



—By *NERUS LTD.*

WHY DON'T THE MANUFACTURERS DO IT? . . .

This article is designed to tell you all about Nerus, their conversions and how they can improve your car. Firstly, however, we feel we should answer the question that must be in every motorist's mind if he is considering a conversion on his car. Namely, if the conversions are so good, why don't the manufacturers do it on new cars?

The answer is that mass production methods prevent modern car engines from even approaching optimum efficiency and they require that one type of engine does duty in a range of vehicles designed for widely different purposes. In addition, the development of export markets throughout the world has prevented engine design taking full advantage of operating conditions in any one area.

Nerus conversions enable the engine of your car to be tailored to suit your particular requirement and the part of the world in which you live, without imposing additional strains upon it and without the costly use of new parts.

Who are Nerus? The Nerus Engineering Company is the development division of the long established Rother Iron Works at Rye, Sussex. After many years of concentrating exclusively on the requirements of motor manufacturers, racing teams and commercial organisations, Nerus are now in a position to offer their experience and highly specialised knowledge to the private motorist.

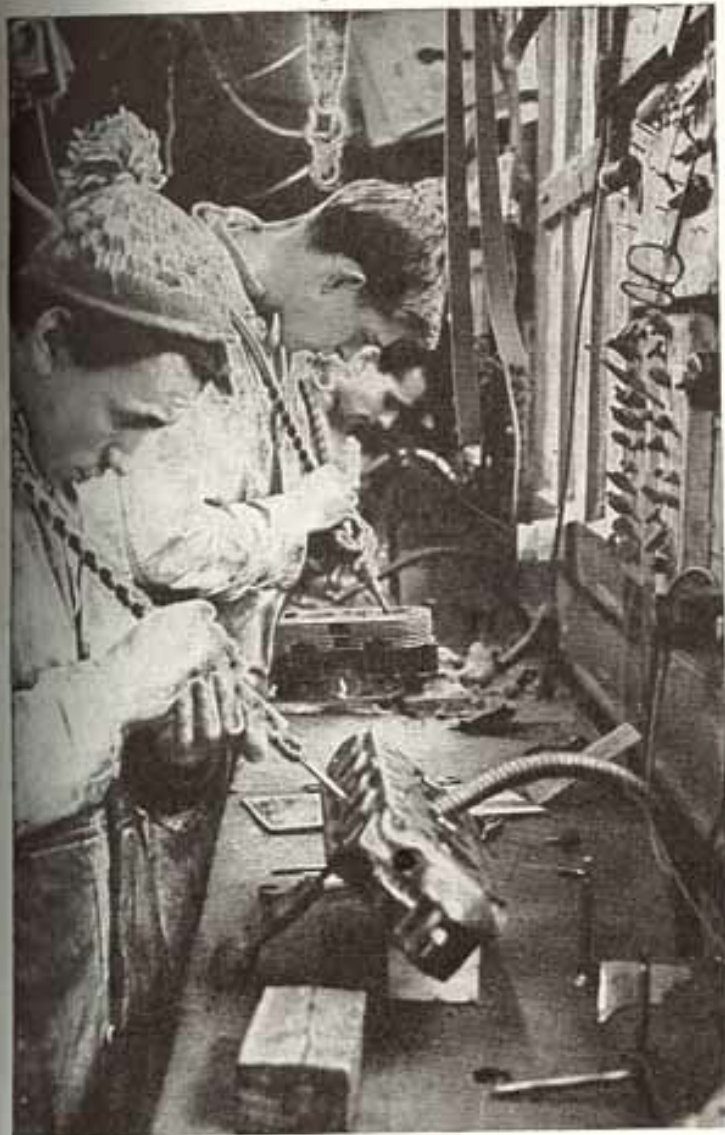
What to Expect. Basically there are three stages of cylinder head conversions, each one specifically designed to improve the overall performance of the car by varying degrees. In all cases the conversions are based on the well-proven air flow principles which improve the thermal efficiency of an engine allowing it to 'breathe' more easily, increasing the power output and at the same time combining flexibility and, in many cases, reduced fuel consumption.

The Conversions in Detail. Stage One conversions use only standard parts and provide improved middle range R.P.M., increased torque and acceleration, allied to efficiency and fuel consumption. This conversion is particularly suitable for firm's representatives' cars, vans, etc., where the cost of the conversion can quickly be made up by the improved petrol consumptions. Stage Two conversions are for use when higher performance figures than Stage One standards are required. Although basically the same as the Stage One head, the Stage Two model has larger inlet valves and stronger springs fitted to increase the R.P.M. Where high road or racing performance is required, the Stage Three head is recommended. This head has larger exhaust valves and double valve springs and capacity B.H.P. can be obtained. The full potential of the head is only realised when additional modifications are made to accommodate its full breathing capacity.

How Are The Heads Fitted? The heads are supplied on an exchange basis. Harespares take your old cylinder head and replace it with a modified head, ready to fit. The conversions can be fitted by any local garage in the time normally taken to fit a standard cylinder head. Once fitted no additional attention is required to keep the car in tune and the conversions are fully guaranteed.

More About Nerus. Although primarily cylinder head specialists, Nerus will undertake development work of a very wide range. Camshafts, airflow equipment, pattern equipment, casting in non-ferrous metals and cast iron, a DPX 3 brake and full machining facilities are available, through Harespares Ltd., Surrey Street, Littlehampton.

Especially for your family Saloon!!



Top: A section of the Machine Shop

- ★ All Nerus conversions are supplied boxed and ready to fit.
- ★ We pay carriage on the return of your old cylinder head as well as on delivery of your new performance conversion.
- ★ Buy out of income on the revolving credit club.
- ★ Be first away—bolt on some extra horse power—Today! See the low prices overleaf now!!!

N.B.—A cash deposit of £10 (refundable) must be enclosed with every order unless your old cylinder head is being returned with your order.

Comparative performance figures of cars in standard factory trim and when fitted with a 'Nerus' bolt on cylinder head conversion.

ACCELERATION FIGURES (Time in Seconds)

Hillman Super Minx 1600c.c. (Stage I)

Through the Gears			Top Gear		
0-30	4.4	(5.7)	10-30	10.3	(-)
0-40	6.8	(9.1)	20-40	9.5	(12.1)
0-50	11.4	(14.19)	30-50	9.8	(12.8)
0-60	15.8	(22.2)	40-60	10.5	(14.8)
0-70	23.2	(33.2)	50-70	12.8	(17.3)
Max. Top 92 m.p.h. (86)					

Riley Elf Mk. II Saloon (Stage II)

Through the Gears			Top Gear		
0-30	4.9	(5.4)	10-30	5.2	(6.0)
0-40	7.9	(8.6)	20-40	6.1	(6.9)
0-50	12.3	(13.9)	30-50	7.8	(8.5)
0-60	18.5	(20.4)	40-60	9.5	(12.6)
0-70	28.7	(35.5)	50-70	18.0	(-)
Max. Top 83 m.p.h. (75)					

Morris 1100 Saloon (Stage III)

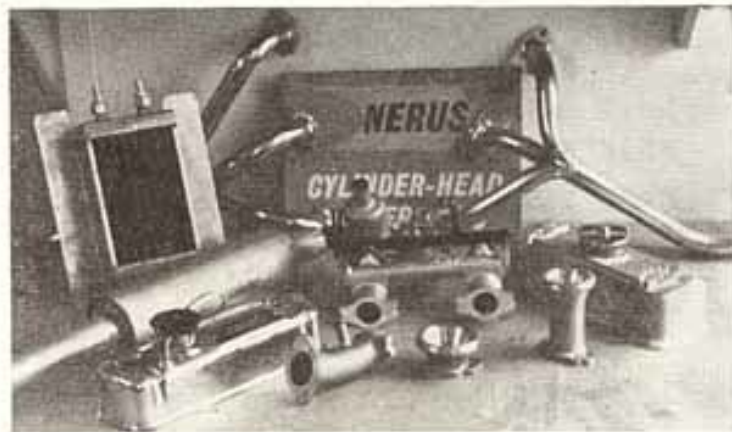
Third Gear			Top Gear		
10-30	7.8	(8.4)	10-30	12.3	(11.9)
20-40	7.2	(7.7)	20-40	11.5	(11.7)
30-50	7.6	(9.3)	30-50	11.5	(12.4)
40-60	9.1	(12.3)	40-60	12.0	(15.3)
50-70	12.1	(-)	50-70	14.4	(22.2)
Max. Top 90 m.p.h. (78.5)					

Sunbeam Alpine Mk. II (Stage I)

0-30	4.8	(4.5)	30-50	16.3	(15.1)
0-40	6.8	(6.6)	40-60	13.9	(16.5)
0-50	9.7	(10.3)	50-70	14.4	(19.0)
0-60	12.3	(14.8)	60-80	14.8	(22.2)
0-70	16.2	(20.3)	70-90	18.9	(35.9)
0-80	21.6	(29.8)			
Max. Top 104.5 m.p.h. (98)					

Performance figures before conversion shown in brackets.

Below: Some typical Nerus equipment



AN EXPLANATION ABOUT B.M.C. CYLINDER HEADS

B.M.C. "A" SERIES CYLINDER HEADS

These heads are now manufactured in two basic types. The first type has been in production since the start of the 'A' Series engine and was fitted initially to the Austin A.30 engine and Morris Minor when this car first employed the B.M.C. engine, these two engines being 803c.c.

This same head was retained when 950c.c. engines were produced and it was also used on the Mini range. This head therefore fits the following:—

- Austin A.30, A.35 and A.40
- Morris Minor 803c.c. and 1000c.c.
- Austin Healey Sprite Mk.1
- All Mini's of 848 capacity including:
- Riley Elf and Wolseley Hornet

This head is converted by 'Nerus' in three stages. The Stage 1 form at £19.10.0, Stage 2 £23.10.0, Stage 3 £30.0.0.

Models subsequent to the above vehicles employ a cylinder head known by B.M.C. as Phase II. This head differs from the initial head in having enlarged induction ports, enlarged inlet valves and a boss cast, drilled and tapped on the front

of the cylinder head for a water temperature pick-up. This head is fitted to:—

Sprite Mk.II, MG. Midget, Cooper Mini and Morris 1100. It is also produced by 'Nerus' in three stages.

'Nerus' Stage II and Stage III heads, whether the early type or Phase II, are all comparable with respect to porting, flows, etc., when completed and, as such, it would only be the thermometer pick-up which would distinguish one head from another.

Further to the head differences, the cylinder blocks of the models employing Phase II heads are fitted with white metal camshaft bearings on all three journals, whilst the earlier engines had a bearing at the front camshaft journal only.

The earlier models are not capable, because of this lack of camshaft bearing, in taking sports camshafts or Stage III double valve spring assemblies, unless they are machined and provided with similar bearings.

It is essential therefore, to know what vehicle that Stage III head is being used on, in order that the valve spring assembly can be made to suit the vehicle.

SOME SPECIMEN PRICES FOR NERUS CONVERSIONS

NERUS B.M.C. "A" SERIES CYLINDER HEAD CONVERSIONS

Suitable for all Minis, A35, A40 and Sprites

Nerus Stage 1 Cylinder Head

For use with standard induction and exhaust systems.

This head is produced with inlet and exhaust ports modified and polished.

The combustion chambers are modified, polished to improve turbulence and burning characteristics, the whole port and combustion chamber systems being converted for optimum gas flow.

Combustion chamber volumes are balanced for improved smoothness and torque at lower R.P.M.

The valve spring assembly is strengthened to give 6200 r.p.m. in the gears.

Non standard parts are not used or fitted, the conversion being a simple cylinder head change.

The main uses of this head are for customers who require improved middle range r.p.m., torque and acceleration allied to improved efficiency and fuel consumption.

It can also be used on vehicles modified for rally work where the regulations are firm with regard to the amount of engine modification allowed.

Another important feature is its suitability for commercial use, i.e. Firms' Representatives' cars, vans, etc., where large mileages are made per annum, the cost of conversion being easily recovered by the improved fuel consumption figures. The head is fully guaranteed and imposes no additional strain on the rest of the engine, indeed, owing to the improved smoothness, the bearing loads are less at any comparable speed range.

Price on exchange basis £19/10/0

Nerus Stage 2 Cylinder Head

For use with standard induction and exhaust systems where

higher performance figures are required than those obtainable with the stage 1 head.

Also designed to have a large margin of potential power increase when allied to twin carburettors, sports camshafts, and tuned exhaust systems, etc.

The head is produced along the same lines and employs the same basic reasoning as Stage 1. However larger inlet valves are used and different springs fitted to give 7000 r.p.m. The same standard of finish and guarantees being maintained.

Price on exchange basis £23/10/0

Nerus Stage 3 Cylinder Head

For use where high road or racing performances are required. This head employs the same inlet valves as the Stage 2 head with the addition of larger exhaust valves and double valve springs and considerably more work in the ports and combustion chambers.

It is a formula head capable of producing 83 b.h.p. at 7200 r.p.m. when fitted to a 1000c.c. engine having the correct camshaft, inlet and exhaust systems, etc. On the Minis with a similar set-up and an engine of standard 850c.c. capacity 72 b.h.p. is obtained.

Obviously when fitted to a perfectly standard car, performances in excess of Stage 2 are obtained, but the full potential of the head is wasted until further modifications are made to accommodate its full breathing capacity.

As previously stated the head was produced for racing and formula junior work and as such has had many successes. It is an essential for anyone wishing to race, though we feel that for the price of £30/0/0, it is an obvious start for anyone with racing in view and only limited capital, as it is the primary essential, further power being then built up in stages as required.

Price on exchange basis £30/0/0

PRICES OF OTHER B.M.C. HEADS, AND HEADS FOR OTHER MAKES OF CAR

B.M.C.	
"B" Series. 1 Stage only (A.60, Morris, Wolseley, Riley, M.G.)	£25 10 0
"C" Series. 1 Stage only (A.110, Wolseley 6/110, Princess, etc.)	£38 0 0
ROOTES	
Minx O.H.V., Gazelle, Rapier, Alpine. 1 Stage only	£25 15 0
HILLMAN IMP.	
Sports Conversion	£33 0 0
Super Sports Conversion	£63 3 0
Nerus J. C. Conversion	£91 0 0
FORD	
(105E, 109E) Stage 1	£21 10 0
(113E, 116E) Stage II	£26 15 0
Stage III	£38 0 0

4cyl. Zephyr, etc. 1 Stage only	£25 15 0
6cyl. Zephyr Zodiac, etc. 1 Stage only	£36 5 0
100E, Popular, Anglia, Prefect, etc. 1 Stage only	£ 9 15 0
STANDARD/TRIUMPH	
Ten, Companion, Herald, Spitfire. 1 Stage only	£19 10 0
Vitesse. 1 Stage only	£32 10 0
VAUXHALL	
Victor. 1 Stage only	£24 15 0
V.X. 4/90. Stage I	£24 15 0
Stage II	£27 5 0
Stage III	£33 0 0
6cyl. Cresta, etc. 1 Stage only	£34 15 0
Special quotations on prepared camshafts, etc. available on request	

NERUS

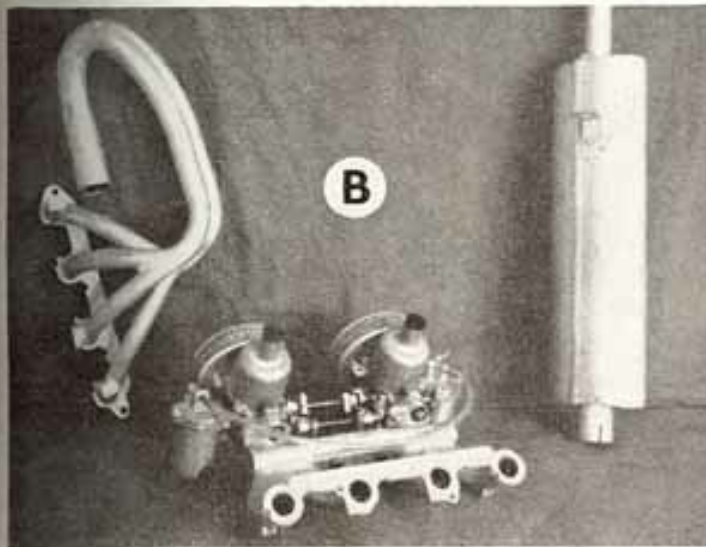
MANIFOLDS...



- A** Twin 1 1/2" S.U. Induction Manifold for the B.M.C. Mini, etc., 'A' Type of engine. Complete with Induction manifold, one 1 1/2" S.U. carb, which is paired up with the existing S.U. carburettor already on the car, two special air cleaners, and a choke/throttle control. (also suitable for 1 1/2" S.U. carburettors). **Price £15/18/0**

NOTE: Due to the design of the standard Mini Manifolds this twin Inlet Nerus Manifold must be fitted in conjunction with a special four branch exhaust manifold, otherwise difficult fitting is involved. **Price £9/9/0 extra**

Cooper Mini .. **£10/19/0 extra**



- B** Sports equipment for the Hillman Imp. Twin Induction Manifold complete with two 1 1/2" S.U. Carbs. and linkages, etc. Air cleaners, and choke control and cable.

£31/4/6

Four branch exhaust manifold system, complete with silencer **£15/15/0**



- C** Chrome plated Mini, Series 'A' Rocker Cover, with famous Nerus label. **£2/10/0** outright purchase. **£1/10/0** exchange if old unit is returned with order.

NOTE: If you wish to return your old rocker cover at a later date, then a refund of **£1/0/0** will be made as long as the outright purchase price of **£2/10/0** has been paid at the time of ordering. Revolving credit customers may have their accounts debited, and then credited in like manner.

- D** Special high-quality polished light-alloy rocker cover for the Mini and 'A' Type of engines. **£4/17/6** each

Prices of other Nerus equipment available upon application.

- E** S.U. ram pipes by Les Leston Ltd. Spun alloy venturis set in a solid cast bracket. Give better aspiration to all S.U. carburettors.

Three Sizes: For H.2 carburettors 1 1/2" dia. **26/3** each
For H.4 carburettors 1 3/4" dia. **27/6** each. For H. 6 carburettors 1 3/4" dia. **28/9** each. **1 1/2"**

- F** Spun alloy S.U. dashpot covers, highly polished to give a wonderful appearance. To fit only H.2 and H.4 carburettors. **7/6** each



- G** Twin S.U. adjusting tool from America, gives quick and easy synchronisation without the usual troubles. In blue plastic wallet with full Instructions **37/6** each
Same Kit but for triple S.U. carburettors **46/-** each

- H** Motometer synchro test. At last accurate synchronising of two or more carbs, made possible, giving: Smooth Idling, Optimum distribution of mixture, Rapid easy starting, Low fuel consumption. With full operating Instructions **90/-** each

- I** Anti friction nylon throttle cables, really allow instant operation of that all important 'Loud pedal'

B.M.C. 1100 **4/9**, Sprite & Cooper **5/6**, Morris Oxford and 1000 **6/-**, Herald 1200 **8/-**