Dynamo Chain 48 Pitches 3·943" centre distance.

125cc. Model RE-48. 30-12-47

The following prints given to Mr Pardoe for issue to George Neale or to Westwood :-

15 T. Mainshaft Pinion	34427 (7689m)	*	Gear Change Adjusting Screw	34563 (7695m)	
Mainshaft Spacing Collar.	34428 "		" " " " Banjo	34564 (RH) 34565 (LH)	"
* " Oil Retainer (Dr. Side).	34429 "		" " Pawl Carrier	34566 (7696m)	
Gear Locating Plunger Body.	34430 "		" " Pawl	34567	"
* " " Plunger.	34431 (7690m)	*	" " " Plunger	34568	"
‡ " " " Spring	34432 "	‡	" " " " Spring	34569	"
*14 T. Final Drive Sprocket	34433 "	*	" Spindle Bush (T/Side)	34570 (7698m)	
*29 T Primary Driven "	34434 "		" " Ratchet	34571	"
16 T Layshaft Pinion	34435 (7692m)		" " Stop.	34572	"
21 T Mainshaft Sliding Pinion	34436 "	*	" " Spindle Bush (D/Side)	34573	"
26 T " Pinion	34437 "	‡	" " Lever Return Spring	34574 (7699m)	
Mainshaft	34438 "	*	" " Return Lever	34575	"
Layshaft	34439 (7693m)	*	" " Spindle	34576	"
27 T Layshaft Pinion	34440 "	*	" " " (Complete)	34577	"
21 T " Sliding Pinion	34441 "		" " Lever	34578 (7700m)	
* Layshaft Bush (Short)	34442 "		" " Arm	34579	"
Gear Change Ratchet Lever	34561 (7695m)	*	" " Lever Stud	34580	"
* " " " " Nut	34562 "	*	Mainshaft Thrust Washer	34583	"

Items marked * issued to George Neale. Items marked ‡ on order. Rest to Westwood

125 cc Model RE. 49. 6-1-48

Print of Clutch Plate 34597 (7715 m) given to Mr Pardoe to send to "Ferodo" re. material.

125cc Model RE-49. Castings. 7-1-48

Clutch Worm Cover	34601 (7716m)	Pattern by Enfield.
Cylinder Head	34582 (7704m)	Dies by Lavender (No patterns)
Primary Chain Case	34581 (1406A)	Pattern by Dowler.
Crankcase (D/Side)	33663 (1404A)	" " "
" (T/Side)	33791 (1403A)	" " " } Quotation Only. Kickstarter Arr. not

125 cc Model RE-49. — 16-1-48

Items marked * Issued to George Neale. Items marked ‡ on order.
Remainder issued to Westwood.

Crankshaft (Flywheel Side)	34584 (7705m)	Kickstarter Gear	34606 (7719m)
" (Driving Side)	34585 (")	" Spindle	34607 (")
Clutch Spring Plate	34589 (")	" Stop Plate	34608 (")
" Drum	34590 (")	‡ Clutch Spring	34617 (")
* " Thrust Member	34591 (7706m)	* Kickstarter Stop Plate Rivet	34609 (7720m)
* " " " Assembly	34592 (")	* " Stop	34610 (")
* Driving Shaft Nut	34593 (")	" Pinion	34611 (")
* Engine Sprocket Roller	34594 (")	" Ratchet	34612 (")
* Clutch Worm	34599 (7716m)	* " Pinion Spindle	34613 (7721m)
" Operating Lever	34600 (")	‡ " Bush	34614 (")
* Screwed Plug	34603 (7718m)	‡ " Ratchet Spring	34615 (")
* Bearing Spacer	34604 (")	‡ " Return "	34616 (")
* Crankcase Seal Collar	34605 (")	* Clutch Thrust Member Disc	34602 (7723m)
* Spring Cap.	34618 (")	* " Plate Rivet	34619 (")
		* Engine-Gear Unit Att. Nut (Front)	34620 (")
* Flywheel Hub (Miller Mag)	34701 (7734m)	~~Kickstarter Cover Backplate~~	~~34695 (7729m)~~
* Cam (" ")	34702 (")		

125cc Model RE-49. — 23-1-48

GEAR CHANGE PEDAL 34766 (7723M) Issued to Westwood

125 cc Model RE-49 — 26-1-48

GEAR CHANGE TRUNNION 34772 (7734M) Issued to George Neale.

19-3-48

"J-47" 500cc. Single

Feed Pump. 1/4" dia plunger. 3/8" Stroke
= 1 pint per 22,596 revs. of Engine. (one side of pump only)
= 5·31 pints/hour at 2,000 revs/min. (" " " ")

496 cc. O.H.V. Vertical Twin.

Feed Pump. 1/4" dia. plunger. 1/2" Stroke.
12:1 reduction = 1 pint per 16,944 revs. of Engine (one side of pump only)
= 7·08 pints/hour at 2,000 revs/min (" " " ")
9:1 reduction = 1 pint per 12,708 revs of Engine (one side of pump only)
= 9·44 pints/hour at 2,000 revs/min (" " " ")

Drg N° 3356m. Single Start Worm & 18T Spindle

19-3-48 Oil Pump Worm Gearing

Centre distance = ·6138" Ratio = 9:1 Helix Angle = 4°56'38"
2 start worm. Lead = 3/16" Worm wheel = 18 T.
Existing Helix angle for Single Start = 2°28'36"

Worm 34995 (7701m)

Centre distance = ·6138" Ratio = 9:1
2 Start Worm. Worm wheel = 18 T - 34 DP.
Circular Pitch = ·0924"
Pitch dia of worm wheel = ·5294"
" " " Worm = ·6982" °/D of Worm = ·756
Helix angle of Worm = 4°-49'

Spindle 34996 (7701m)

Worm Plug 34997 (6728m)

23-3-48 Oil Pump Worm Gearing.

Worm 35002 (6728m)

Centre distance = ·614" Ratio = 6:1
Worm: Double Threaded. 20° Pressure Angle Helix Angle = 6°32'
Pitch = ·1309" Lead = ·2618.
Top dia = ·8114" Corrected Top dia = ·7865"
Pitch dia = ·728"
Root dia = ·6316" " Root dia = ·6067"
Worm wheel
Top dia = 5834" Corrected Top dia = ·6083"

Spindle 35003 (6728m)

496cc. OHV. Vertical Twin. 6 April 48

Oil Release Valve (Crankshaft)

60 lbs □" = 1·945 lbs on $\frac{13}{64}$" dia.

$$F = \frac{8PND^3}{Gd^4} = \frac{8 \times 1.945 \times 4 \times .222^3}{11,500,000 \times .0284}$$

$$= \frac{.6722}{7.0679} = .095" \text{ deflection using spring } 26704 (5996m)$$

11th May 1948

"G-2" Clearance between Driving Shaft Nut & Chaincase (Front half)
= ·252"
·148"

Nut turned back $\frac{1}{16}$" and 16 swg (·064") washer used giving ·253" ·145"
clearance for cork washer.
Use $\frac{1}{4}$" thick cork washer. $\frac{15}{16}$" bore. $1\frac{3}{16}$" o/dia.

"TWIN" clearance between crankshaft & Chaincase (front half) = ·099" ·025"
Recess crankshaft $1\frac{7}{32}$" dia × $\frac{9}{64}$" deep giving
·245" clearance for cork washer.
·161"
Use same washer as for "G-2"

31-5-48 125 cc. Stationary Engine (Base Fixing)

Attachment of Fan Cowling. 3·4460 (7703m)
2 Bosses at bottom $3\frac{5}{16}$" down from ℄ and 3" apart - $1\frac{1}{2}$" each side of ℄.
1 boss on vertical ℄ $5\frac{1}{2}$" up from main centre. Boss stands $\frac{3}{8}$"? back from outside face.

4 June 48. 98cc-14 in Mower. (Old Type) (Sanction 824 M)

The following measurements taken from actual machine:-

$1\frac{11}{32}$" from inside of R.H. Side plate to extreme end of ratchet pinion.
$1\frac{17}{32}$" overall length of ratchet coupling.
$3\frac{31}{32}$" from ℄ Engine to outside face of flywheel.
$7\frac{7}{8}$" overall width of Engine.
$2\frac{3}{4}$" from inside of R.H. Side plate to outside face of flywheel.

---

8 June 48 496 cc. O.H.V. TWIN.

Volume of Combustion chamber with flat topped piston = 46·8 cu. cms.

Compression Ratio with copper/asbestos gasket & flat topped piston = 6·3

With Standard 250 Bullet Piston 24216 (5395 M) = 7·1 Ratio
With Piston as 25057 (7697 M) but with 5/32" dome = 7·07 Ratio
" " " " " 1/8" dome = 6·9 Ratio
" " " " " ·14" dome = 6·97 Ratio
" " " " " ·145" " = 7 Ratio

W.25064 in stock

Volume of Combustion chamber with ·145" dome (7:1 Ratio) = 41·3 c.cs.

---

25 June 48 496 cc. OHV. TWIN.

Volume of Combustion Chambers as measured by Mr Veale =
46·5 ccs (6·3 Ratio) & 47·5 ccs (6·2 Ratio)

One piston was ·015" small on height of crown
∴ correct figure = 46·5 ccs with ·145" dome.
Volume of ·145" dome = 5·5 ccs.
" " 9/32" dome = 10·83 ccs.
" " cut-aways to miss valves = ·4 ccs
∴ Volume of Combustion Chamber with 9/32" domed piston and copper/asbestos gasket = 46·5 + 5·5 − 10·83 + ·4 = 41·57 ccs

C.R. = 248 + 41·6 : 41·6 = 6·96 : 1

496cc OHV. TWIN. 12/7/48

Volume of Combustion Chamber with flat top piston = 52 ccs.

Volume of $\frac{3}{16}$" dome = 7.16 ccs.
Volume of cut-aways to miss valves = -16 ccs.
Volume of Combustion chamber with 3/16" domed piston = 45 ccs.
Compression Ratio = 6.51 : 1

Volume of 3/8" dome = 14.65 ccs.
Volume of cut-aways to miss valves = -.5 ccs.
Volume of Combustion Chamber with 3/8" domed piston = 37.85 ccs.
Compression Ratio = 7.55 : 1

7/16 dome gives 8:1

---

496 cc OHV TWIN. 31-8-48

Dynamo Sprocket 15T. W. 34420.
Overall length was .925" and length of bore was .826"
As fitted to prototypes. Dynamo was not to drawing.
Shaft of Dynamo $\frac{1}{8}$" longer than drawing.

346cc OHV. "G-2" 4-10-48

Oil Pressure Valve Spring for Tappets.

Springs fitted to prototypes were made from carburetter springs.
Free length $1\frac{1}{4}$" No of active coils 12
Outside dia .193" Wire gauge = .022" (24 s wg)
Deflection should be .54" giving load on spring of 3.03 lbs
= pressure of 246 lbs/□"
for pressure of 50 lbs/□" spring load should be .615 lbs
= deflection of .109"

Volume of Combustion Chamber with flat top piston = 52 ccs.

Volume of $\frac{3}{16}$" dome = 7.16 ccs.
Volume of cut-aways to miss valves = -.16 ccs.
Volume of Combustion Chamber with $\frac{3}{16}$" domed piston = 45 ccs.
Compression Ratio = 6.51 : 1

Volume of $\frac{3}{8}$" dome = 14.65 ccs.
Volume of cut-aways to miss valves = -.5 ccs.
Volume of Combustion Chamber with $\frac{3}{8}$" domed piston = 37.85 ccs.
Compression Ratio = 7.55 : 1

$\frac{7}{16}$ dome gives 8:1

---

496 cc OHV TWIN. 31-8-48

Dynamo Sprocket 15T. W. 34420.
Overall length was .925" and length of bore was .826"
As fitted to prototypes. Dynamo was not to drawing.
Shaft of Dynamo $\frac{1}{8}$" longer than drawing.

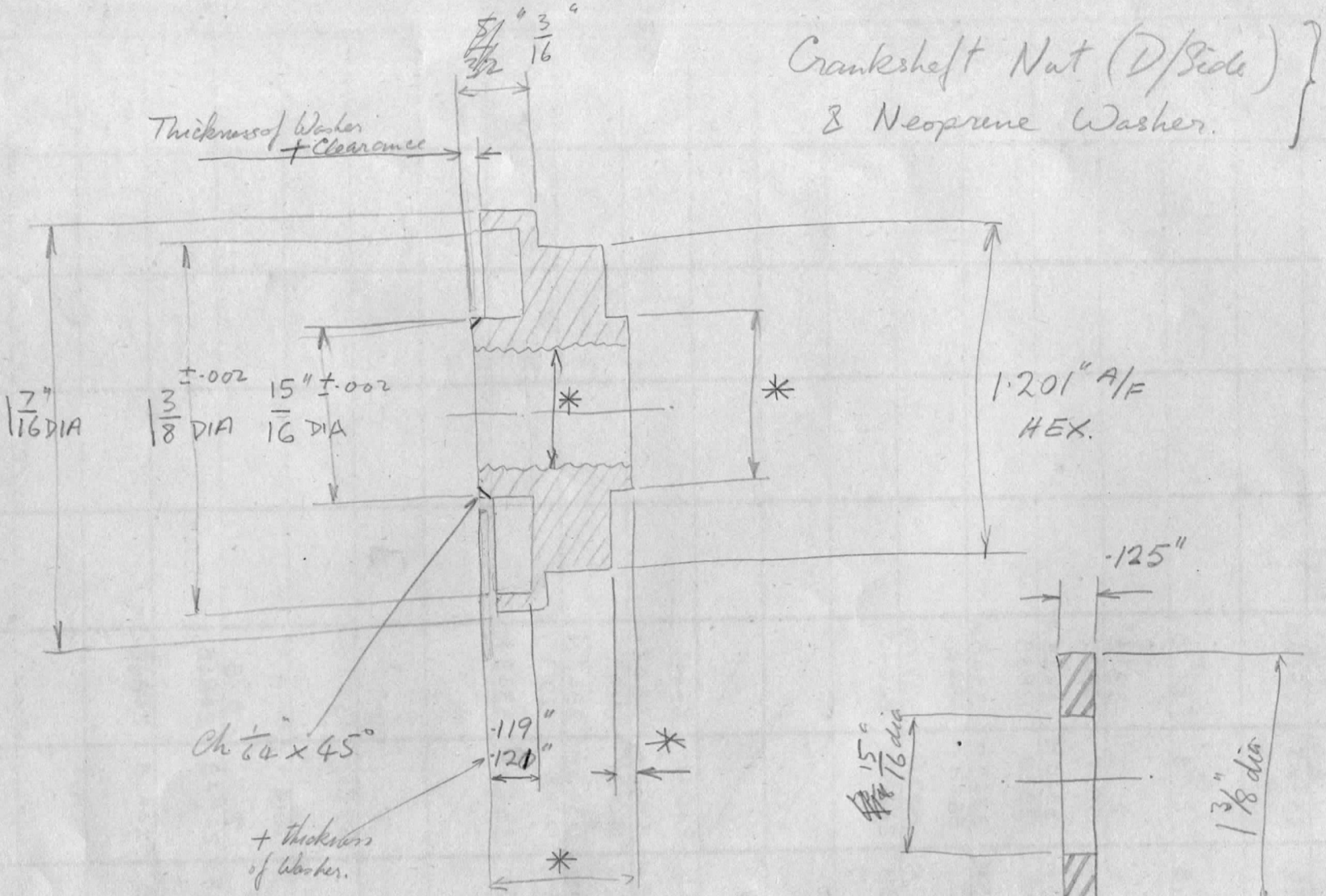
---

346 cc O.H.V. "G-2" 4-10-48

Oil Pressure Valve Spring for Tappets.

Springs fitted to prototypes were made from carburette springs.
Free length $1\frac{1}{4}$" No of active coils 12
Outside dia .193" Wire gauge = .022" (24 s wg)
Deflection should be .54" giving load on spring of 3.03 lbs
= pressure of 246 lbs/□"
for pressure of 50 lbs/□" spring load should be .615 lbs
= deflection of .109"
With spring deflected .54" equal to load of 3.03 lbs, dia of hole to give 50 lbs/□" = $\frac{1}{4}$" dia
Therefore Valve Seat must be sliding and spring has to support pressure on end of seat which is $\frac{1}{4}$" dia. This accounts for stronger spring being necessary.

Crankshaft Nut (D/Side) } "RE-2"
& Neoprene Washer.



M.S. 1 off

Neoprene. 1 off.

as follows :-

Outside dia 3/16". Wire size .018" (26 s.w.g.)
Free length = .95" — 12 complete coils.

Ratio C = 9.44 K = 1.15 S = 52,490 f = .020"

125cc. MODEL R.E-2" 10-11-48

Drawings altered.

~~34593 (7706m)~~ ~~34695 (7729m)~~ 34574 (7699m)
34575 (7699m) 34576 (7699m) 34577 (7699m)
34578 (New Drg N° 6859m) 34579 (New Drg N° 6859m)
34580 (7700m) 34403 (1405A) 34584 (7705m)
34701 (7734m) 34703 (7729m) 33791 (1403A)
34434 (7690m) 34438 (7692m) 34436 (7692m)
34610 (7720m)

New Drawings.

35403 (6853m) Kickstarter Quadrant
35404 (list 36D) Gear Change Spindle Washer.
35405 (6845m) Gear Change Centring Peg.
35411 (6859m) Gear Change Arm Spindle
35453 (6870m) Crankcase Sealing Bush (T/Side)

Schedule :- Add washer for Gear Change Spindle 35404
Add 1 off 1/4" shakeproof washer & 3 nuts 27622 (list 1A) for Gear Change Arm & Lever.

Alterations Outstanding.

Crankcase (D/Side) :- Move Gear box Filler hole towards centre. Use serrated screw with coin slot
Enlarge Carburettor hole to miss Screws. Plug for hole in line with Gear Change Arm Spindle needs "sinking" into crankcase for ease of assembly of engine into frame

Primary Chaincase :- Thinner Walls, No. Drain Plug.
New Crankshaft nut (D/Side) & Neoprene Washer etc. Lighter Clutch Op. Lever
First Clutch to be altered as prototype.
Gearbox Layshaft & Sliding Pinion to be altered.
Mainshaft & Sliding Pinion to be as previous to alteration.

Rigs of Flywheel Mag Hub & Crankshaft (T/Side) altered. If approved will affect design of new Lucas Flywheel Mag

R.E. Clutch 27 Feb 49

Uses Sprocket 35328

Insert Plate 35329

Distance on Clutch Driving Plate = 29/64" from large end of taper to Clutch bearing face (as on 2nd Clutch)

Shorten thrust member 34591 by 1/16" and make allowance for thinner disc; thus dim 9/16" will be 5/32" and 9/32 will be 1/4"

Disc 34602 will be 1/32" thick instead of 1/16"

No keyway in clutch Driving Plate

Shorter studs for extracting.

Particulars of keyway previously in Crankshaft (D/Side) 34585 (7705)

"Keyway 1/2" dia x .126" / .125" wide to suit Key W.17504"

9/32 from large end of taper to ℄ of keyway.

5/32" from ℄ Shaft to bottom of keyway.

E-2. 14-3-49

Distance between flywheel faces 2.632" / 2.620"

Distance from joint face to Bush Head (T/Side) 1.408" / 1.404"

" " " " " Inner Bearing (D/Side) 1.447" / 1.437"

Distance between bearing faces (both cases) 2.855" / 2.841"

Thickness of T/Shaft Thrust Washer .095" / .093"

" " D/Shaft " " .112" / .110"

"RE-2"

Gearbox

Tab Washer reqd. under Mainshaft Sprocket Nut.

Locked to Keyway in sprocket.

Shakeproof Washer Used.

"R.E-2" 18/3/49

Clutch. Driving Plate to be built up.
Spot Weld? ✓ Resistance Weld?
Serrate & rivet over similar to cycle crank and Sprocket?
Spot Weld
also spot weld boss and pressing for gearbox primary drive sprocket. X

Alteration to gearbox mainshaft or layshaft as on present R.E? /

longer spring behind kickstarter ratchet /

Cancel old drawings X

3-5-49
Mail for Gear Change Arm 34579 (6859m) EN 34? ✓

"R.E-2" 13/5/49

Crankshaft (Timing Side) to be redrawn or altered.
And to be shown on Arrangement. ✓

2nd gear position nearer to top?
This would mean ~~allowing~~ longer movement on bottom stop of Stop Plate and increasing the angle to first top tooth on ratchet.

Rectifier Lighting Set RE-47

35964, 35961, 35962, 35963, 19068, 19069, 35965
35931, 35966, 26998, 27916, 24984, 35932, 27001, 27917

1 WIN

June 1st 1949

Width of Dynamo chain 5/16 + 1/32" movement. (Plates 1/32" thick)

" " Camshaft chain 15/32" + 1/16" for spring link + 1/32" movement.

1/8" clearance between chains. 7/8" from face to outside dynamo chain.

1 1/16" from face to inside cover.

Clearance between chains decreased to 1/16" to enable chain N° 110036 to be used. Length of chain reqd. = 38 pitches endless.

Centres = 100 m/m = 3.937" = 10 1/2 pitches.

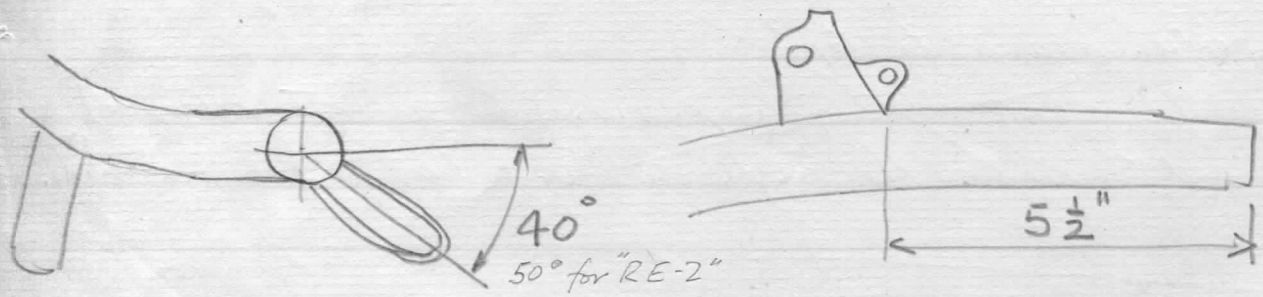
125 cc Stationary Engine with Mechanical Governor. 14-6-49

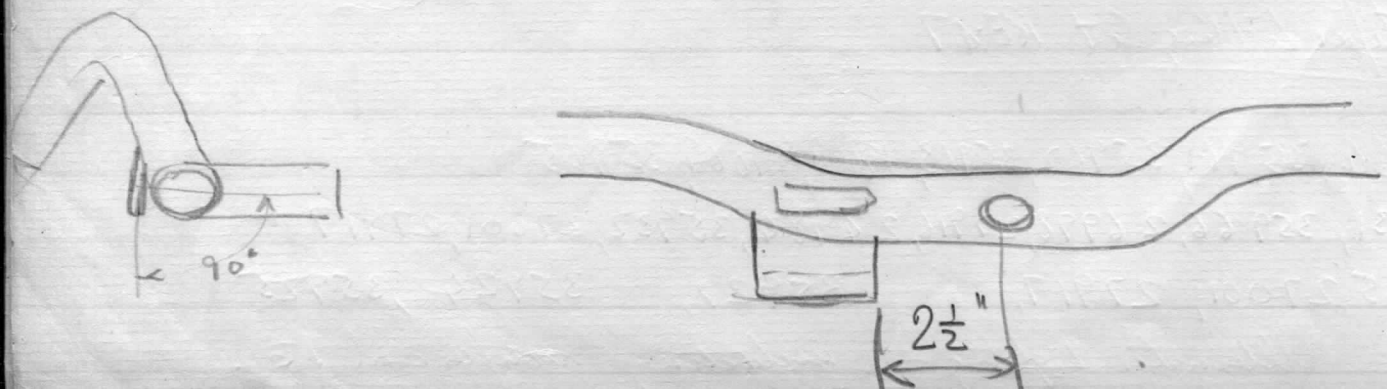
Gear Data – N° of Teeth = 14
Normal D.P. = 24
Angle of teeth = 45° L.H.
O/D = .9084"
Pitch Dia = .8250"
Root Dia = .7286"

3-8-49

"G-2" Detachable Hub Details. 7515m, 7516m

RE Handlebars. Standard Bend. 9.8.49





25

D.O. 18.7.49

Model RE Handlebar
Sanction 889 m

Please note the following alterations to schedule sheet 18 :-

1 off Clutch Cable Adjuster 35791 deleted
1 off " " " Locknut 7367 deleted
1 off " " Nipple (Clutch End) 35792 deleted
1 off " " Adjuster Screwed Bush 35761 deleted.

1 off Clutch Cable Nipple (Gearbox End) 3245 added.

These alterations are necessary as these bars were originally for the Model RE-2 but are now for use on the present Model RE.

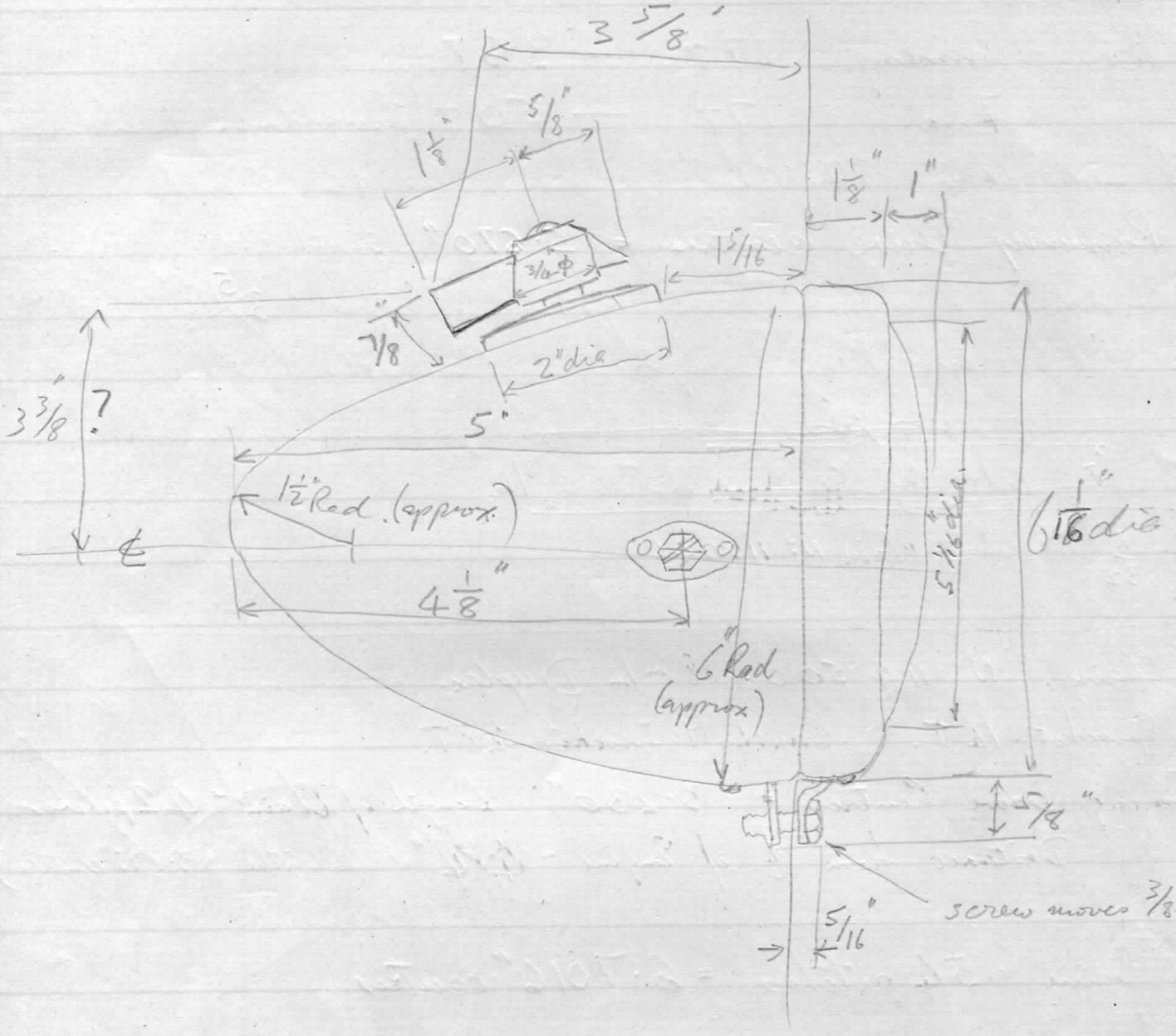
Mr H.J. Guise

✓

Standard RE Headstamp. (Miller) Sept 1st 1949

Distance across fixing position = 6 1/4"

1/4" dia screws, 7/16 A/F x 5/32" thick heads. Shakeproof Washer 1/2" O/dia x 1/32"



Twin Crankcase (1/Side) 34291 (1390A)

Boss added 2 3/4" up from ℄. Machined 1/16" down from joint face.

250 cc. O.H.V. ENGINE — NOV 1ST 1949

Moment of Inertia of Bobweights on S-39 machine = 3.357 in/lbs.
(2 weights each 1.678 in/lbs)

Moment of Inertia of Bobweights on Cast Crankshaft = 3.97 in/lbs
with bobweights each 19/32" wide extending 180°

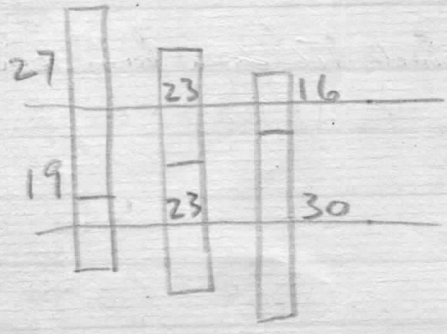
Sprocket Sizes Primary 17T — 36T
Final 17T — 50T Smaller for 24" wheel.

Length of Primary Chain = 50 pitches Chain N° 110046 .5" pitch
Primary Drive centres = 5.670" (52 pitches = 6.187" centres)
Distance of Primary Drive from ℄ of Engine = 3 5/16"

Timing Chain. N° 114 500 8 m/m Duplex.
Engine Sprocket 14 T. Camshaft Sprocket 28 T.
Timing Drive Centres = 3.230" Length of Chain = 42 pitches
Distance from ℄ of Engine = 4 1/4" (42 pitches = 3.875" centres)

Primary Drive - 54 pitches = 6.7016" centres

Gearbox



Bottom 16.5
2nd 8.81
Top 6.2

Gear Centres 1.918" 12/14 Stub Teeth.
1.917"

Gearbox with Sleeve on Layshaft.

Engine Speed 5,000 — Gearbox mainshaft 2,361

Bottom Gear - Layshaft & Sleeve revolving together under load.

2nd Gear - Layshaft speed 1,259 } difference in speeds 1,102
Sleeve speed 2,361 } (sleeve under load)

Top Gear - Layshaft speed 1,259 } difference in speeds 2,096
Sleeve speed. 3,355 } (sleeve & shaft idling)

Jan 9th.

3·25-18 Tyre on WM2-18 Rim.

Sprocket sizes Primary 17T-36T
Final 17T-49T

Gear Ratios Bottom 16·25
2nd 8·67
Top. 6-1

Jan 19th.

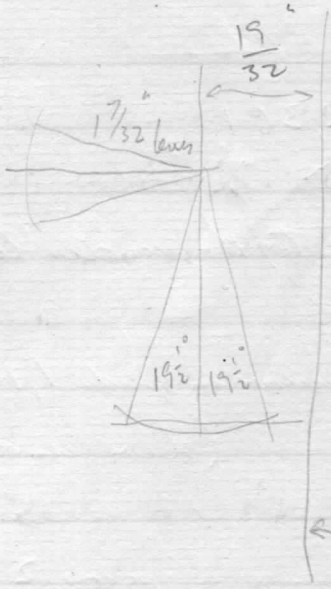
Chain Nº 110036, ·375" pitch × ·25" Roller × ·225"
Chain length 73 pitches
Engine Sprocket 23T Clutch Sprocket 50T
Centre Distance 6·645"

Engine Sprocket 23T Clutch Sprocket 49T

Chain length 74 pitches Centre Distance 6·949"

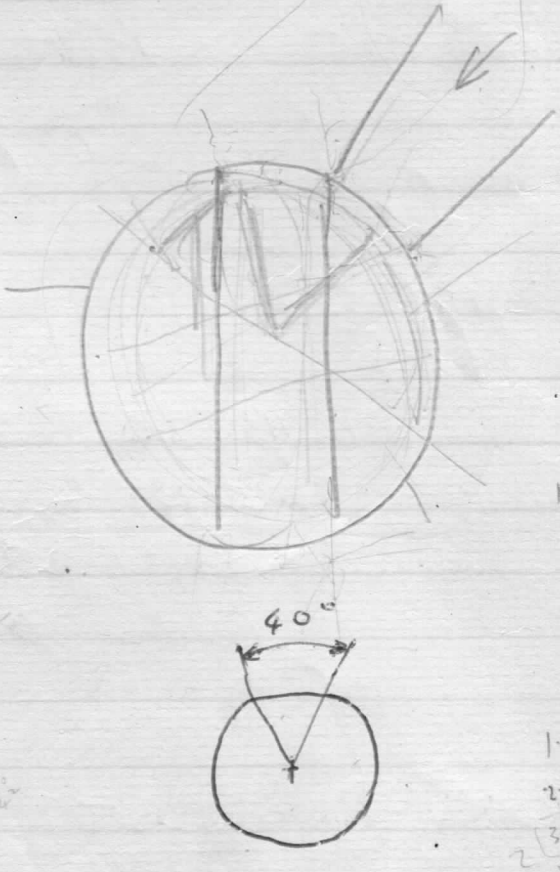
23T : 50T 74 pitches C.D 6·838"

2.571



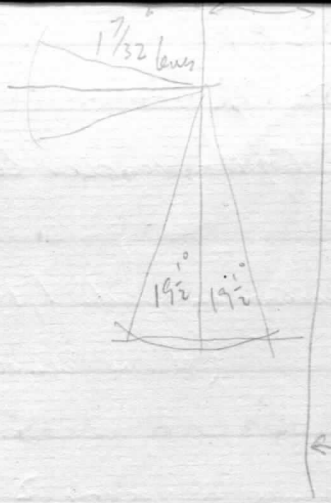
Gear locating Plunger Spring.

·78" Working length. 12 coils 19g. (·040")
·20" o/o Free length 1⅛"
Working load · 25 lbs.



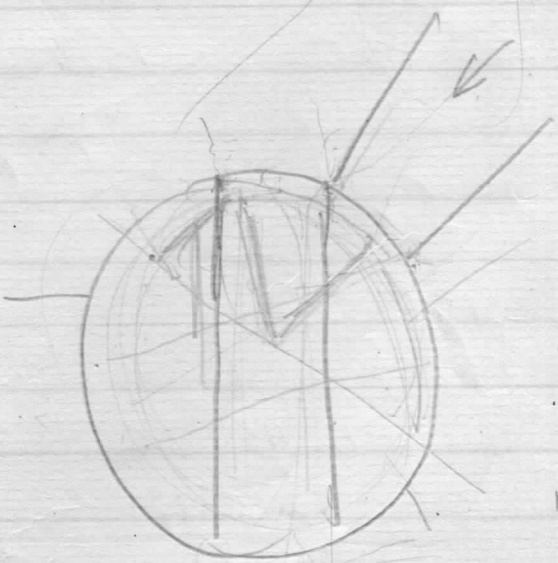
RE-2 Contact Breaker Cam.

·010" Gap at Points = 43° Closed Period.



Gear locating Plunger Spring.

·78" Working length. 12 coils 19g. (·040")
·20" o/o Free length 1⅛"
Working load ·25 lbs.



RE-2 Contact Breaker Cam.

·010" Gap at Points = 43° Closed Period.
·015" —— = 41° ——
·020" —— = 36½ ——.

Work on ·015" Gap at 40° C.P.

Jan 26th

Primary Chain. ·375" pitch x·25" Roller x ·225"
x 74 pitches (endless)

Engine Sprocket 23 T. } distance from ℄ Engine
Clutch " 49 T. } = 3 9/16"

Rear Chain
·500" pitch x ·335" Roller x ·305"

Gear Box Sprocket 17T
Rear Hub " 49T.

Gear Ratios with 3·25–18 Tyre on WM2-18 Rim.
Bottom 16-33
2nd 8-72
Top. 6-14

Gear Box. Main Shaft Gears 16T, 23T, 27T
Lay Shaft Gears 30T, 23T, 19T.

Gear Centres 1·918" 1·917" 12/14 Stub Teeth.

Timing Chain 8 m/m Duplex
Engine Sprocket 14 T.
Camshaft " 28 T.

length of Chain 46 pitches (endless).
Distance from ℄ Engine = 4 7/16"

Kickstarter Gears.
18 T & 36 T 14 D.P. full depth.
= 1·9285" crs.

Breather Timing 80 after T.D.C. opens. 30 after T.D.C. open.

RE-2 7-3-50

Mr Hill of Albion Eng. Co. Ltd requested the following alterations:-

W.34568 } Silver Steel - Hardened & Tempered instead of
W.34631 } M.S. C.H.

W. 35515 3/16 x 32 TPI instead of N° 3 BA.

W. 34433 " " " "

W. 36043 Small End of Taper opened out to 7/16" dia to enable them to use standard broach for keyway.

This shortens actual Taper to approx. 3/8" long.

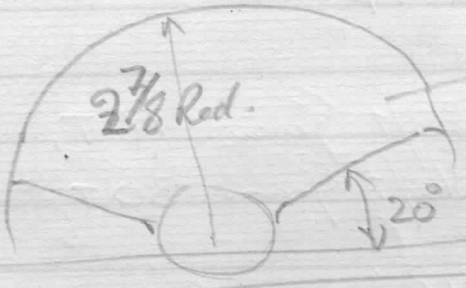
First few sets will be supplied with this modification.

22-3-50

Flywheel

5.3/4 dia inserts rim. Calculate Bobweights to 3.97 in/lbs

Bobweights



Width .575" each flywheel

Kickstarter Cover. 1/2 circle for Rubber Grommet

Hole for Rear Chainguard Attachment.

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1 Stud below Crankcase for attachment of Stand return Spring ✓

Correct Breather Timing for Longer Stroke.

Valves

Inlet as S.39

Exhaust as Dia as Twin - - length as S.39

Std Twin Piston.

Twin Springs etc.

~~Check on length of~~ Valve Guides - Standard S.39

Mar 31st

Pressure of oil at 6000 RPM required to overcome centrifugal force in feeding off-side main bearing
= 30½ lbs.

At 5000 RPM. = 21 lbs.

Pressure of oil required to continue feeding off-side main bearing after hole is filled with oil = 22 lbs at 6000 R.P.M.
& 15 lbs at 5,000 R.P.M.

May 12th.

Top Dia of Kickstarter Spline on Shaft = .729"

Valve Timings

Ex opens. 60° before B.D.C.
" closes 22° after T.D.C.
In opens. 22° before T.D.C.
" closes 60° after B.D.C.

Oil Release Valve (from crankshaft)

60 lbs/□" = 1.657 lbs on 3/16" dia.

$$F = \frac{8PND^3}{Gd^4} = \frac{8 \times 1.657 \times 4 \times .222^3}{11,500,000 \times .0284} = \frac{.58014}{7.0685}$$

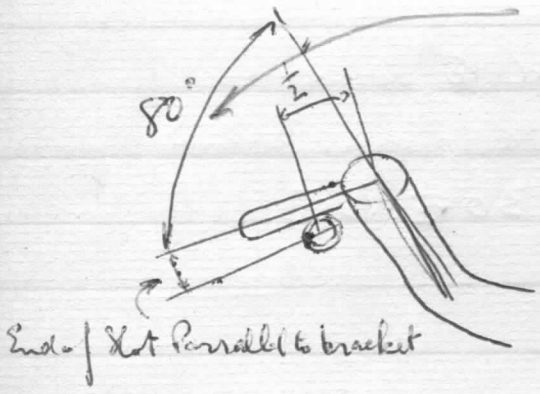
= .082" deflection using spring 26704 (5996m)

Note on Arrangement re. adjustment of Foot Change.

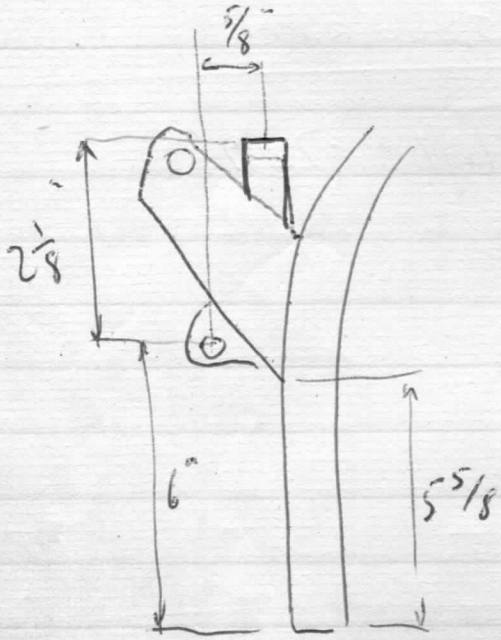
12°

18-8-50 Positions of Brackets & Handlebars

This angle to be 70° — Mr Guise.



End of Throttle Plunger
End of Throttle Cable Stop = 3½
3 3/8 ?



250 cc OHV. Model 13-9-50

CLUTCH SPRINGS

12 H.P at 5,000 RPM = 2,347 RPM of CLUTCH

Allow 50% Safety factor = 18 HP AT 2,347

$$\frac{.32 \times 2\frac{3}{32} \times F \times 4 \times 2347}{63,000} = 18$$

F = 186 lbs = 62 lbs/spring (3 springs)

13 swg (.092") 4 effective coils free length = 1 3/16" Inside dia = .51" dia

$$F = \frac{8PND^3}{Gd^4} = \frac{8 \times 62 \times 4 \times .602^3}{11,500,000 \times .092^4} = .525" \text{ deflection}$$

Stress at Working length = 150,000 lbs/sq in.