23rd March, 1959.

692-cc. CONSTELLATION.

(1). Maximum rebore 040". Resultant Capacity. 710.2 cc. (Std. 690.4 cc.)

(2). Distance from crankshaft centre line to top face of block at centre line of cylinders. 234 mm.

(3). Volume of one combustion chamber. 45 cc.

(4). Distance from gudgeon pin centre line to highest point of piston crown. 46 mm.

(5). Weights :-
Flywheel and Crankshaft 10.09 Kg.
Connecting Rod etc. 375.64 gms. Piston with Rings 255.15 gms. Gudgeon Pin 85.05 gms.

(6). Diameter of Valves : Inlet 39.7 mm. Exhaust 34.9 mm.
Dia: of Port at Valve Seat. Inlet 34.9 Exhaust 31.8

(7). Degrees of crankshaft rotation from Zero to :-
Maximum lift : Inlet $167\frac{1}{2}^{\circ}$. Exhaust $172\frac{1}{2}^{\circ}$.
3/4 max. lift. Inlet 107°. Exhaust 110°.

(8). Air Filter: Type - Vokes. No. 44440 (Enfield Number).

(9). Inlet Manifold :-
Diameter of flange at Carb: - 30.2 mm.) Hole
Diameter of flange at Port: - 30.2 mm.) Diameters.

(10). Exhaust :
Diameter at Port :- 34.9 mm.
Diameter at Connection) to Silencer inlet pipe) 38.1 mm. (O/D of Ex. Pipe).

.....

TRADE MARK

MADE LIKE A GUN

THE ENFIELD CYCLE COMPANY LIMITED

CYCLE & MOTOR CYCLE MANUFACTURERS

HEAD OFFICE AND WORKS:-

REDDITCH

CONTRACTORS TO HER MAJESTY'S GOVERNMENT

CODES: A B C. 5TH & 6TH ED
BENTLEY'S 1ST & 2ND PHRASE

YOUR REF.

OUR REF. RAW-J/YEC.

TELEGRAMS:
CYCLES, PHONE, REDDITCH

TELEPHONE:
REDDITCH 121 (9 LINES)

11th February, 1959.

MR. R. THOMAS

Induction Pipes W.42502/42725.
Drawing No. 9242 M/B.

The small connecting well and drain hole in these pipes is not necessary in the case of W.42502 which is used on Apache and Constellation models only, which are fitted with Amal 10TT9 carburettors which cannot flood into the engine.

The presence of this drain hole is said to make starting of these engines difficult in very cold weather, owing no doubt, to the much less drastic means of richening the mixture on the TT carburettor as compared with the Monobloc. Will you please, therefore, amend this drawing so that the well and drain hole are on W.42725 only.

R.A. Jones

Print + note sent to Westwood

THE ENFIELD CYCLE COMPANY LIMITED.

FROM.....MR..R.A..WILSON-JONES.....

.....

TO.....MR..R..THOMAS.....

.....(DRAWING OFFICE).....

.....17th March,.....195 9.

Several cases have been reported recently of fracture of the vertical centre stay to the front mudguard on 'Super Meteor' machines with side-car forks.

Will you please have the gauge of this stay increased from 10 to 8. This will necessitate increasing the length of the 4 studs which secure it to the fork sliders by 1/16", as these studs are in general a little on the short side.

R A Wilson-Jones

Altered on Linen Copy
Stays for Sanction 10 66
all completed

THE ENFIELD CYCLE COMPANY LIMITED.

FROM.....MR..R.A..WILSON-JONES.....

.....

TO.....MR..R..THOMAS.....

.....CHIEF..DRAUGHTSMAN.....

.....26.th.January,.....195 9.

Trouble has been experienced with brake cover plates Part No. 5275 when made in AL.75 or (LM.22W) alloy. Will you please have the Specification altered to LM9.P which apparently has adequate strength and shock resistance and is not liable to distortion, as it is not subject to the solution treatment.

R A Wilson-Jones

27-1-59.

RAW-J/YEC.

29th September, 1958.

MR. G.D. SMITH.

Your memo of the 15th instant is to hand, regarding part numbers and suffixes.

I appreciate your point, that in some cases it is necessary to give a new part number instead of raising a suffix even though the new part is acceptable as a service replacement for the old one.

This state of affairs arrises when it is intended to continue production of a component in both modified and unmodified forms. In this case the unmodified form must be given a new part number and it is not sufficient to raise the suffix, otherwise trouble will ensue when further modifications are required. The ruling must therefore be as follows :-

(1) Modifications which do not affect inter-changeability either way - no change in part number or suffix.

(2) Modifications which permit the modified part to be used as a service replacement for the unmodified one but not vice versa - suffix raised unless the unmodified part is to continue in production.

(3) Modifications which prevent the modified part being used as a service replacement for the unmodified one - or permit it to be so used where both parts are to be produced - new part number.

At the same time, I must emphasize that when a suffix to a part number is raised, this does create a new component, and parts made to the same part number with a lower suffix or no suffix cannot be supplied as service replacements for a part with a higher suffix.

R.A. Wright-Jones

c.c. Mr. J.B. Lovekin.
Mr. E.H. Bailey.
Mr. R. Thomas.
Mr. C.A.E. Booker.

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R.A. WILSON-JONES.

TO MR. R. THOMAS.
DRAWING OFFICE.

12th September, 1958.

Please note that Brockhouse asked for the new clamp type rear tank fitting offered by Messrs. Talboys, for the Constellation model, to be fitted to all Indian twin cylinder machines for 1959.

R.A. Wilson-Jones

Dealt with 15/9/58.

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R.A. WILSON-JONES.

TO DRAWING OFFICE.

26th August, 1958.

The following are the particulars of the Front Fork Spring W.44731 for Model G.2 Madras with 12 gauge Front Fork Tubes.

Outside diameter	1.120/1.130"
Gauge of wire	6 s.w.g. = 0.192"
Length of working portion of Spring	19" with 63 working coils.
Total length of Spring	$20\frac{3}{4}$" with ends ground square, the $1\frac{3}{4}$" additional length being made up by close coils at one end. The total coils $73\frac{1}{2}$.

The rating on Drawing to be quoted the same as for Standard Solex Spring W.40857.

Rant

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. E. THOMAS.

22nd July. 1958

Tubular Spanner Work No. 21166

Will you please have the length of this spanner increased by ½". The extra length is to be between hexagon end and the hole for the tommy bar. ~~This will then become Work No. 21166/A.~~

R A Wilson-Jones

Alteration done on 23-7-58.

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. E. THOMAS.

28th April. 1958.

Springs for Meteor Minor Clutches & Tomahawk

It has been found that these clutches will work satisfactorily and with much lighter operation if fitted with springs the same as used on the Super Meteor, viz: 3 off 29818 14 gauge, 3 off ST181 13 gauge. I believe that Albions know these springs as G78 14 and 13 gauge respectively.

Will you please have the Schedule altered.

R A Wilson-Jones

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. E. THOMAS.

11th March, 1958.

Burgess Silencers

Will you please arrange to have the two small drain holes shown in the end of the silencer replaced by a single hole at the end and underneath the silencer.

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. E. THOMAS.

29th April, 1958.

Range of Automatic Advance of Current Lucas Contact Breakers or Distributors

I am informed by Mr. Crane of Lucas Sales Engineering that the range of advance of the contact breakers or distributors which we are currently using is as follows:-

350 Clipper Model	8 - 10°
Crusader 250	11 - 13°
All twin-cylinder Models (both types of distributor)	11 - 13°

COPY FOR MR. R. E. THOMAS.

WH/BA.
RAW.J/DMH.

29th January, 1958.

W. Hill Esq.,
The Albion Engineering Co. Ltd.,
Tower Works,
Sampson Road North,
BIRMINGHAM, 11.

Dear Mr. Hill,

Many thanks for your letter of the 27th January enclosing print showing suggested modifications to the primary drive of the Ensign gearbox. I note that a sample pair of pinions and a mainshaft will be sent along as soon as possible.

Your drawing is not dimensioned but it would appear that in order to accommodate the 7 m.m. wide Burtonwood oil seal you have thickened the gearbox shell casting by about 1/32". If alterations have to be made to the die I think the diameter of this boss should also be increased as there appears to be rather a weak point adjacent to the corner of the recess for the ball bearing.

I note that you have shown an oil seal 24 m.m. outside diameter which would appear to be in danger of coming in contact with the corner of the ball bearing inner race. I note that there is a 30 m.m. Burtonwood oil seal, catalogue No. M15-30-7 which might be more suitable. Alternatively, is it really necessary to go to the expense of a Burtonwood oil seal here at all as any small leakage past a felt seal only means transfer of oil from the gearbox to the primary chaincase and therefore does not cause any mess? If we are going to build up the casting it would be quite possible to use a felt seal on the lines of that now in use. Will you please let me have your views on these points.

Yours sincerely,

TRADE MARK

MADE LIKE A GUN

THE ENFIELD CYCLE COMPANY LIMITED

CYCLE & MOTOR CYCLE MANUFACTURERS

HEAD OFFICE AND WORKS:-

REDDITCH

CONTRACTORS TO HER MAJESTY'S GOVERNMENT

CODES: A.B.C. 5TH & 6TH ED
BENTLEY'S 1ST & 2ND PHRASE

YOUR REF.

OUR REF. RAW-J/DMH.

TELEGRAMS:
CYCLES, PHONE, REDDITCH

TELEPHONE:
REDDITCH 121 (8 LINES)

28th June, 1957.

MR. R. THOMAS.

Modification to Cylinder Heads for 700 c.c. Twins & Short-Stroke 500 c.c. Twins to take Long Reach Sparking Plugs

Please note that having discussed this matter with our Service Manager it has been decided that modified heads should be given completely new Work Numbers.

The reason for this is that the modified heads are not strictly acceptable as service replacements for old type unless the sparking plugs also are changed. There is also the added complication that if on any particular machine one cylinder head had to be replaced and not the other there will be a long reach plug one side and a short reach the other with the firing points in slightly different positions. This might cause uneven running which would be objected to by the more critical riders. Merely changing the suffix to the Work Number would not suggest the desirability of changing both cylinder heads, whereas by giving entirely new numbers and recording the fact that the old number is replaced by the new one, necessitating a change of sparking plug, attention will be drawn to this point.

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YOUR REF.

OUR REF. RAW-J/DM H.

TELEGRAMS:
CYCLES, PHONE, REDDITCH

TELEPHONE:
REDDITCH 121 (8 LINES)

14th January, 1957.

Mr. R. Thomas.
Mr. J. Freeman.
Mr. B.H. Bailey.

Modifications to Crusader 250

Please note that the following modifications have been authorised by Major Smith:-

Handlebar: This will be Doherty as per samples received. This takes effect after the first 300 machines. O.K.

Control Cables: The cables, which will not be identical to those used on the Enfield bar, will be bought out after the first 500 sets.

Gearbox: Final drive sprocket to be 17 teeth instead of 18 teeth. Mainshaft sliding pinion small end to have 17 teeth cut on 18 tooth blank. According to nomenclature agreed with Messrs. Albion this Part No. will be HJ11/21/17-18. This gear is interchangeable with the standard HJ11/21/18. The alteration to gear parts will take effect as soon as Albions have cleared their stocks of 18 tooth sprockets. This will be after the first 900 sets.

R.A. Wilkinson

THE ENFIELD CYCLE COMPANY LIMITED.

FROM..... MR. R. THOMAS.

.....

TO..... MR. C.A.R. BOOKER
MR. A. DAVIS
MR. V. KILGALLON
CHIEF CLERK.

.....16th January.....195 7.

A scheme has been introduced whereby a suffix is added to the Work Number of all parts when modifications are made which permit the modified part to be used as a service replacement for the unmodified one but not vice versa.

To prevent confusion it has therefore been necessary to issue new Work Numbers for certain parts which already bore a suffix for other reasons. A list of these is attached.

Copy.

REF/PRM.

9th. November 1956.

Mr. R. A. Wilson-Jones.

I have discussed with Mr. Welsher and Mr. Freeman the proposed scheme of adding a suffix to the work number instead of creating a new number when a part is interchangeable with an existing part. We can foresee several disadvantages, some of which I list below:

1) Two interchangeable parts on separate drawings would have the same work number with a different suffix. If both of these drawings were altered, we could not have the same suffix on each and thdrefore the suffix letters on a drawing would not run consecutively. This would be very confusing and we would have too look at all the drawings with the same work number before making an alteration.

2) We cannot record the suffix letters in the Work Number Book. Drawings with the same work number and different suffix letters would have to be cross-referenced. To find a drawing, it would first be necessary to look at several other drawings.

3) Some parts are interchangeable but for other reasons, e.g. price, are not used on all Models. Would these have the same work number?

4) Two parts may be interchangeable on all Models. An alteration to another part on a particular machine could make one of these parts unsuitable or a new Model may be introduced for which one part only is useable. All spares lists showing these parts as interchangeable would then be wrong.

5) Every alteration would mean a new suffix to the

.....work

work number which would have to be altered in the schedules. At present most alterations do not affect the schedule. We should require a new type schedule sheet to record the alterations to suffix letters as we can only erase about three times on the same spot and the printed copies issued to the Works cannot be erased, numbers can only be added.

6) We should require a new card indexing system for issuing prints to the works. At present we record under the drawing number, several work numbers appearing on one card. This would not be suitable for the new system because the same work number, but with different suffix letters, would appear on different cards. We should need about four times the number of cards and boxes as we now use.

I am of the opinion that the proposed scheme would be an advantage only in a very few cases where two parts are completely interchangeable on all Models. At present a new work number is given to a part which is altered affecting changeability.

I would not oppose any new scheme which was considered an improvement but I am very doubtful whether this one would be practicable in the Drawing Office. It would be certain to give us a lot of extra work when we are already understaffed.

R. E. Thomas.

TRADE MARK
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THE ENFIELD CYCLE COMPANY LIMITED

CYCLE & MOTOR CYCLE MANUFACTURERS

HEAD OFFICE AND WORKS:-

REDDITCH

CONTRACTORS TO HER MAJESTY'S GOVERNMENT

CODES: A B C 5TH & 6TH ED
BENTLEY'S 1ST & 2ND PHRASE

TELEGRAMS:
CYCLES, PHONE, REDDITCH

TELEPHONE:
REDDITCH 121 (8 LINES)

RAW-J/DMH.
Our Reference:-

1st November, 1956.

Mr. O. Wythes
Mr. V.L. Young
Mr. C.A.E. Booker
Mr. V.T. Mountford
Mr. G.D. Smith

Mr. R. Thomas
Mr. C.F. Bladon
Mr. H.D. Spencer
Mr. R.W. Sandilands
Mr. C.S. Blundall
Mr. F. Lewis.

The Managing Director has given instructions that, in future, where it is necessary to change the design of a part without affecting its interchangeability, the Part Number shall be given a suffix to distinguish the new part from the old one without having to give an entirely new Part Number, which would suggest that the two components are not interchangeable.

In order to arrive at a workable scheme which can apply to parts manufactured both at Bradford-on-Avon and at Redditch, I have held a discussion with Mr. G.D. Smith, Mr. C.A.E. Booker, Mr. R.W. Sandilands and Mr. R. Thomas. As a result of this discussion the following points appear to me to be desirable. Will you please let me have your views on these.

(1) The suffix shall be in the form of a letter rather than a number - which is already used in some instances as a suffix to indicate oversize or undersize components.

(2) A change of suffix is necessary when a change in material is specified and also when even minor changes are made to dimensions, e.g. changes in machining tolerances. Such changes will mean a re-issue of the drawing to the Production Department concerned and it is necessary to have the latest suffix on the re-issued drawing so as to distinguish it from earlier issues.

(3) The term "still interchangeable" needs amplification. In many instances the modified part can be used as a service replacement for the old part but not vice versa. After careful consideration it appears to me that in these instances it is sufficient to change the suffix

only, though this will necessitate advising all concerned that whereas a component with a later suffix letter can always be used as a replacement part for one having an earlier suffix, the reverse does not necessarily apply,

The alternative of giving an entirely new Part Number when two-way interchangeability is not possible would tend to result in a continued demand for the old Part Number which, if not checked, would result in unnecessary batches of old type components being made when these could in fact be replaced by the later type.

(4) In some cases a modification to design may not affect the interchangeability so far as one model is concerned but may render the new part unsuitable for use as a service replacement on another model. In this case it seems to me that it is necessary to give a new Part Number since the whole scheme rests on the principle that a change in suffix only does not affect interchangeability, at any rate so far as the use of a new component as a service replacement for old machines is concerned. In some instances where special models are supplied to overseas countries, e.g. U.S.A. and India, the reason for a new Part Number may not be apparent to the users. This, however, will have to be accepted if the scheme is to be workable.

(5) In some instances assemblies remain interchangeable although their component parts differ in design, material or method of manufacture and are not themselves interchangeable. In this case the Work Number for the assembly would be given a new suffix but the constituent parts would have new Work Numbers.

(6) I propose that the changes in suffix shall be recorded on the drawings and that the suffix letter shall be put not only after the Work Number but also against the dimension which has been altered and against the corresponding note in the alterations column on the drawing. There will be no record in the Work Number Book showing how many modifications have been made except that when a suffix is added to a Work Number indicating a change, an asterisk will be put against that number in the Work Number Book, thus indicating the need to refer to the drawing to ascertain what is the latest suffix letter.

R.A. Wilson Jones

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. THOMAS.

11th October, 1956.

Modification to Ensign Gearbox Mainshaft

Will you please have the drawing of this altered to show right and left hand helical grooves in that portion of the shaft which is covered by the high gear pinion sleeve.

Added to drawing 9-7-56

Rawt

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. THOMAS.

30th October, 1955.

Please restore to all Schedules the carburetter joint washer which was omitted when Messrs. Amal introduced the rubber "O" ring in the joint face of their Monobloc carburetters.

Rawt

TRADE MARK
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YOUR REF.
OUR REF. RAW-J/DMH.

TELEGRAMS:
CYCLES, PHONE, REDDITCH

TELEPHONE:
REDDITCH 121 (8 LINES)

22nd August, 1956.

MR. R. THOMAS.

Front Fork Springs

The following are the measured or calculated spring rates for front fork springs used on our larger capacity models:-

Solo spring W.40857	calculated 38 lb. per inch measured 39 lb. per inch
Sidecar spring W.40858	calculated 42 lb. per inch measured 42 lb. per inch
Scramble Model spring W.41569	calculated 42 lb. per inch
New Woodsman & Scramble Model spring 1.125" o/d	calculated 48 lb. per inch

41952

I suggest that you revise the rating specifications on the drawing to the following figures:-

W.40857	37-40 lb. per inch GREEN
W.40858	40-45 lb. per inch YELLOW
W.41569	40-45 lb. per inch ~~BLUE~~
41952 New Scramble & Woodsman spring	45-50 lb. per inch. RED

Please also call for distinctive colour markings (single colours - red, green, yellow, blue etc.) on the new Woodsman Scrambler spring and on the standard solo and sidecar springs W.40857 and W.40858.

R. A. Turbett-Jones

COPY

RAW-J/DMH.

8th August, 1956.

MR. J. BRADLEY-LOVEKIN.

With reference to your letter of the 3rd August enclosing revised 1009M Schedule, I will have this checked as soon as possible. There will, however, be nobody in the Drawing Office until Monday next, 13th instant.

I agree the Apache cylinder heads will have to have different Part Numbers from the Trailblazer or Super Meteor heads but am not quite clear as to just how you propose to modify the machining of the ports. All our experimental work was done on a pair of heads and an induction pipe supplied by Mr. Yound some time ago. The induction pipe appeared to be bored straight through at 1.5/32" diameter on both arms. This produces an elongated oval opening at the flange on to which the carburetter bolts, measuring approximately 1.5/16" by 1.5/32". (This is actually the envelope formed by two overlapping elipses). The ports in the heads appeared to be opened out to 1.5/32" minimum for their whole length and there is certainly no point in having the induction pipe and the mouth of the port opened to 1.3/16" if the port has to be reduced to 1⅛" at a point nearer the valve.

Although the ports and pipe on the experimental engine were only 1.5/32" bore, we did find that a 1.3/16" carburetter was beneficial, which is contrary to what one would have expected. Messrs. Amal, however, confirm that when looking for the last ounce of speed it is not uncommon to use a carburetter choke bore larger than the port diameter. We are at the moment carrying out tests with a 1.7/32" bore T.T. carburetter as an alternative to a 1.3/16" G.P. instrument. The latter gave very good results at the M.I.R.A. speed tests but has subsequently given erratic

Mr. J. Bradley-Lovekin. 8th August, 1956.

readings at high speeds on the test bench. As the C.P. instrument is notoriously difficult to tune it is hoped that by increasing the bore size we can get equally good maximum speed with the more easily tuned T.T. type.

Chief Engineer.

c.c.: Mr. V.L. Young
Mr. G.D. Smith
Mr. R. Thomas. ✓

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. THOMAS.

13th July, 195 6.

Fits of Hub Bearings

In order to eliminate the possibility of bearings being fitted too tight in hub barrels or on hub spindles will you please have the following modifications made:-

Hub spindles of Models (except Ensign and loose spindle for quickly detachable wheel) diameter of portion where ball race fits to be reduced by .0003".
Hub spindle for Ensign Model to be reduced by .0006".
Housings in hub barrels Ensign Model, bore to be increased by .0004".

R. A. Wilson-Jones

THE ENFIELD CYCLE COMPANY LIMITED.

FROM MR. R. A. WILSON-JONES. | TO MR. R. THOMAS.

6th June, 195 6.

Herewith please find print of Hepworth & Grandage piston Ref: 13285 which is scheduled for the latest Super Meteors. This has a compression ratio of 7½:1 as compared with 7¼:1 for piston Ref: 12753.

Will you please have a full scale drawing made of this for our records.

R.A.W.J.

RET/LP

March 13th, 1964.

Mr. N. Woodliffe,
la, Eastgate,
LINCOLN.

Dear Mr. Woodliffe,

Your letter asking for details of employment at this Company has been passed to the writer.

It happens that we are needing a Design-Draughtsman with experience on small diesel engines. Have you had any experience in the D.O? We need a man who can work on his own, both on designing and detailing, and more or less run the diesel section of the drawing office.

If you feel that your experience qualifies you for this post will you please write again, stating salary required, and I will be pleased to arrange an interview.

Yours faithfully,

Chief Designer.

THE ENFIELD CYCLE CO. LTD. **RECOMMENDED LUBRICANTS**

	B.P.	CASTROL	ESSO	MOBIL OIL	REGENT or CALTEX/TEXACO	SHELL
Engine 2-Stroke All temperatures	Energol 2-stroke oil (20 : 1)* or ZOOM	XXL (24 : 1)* or 2-Stroke self-mixing (16 : 1)*	2-Stroke oil (16 : 1)*	D. (24 : 1)* or Mobilmix TT (16 : 1)*	2T Motor oil (20 : 1)*	2T (20 : 1)** 2-stroke mixture
Engine 4-Stroke Below 20°F	Energol SAE 20W	Castrolite	Extra 20W/30	Artic	Havoline 20/20W	X-100 20/20W
Engine 4-Stroke 20°F — 50°F (British Winter)	Energol SAE 30	Castrolite or XL	Extra 20W/30	A	Havoline 30	X-100 30
Engine 4-Stroke 50°F — 90°F (British Summer) Gearbox top up Rear Chain	Energol SAE 40	XXL	Extra 40/50	AF or BB	Havoline 40	X-100 40
Engine 4-Stroke Above 90°F	Energol SAE 50	Grand Prix	Extra 40/50	BB or D	Havoline 50	X-100 50
Front Chain† and Front Forks Below 90°F	Energol SAE 20W	Castrolite	Extra 20W/30	Artic	Havoline 20/20W	X-100 20/20W
Front Chain† and Front Forks Above 90°F	Energol SAE 30	XL	Extra 20W/30	A	Havoline 30	X-100 30
Grease Gun Wheel Hubs (Re pack)	Energrease L2	Castrolease LM	Esso Multipurpose grease H	Mobilgrease MP	Marfak Multipurpose 2	Retinax A

MULTIGRADE OILS—Several of the above suppliers offer "Multi-grade" oils rated at S.A.E. 10W/30. These are approved for use at ambient temperatures up to 50°F in 4-stroke engines. Oils rated at S.A.E. 20W/40 are approved for use in 4-stroke engines at all ambient temperatures.

NOTES—*24: 1 = 2 measures per gallon (approx.)
20: 1 = 2½ ,, ,,
16: 1 = 3 ,, ,,
†Not applicable to 250 Clipper, Crusader 250 or Crusader Sports models.
**If supplied pre-diluted must be used at 16: 1 (see instructions on container).