110 Support Bracket Securing Screw 0 0	4 "	, 97 Gear Connection Washer () ()
" 110a Support Bracket Securing Washer 0 0	1 ,,	, 108 Split Pin (per dozen) 0 0
111 Screw for Gate Control Clip 0 0	4	, 137 Gear Connection Lock Nut 0 0
" 112 Clip for Gate Control 0 2	6 . "	151 Grover Washer for Stud L.S. 124 0 0
" 113 Rivets for Gate Control (per dozen) 0 0	6	
" 120 Sleeve Nut for Gate Control 0 0	5	L.S. DISC CONTROL FITTED ON BOX (See page 3.)
., 121 Spring Washer for Control 0 0	4 15	41 Control Condens (Post of Post
L.S. 129a Gear Control Rod (see Note below) 0 1	11	
	10	
" 89 Gear Connection Pin 0 0		
, 97 Gear Connection Washer 0 0	ī "	61 Quadrant Bush 0 1
,, 108 Split Pin (per dozen) 0 0	6 "	
L.S. 137 Gear Connection Lock Nut 0 0	1 ,.	
GATE CHANGE CONTROL COMPLETE 1 7	6	
When ordering Gate Control parts it is	",	
absolutely essential that an explanation is	,,	
given as to the make of Motor Cycle for	,,,	
which it is required, and whether the control	.,	102 Control Bracket 0 3
is fitted to the Saddle Down Tube or Under	,,	
the Tank.	,,	130 Control Rod (See Note below) 0 1
	C.S.	. 7 Nut for Control Bracket and Stud 0 0
L.S. 140 Gate Support and Lower Clip Bracket in one		83d Long Gear Lever with Knob, Shallow set 0 6
piece for 81 in wide Tank 0 7	6	83b Long Gear Lever with Knob, Standard set 0 6
" 140 Ditto, with Control Gate fitted 0 12	6	74 Spring Washer for C.S. 84a 0 0
GATE CONTROL FITTED TO SADDLE DOWN TUBE.		
L.S. 109a Gate Support and Clip Bracket for Gate Seat	,,	07 66
Tube Control, overall length 48 in 0 7	6 ,,	100 C C 15:
, 109 Ditto, Overall length 3in 0 7		
Note.—Overall length referred to above is		
measured from centre of Saddle Down	**	197 Coop Company Last M.
Tube to inside of Control Gate,		
onno onto,	,,	151 Grover washer for Quad Stud () ()

Speedwell "Crimsangere Light" Lubricant in 1lb. tubes at 1/10 each.

### Notes.

#### CLUTCH ROD LS82 AND THRUST PIN LS94.

The following list gives correct lengths of these two parts for each type and size of clutch:—

	Clutch Rod.	Thrust Pin.		Clutch Rod.	Thrust Pin.
Single Plate	 7½"	₹"	3 Plate Shock Absorber	71 "	13"
Two Plate	 74"	₹"	3 Plate Shock Absorber, 32		
2 Plate 31 Chain Line	 78"	13"	chain line	78"	13"
2 Plate Shock Absorbe:	 71"	13"	4 Plate	71 "	13"
3 Place	 73"	3"	4 Plate Shock Absorber	75"	13"

GEAR CONTROL ROD. TS46 and LS 129/130. This Rod is supplied in various lengths so as to allow the position of the Control to be adjusted to suit individual requirements. When ordering, it is therefore essential to give the length of rod required, and also explain whether the measurement is taken from the Rod only or includes the Gear Connection at each end. If the old Rod is cranked to miss the Carburetter or any other fitting, the old Rod should be sent as a sample.

# STURMEY-ARCHER GEARS Ltd. LENTON—NOTTINGHAM—ENGLAND