

I. GENERAL CHARACTERISTICS.

| TYPE OF ENGINE | VEHICLES |
|--------------------------|--|
| A 53 (425 cc) | AZ (Series A and AM) 3/1963 → 2/1970 AZU 3/1963 → 8/1967 |
| A 79/0 (425 cc) | AZU 8/1967 → 8/1972 AYA (series A and AM) 8/1967 → 3/1968 |
| A 79/1 (435 cc) | AZ (series A 2) 2/1970 → 9/1975 AZ (serie KB) 9/1975 → 9/1979 AYA 2 (series A and AM) 3/1968 → 9/1975 AZU (series B) 8/1972 → 9/1975 AK (series AP) 9/1975 → 2/1978 |
| M 4 (602 cc) | AYA 3 (series A and AM) 1/1968 → 10/1968 AK → 5/1968 AM 10/1963 → 5/1968 AMB 10/1963 → 5/1968 |
| M 28/1 (602 cc) | AYB (series A and AM) 10/1968 → 2/1970 AZ (series KA) 2/1970 → AY (series CA) 10/1968 → AK (Série B) 5/1968 → 8/1970 AK (series AK) 8/1970 → 2/1978 AY (series CD) 2/1978 → AY (series CD modified) 8/1980 → |
| M 28 (602 cc) | AY (series CB) 2/1970 → AM 2 5/1968 → 3/1969 AMB 2 5/1968 → 7/1969 AM 3 3/1969 → 9/1969 AM (series JA) 9/1969 → 9/1978 AM (series JB and JC) 9/1969 → 9/1978 |

Supplement No. 1 to Manual 816-1 (CORR)

| Type of engine | A 53 | A 79/0 | A 79/1 | M 4 | |
|------------------------|--|--|--|--|--|
| | | | | AYA 3 | AK - AM |
| Number of cylinders: | | 2 CV | 2 (flat twin) | | 3 CV |
| Fiscal rating : | | | | | 602 cc |
| Cylinder capacity : | 425 cc | | 435 cc | | 74 mm |
| Bore : | 66 mm | | 68.5 mm | | 70 mm |
| Stroke : | 62 mm | | 59 mm | | 7.75 : 1 |
| Compression ratio : | 7.5 : 1 | 7.75 : 1 | 8.5 : 1 | | |
| Effective power : | | | | | |
| ISO : | 13.2 kW (18 CV SAE) at 5000 rpm | 15.5 kW (21 CV SAE) at 5450 rpm | 17.7 kW (24 CV DIN) at 6750 rpm | 20.6 kW (28 CV SAE) at 5000 rpm | 19.1 kW (26 CV SAE) at 4500 rpm |
| Maximum torque | | | | | |
| ISO : | 2.9 m.daN (2.9 m.kg SAE) at 3500 rpm | 3.1 m.daN (3 m.kg SAE) at 3500 rpm | 2.9 m.daN (2.9 m.kg DIN) at 4500 rpm | 4.5 m.daN (4.4 m.kg SAE) at 3500 rpm | 4.1 m.daN (4 m.kg SAE) at 3500 rpm |

| Engine type | M 28 | M 28/1 | | | |
|-------------------------|--|--|--|---------|--|
| Engine plate | AM 2 | AK 2 | A 06/635 | AM 2 A | AM 2 L.P.G. |
| Number of cylinders | | | 2 (flat twin) | | |
| Fiscal rating | | | 3 CV | | |
| Cylinder capacity | | | 602 cc | | |
| Bore | | | 74 mm | | |
| Stroke | | | 70 mm | | |
| Compression ratio | 9 : 1 | | | 8.5 : 1 | |
| Effective power | | | | | |
| ISO | 21.5 kW (30 CV DIN) at 5750 rpm | 19.1 kW (26 CV DIN) at 5500 rpm | 21 kW (29 CV DIN) at 5750 rpm | | 18 kW (25 CV DIN) at 5000 rpm |
| Maximum torque | | | | | |
| ISO | 4.1 m.daN (4.2 m.kg DIN) at 4000 rpm | 4.1 m.daN (4 m.kg DIN) at 3500 rpm | 3.8 m.daN (4 m.kg DIN) at 3500 rpm | | 3.6 m.daN (3.7 m.kg DIN) at 2500 rpm |

Cooling : Forced air.

Lubrication : pressurized system supplied by an oil pump of the « EATON » type, mounted on the end of the camshaft.

- Built-in filter cartridge on M 28/1 and M 28 engines 11/1969 → 11/1970.
- External filter cartridge on M 28/1 and M 28 engines 11/1970 →

Carburation : (See table of Operation A. 142-00).

- Intake silencer : with dry interchangeable element.
- Fuel used } Super grade for M 28 engine
 } Ordinary grade for all other types of engines.

Ignition :

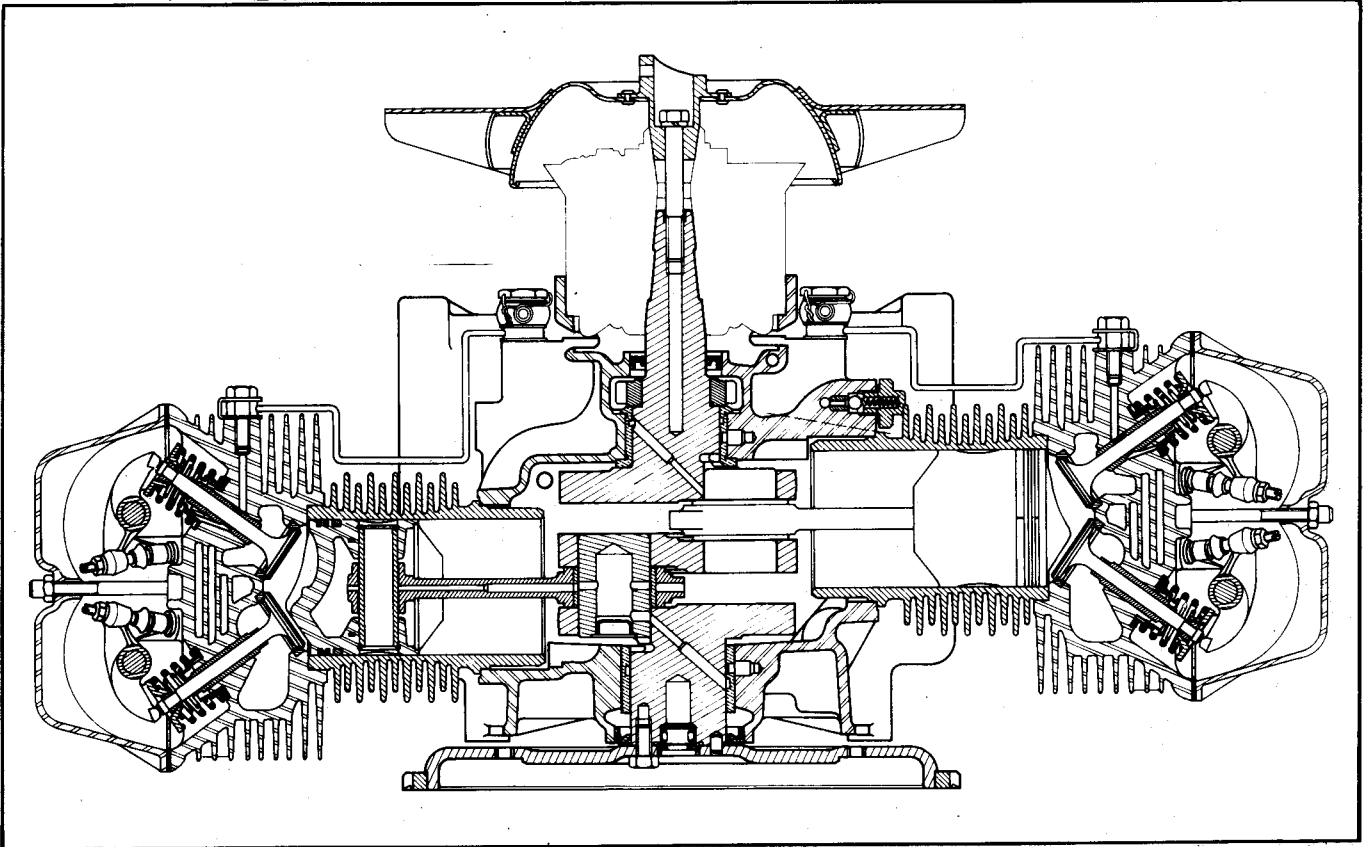
- Distributor on camshaft end, at the front of engine.
- Manufacturer : DUCELLIER.
- Sparking plugs : *See appropriate Technical Bulletins.*
- Firing order : 1 - 2.

Distribution :

- Camshaft below crankshaft (timing gear with self adjusting device for wear).
- Maximum run-out of the spindle for distributor = 0.02 mm (.0008 in).

ENGINE A 53 and A 79/0
HORIZONTAL SECTION

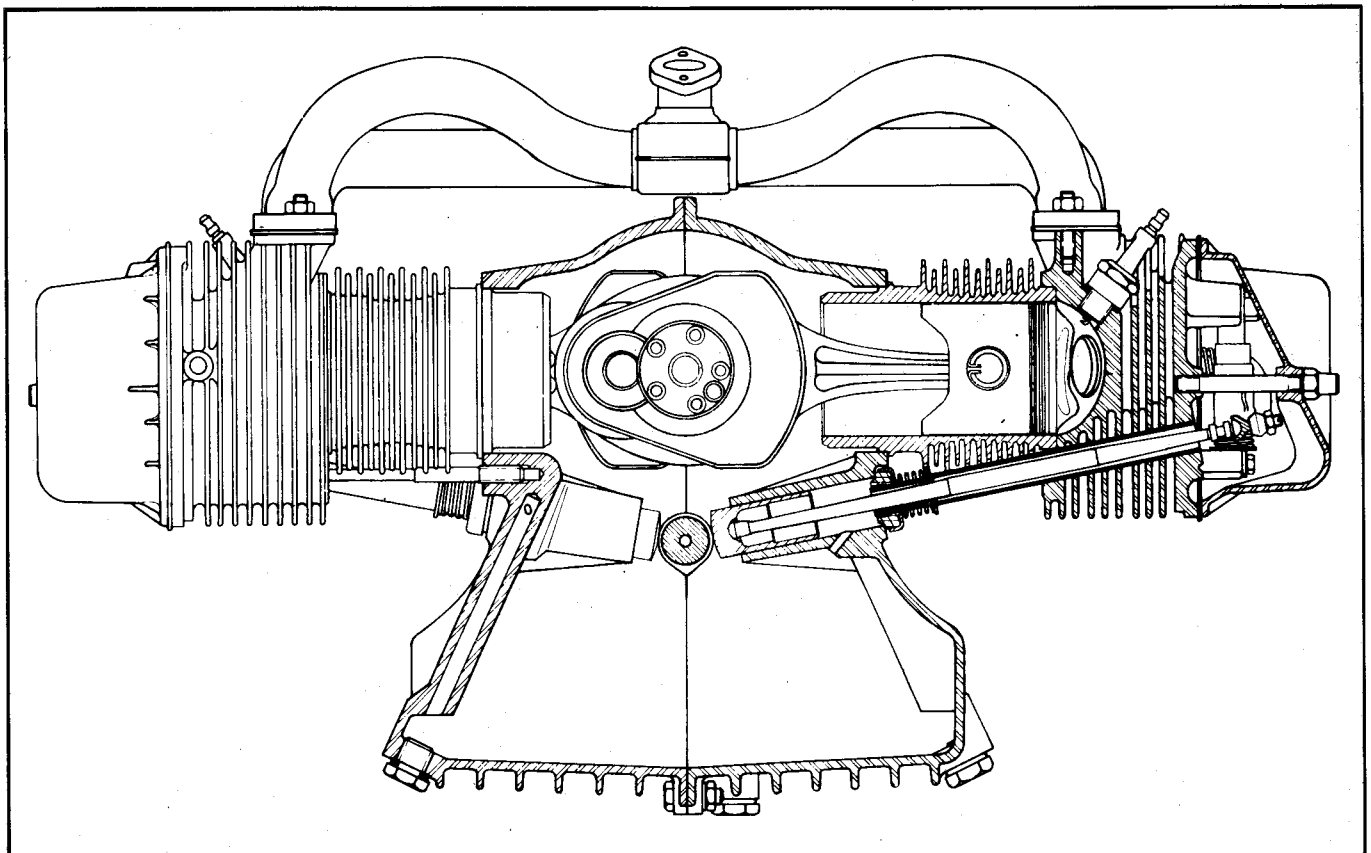
A 10-4



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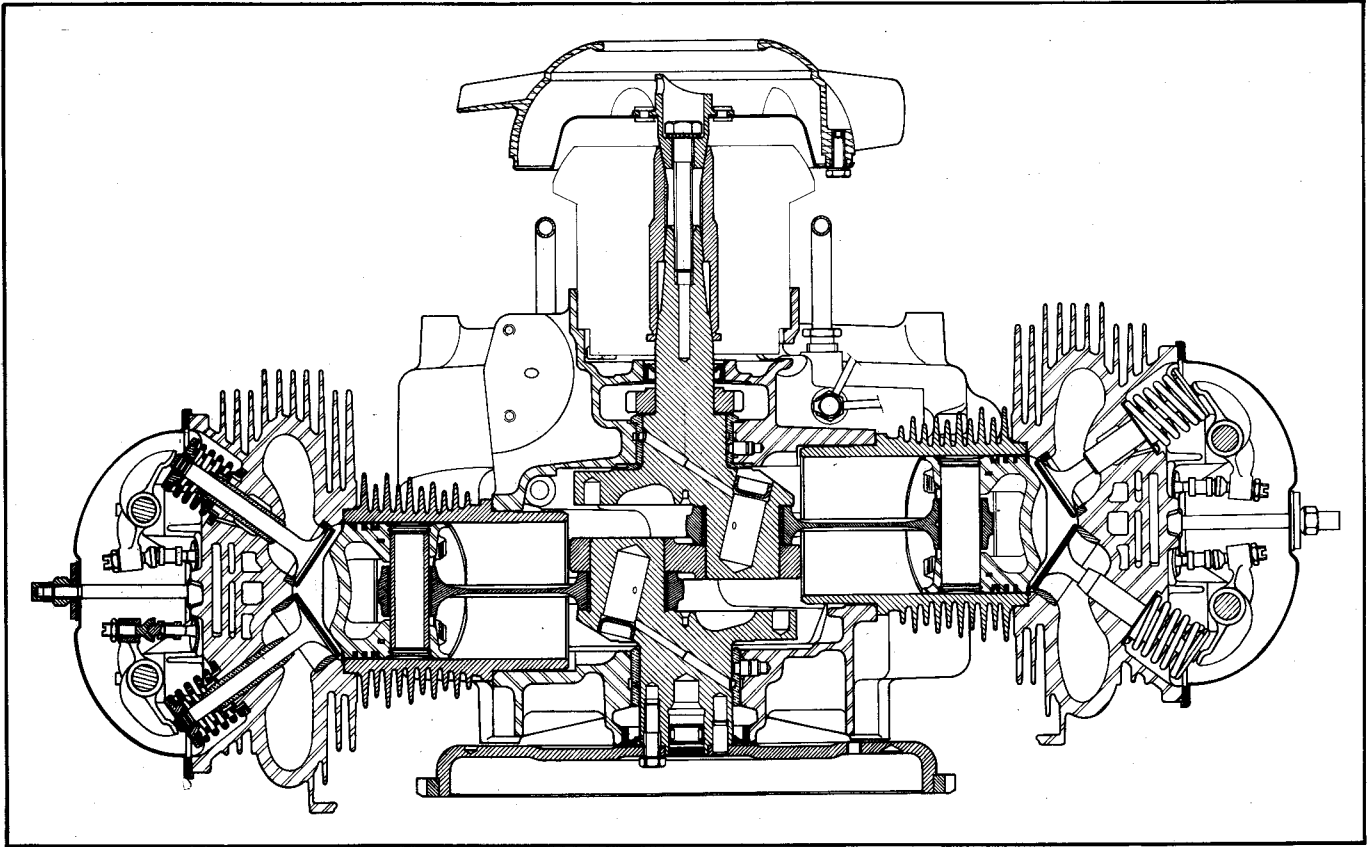
CROSS SECTION

A 10-5



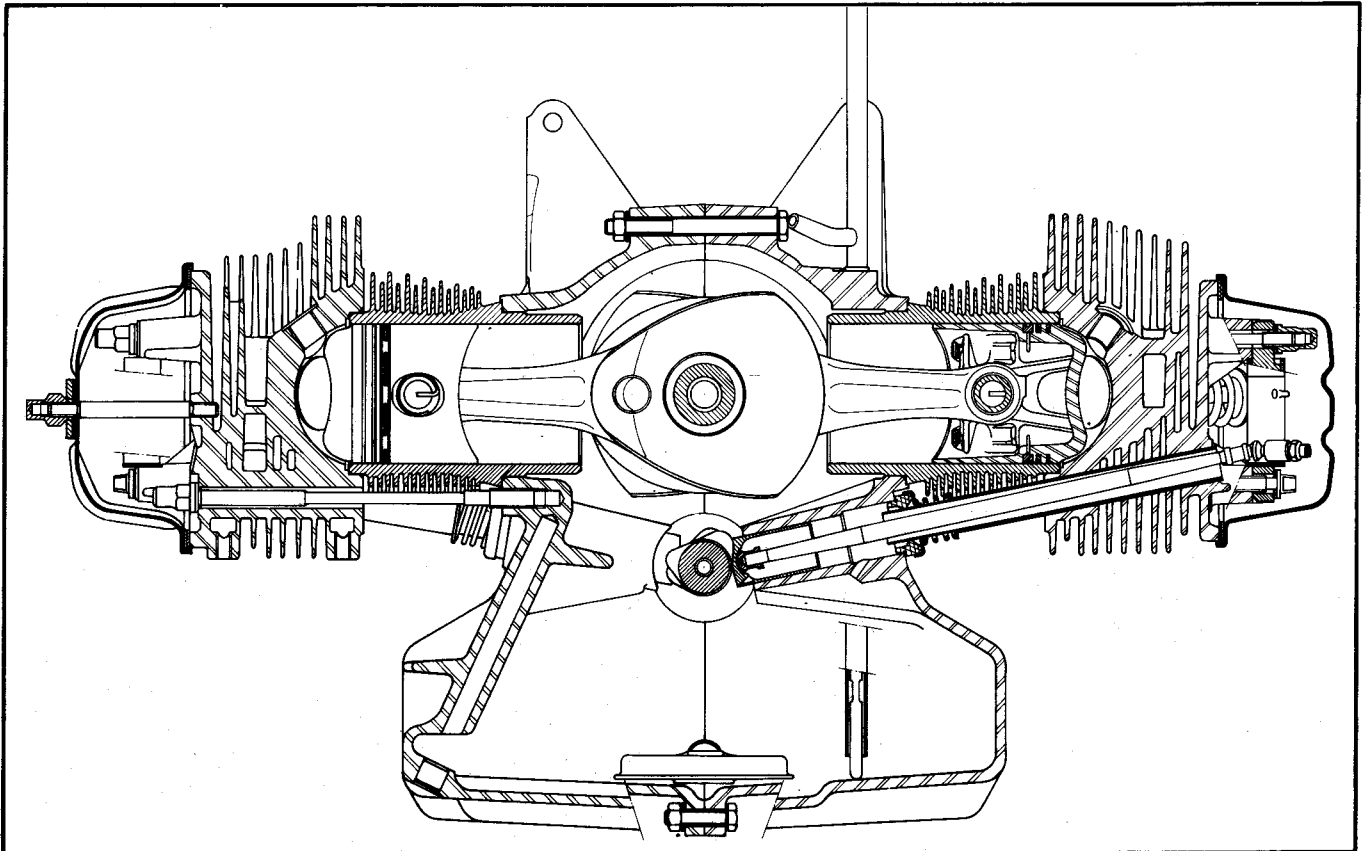
ENGINE A 79/1
HORIZONTAL SECTION

A 10-3



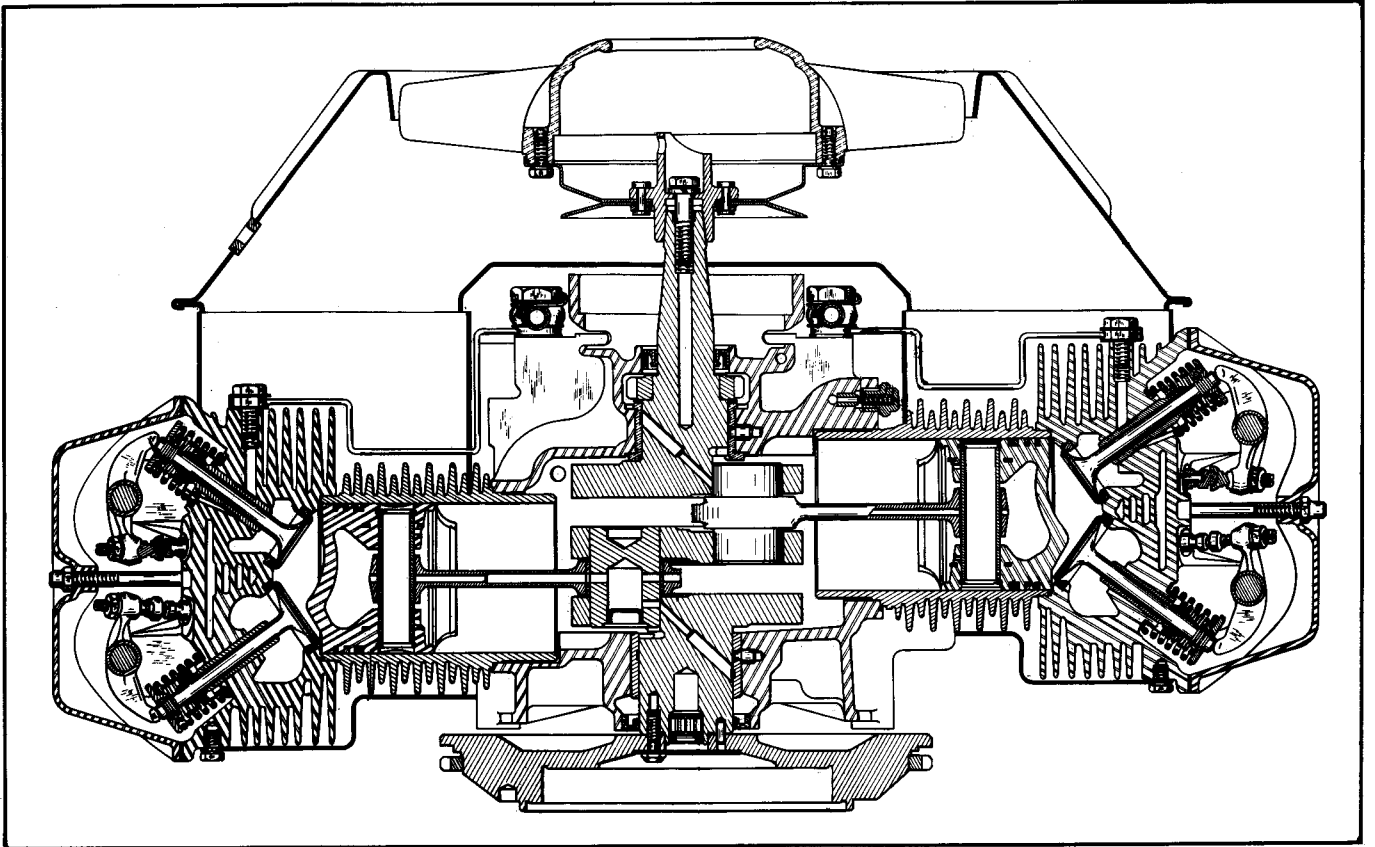
CROSS SECTION

A 10-1



ENGINE M 4
HORIZONTAL SECTION

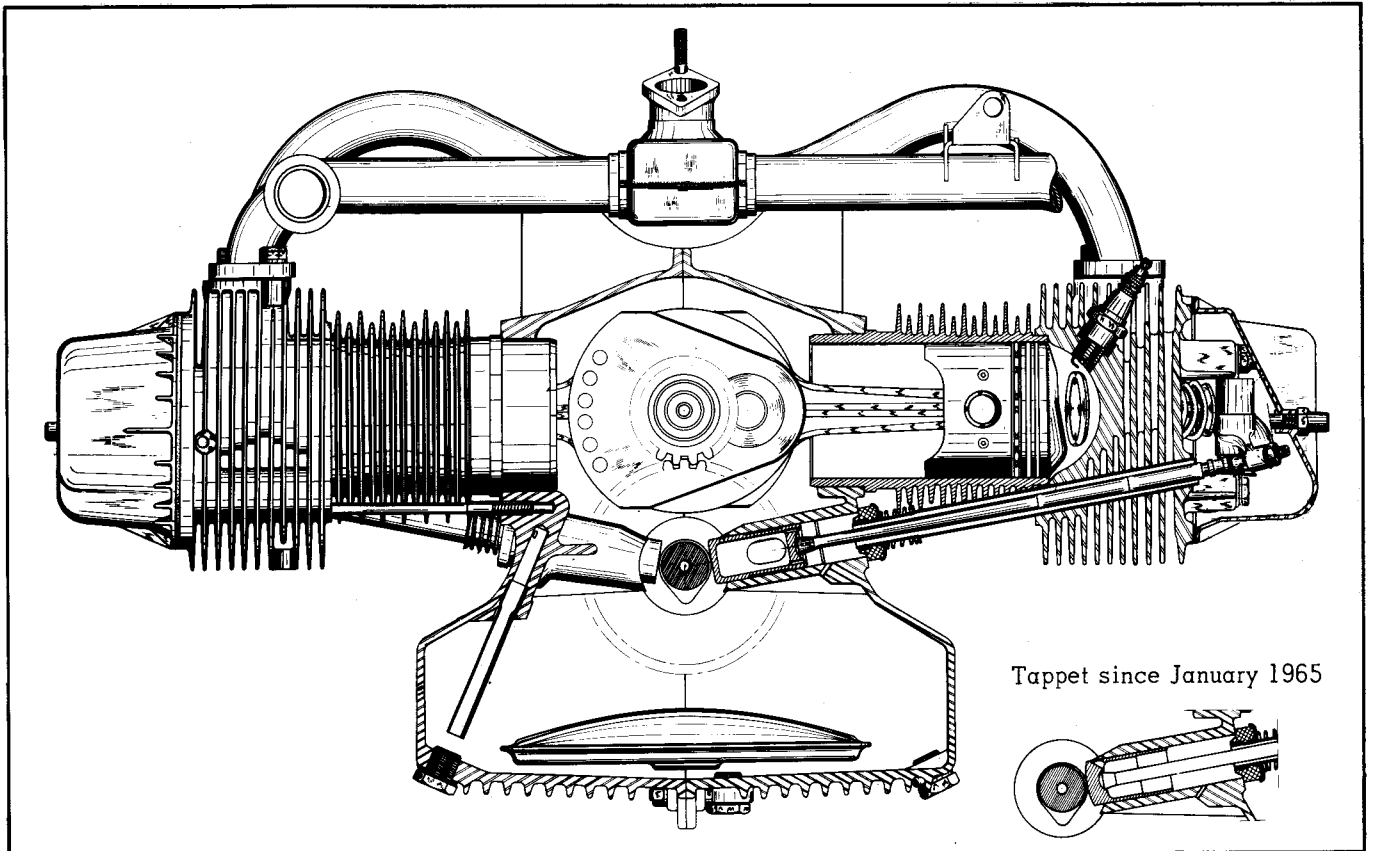
A 10-8



Manual 816-1

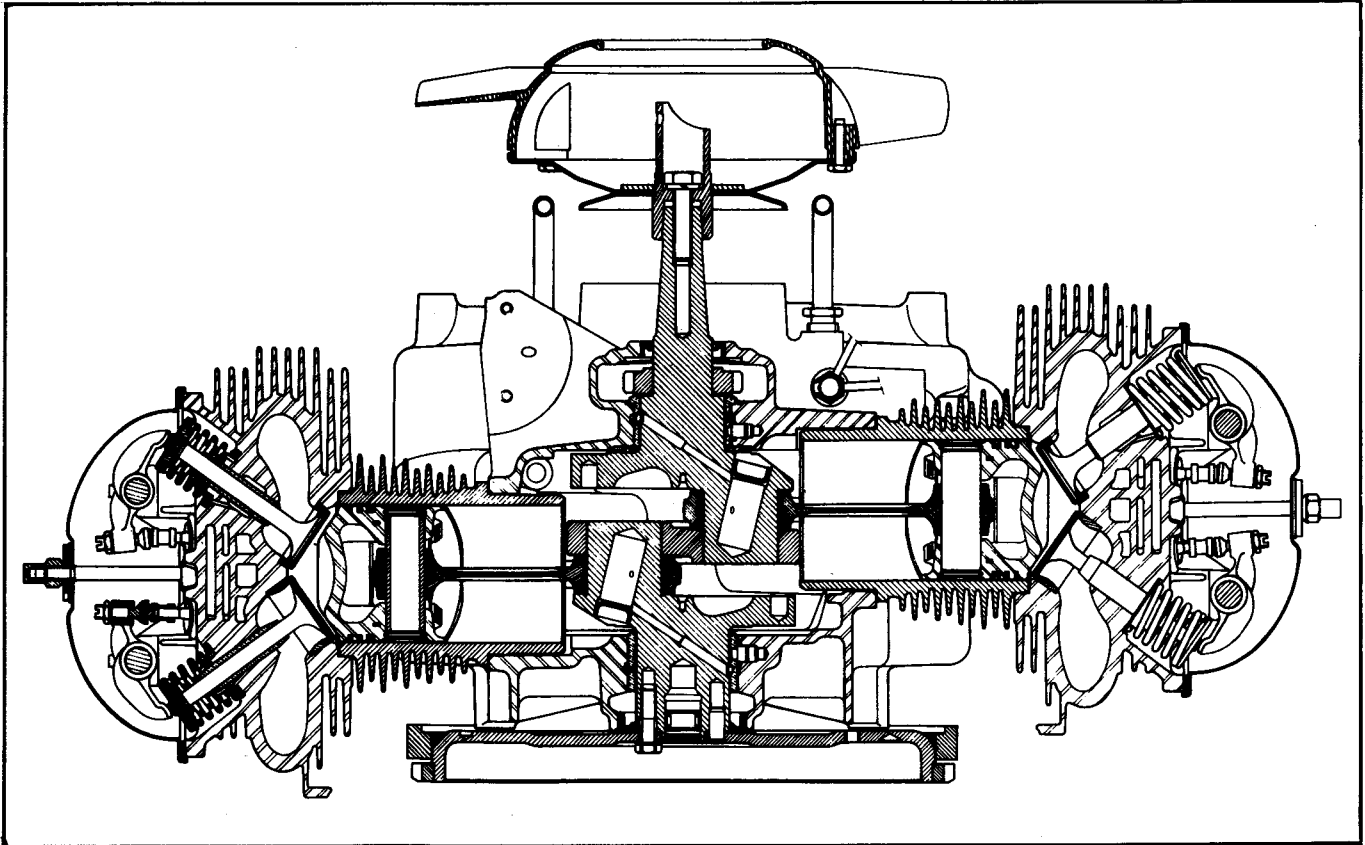
CROSS SECTION

A.10-9



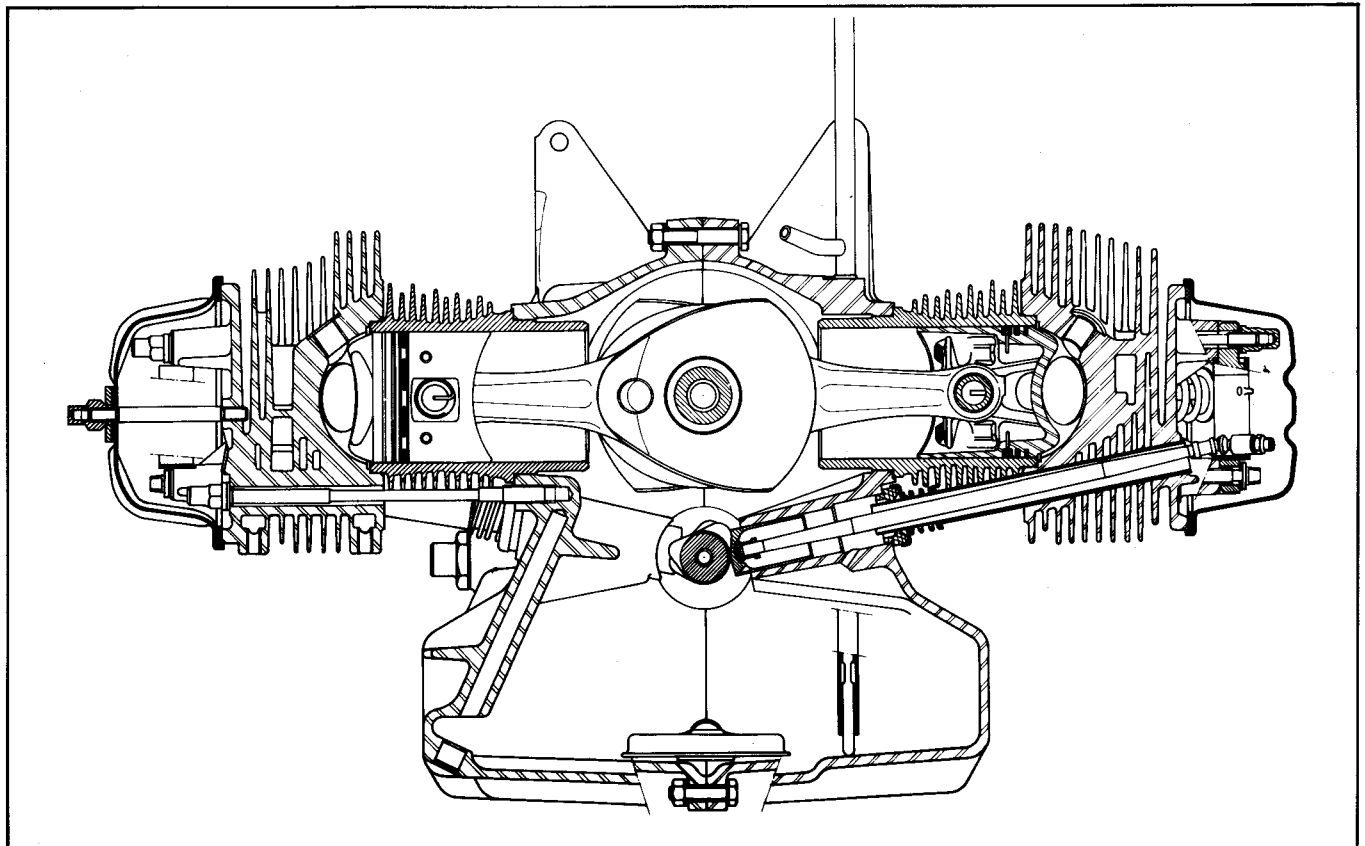
ENGINES M 28/1 and M 28
(Vehicles produced up to December 1969)
HORIZONTAL SECTION

A. 10-2



CROSS SECTION

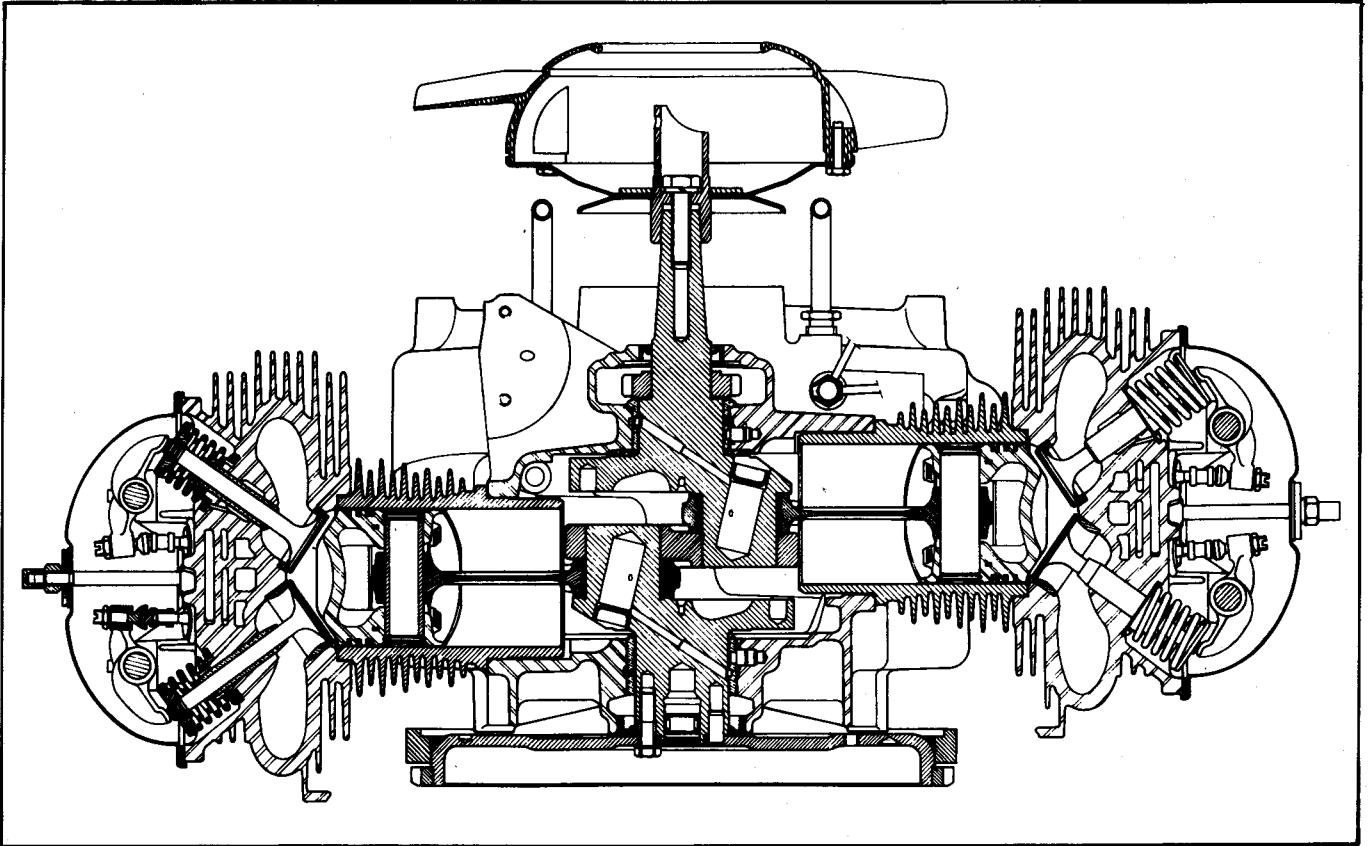
A. 10-6



NOTE : The M 28 engine differs from the M 28/1 engine only in the compression ratio.

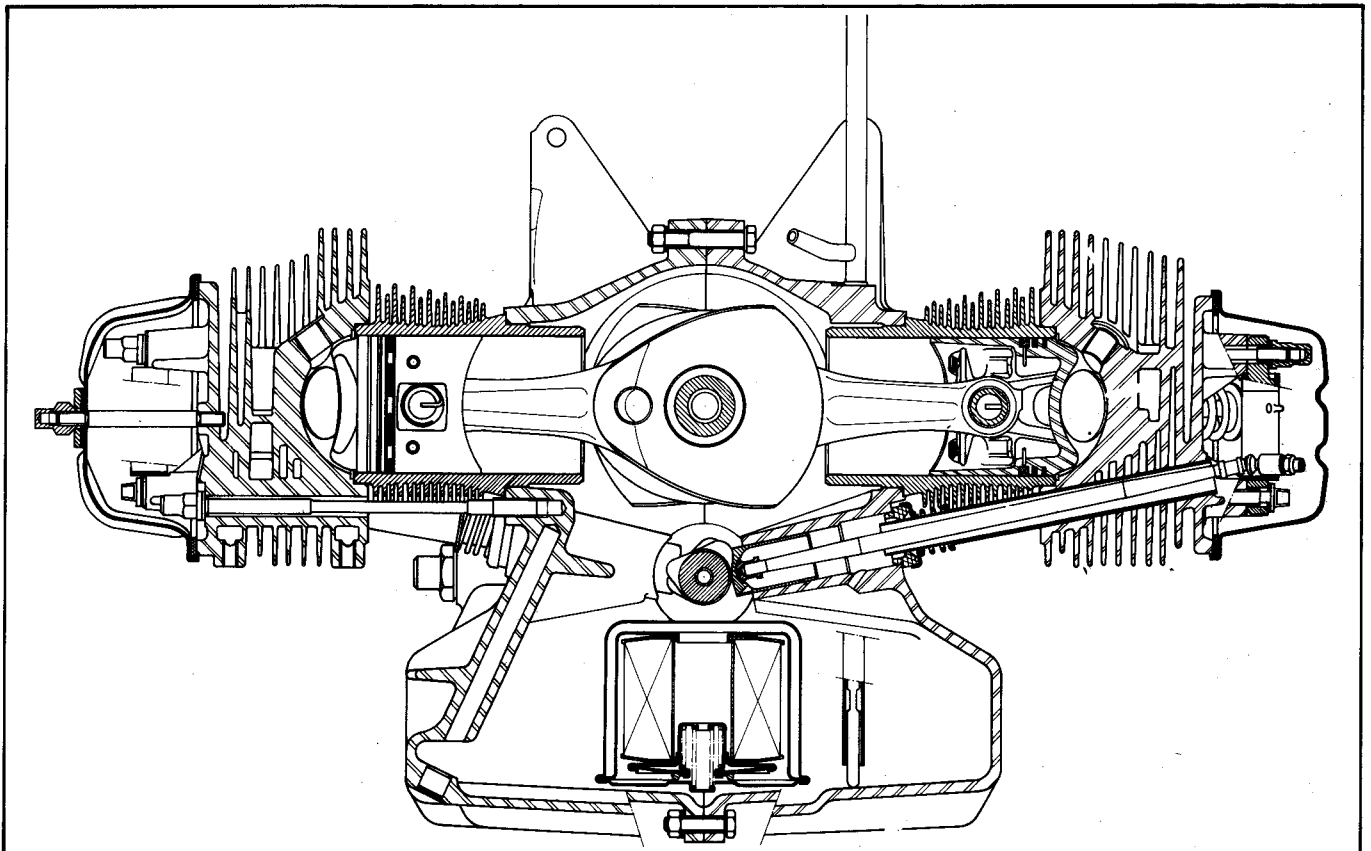
ENGINES M 28/1 and M 28
(Vehicles produced from December 1969 to November 1970)
HORIZONTAL SECTION

A. 10-2



CROSS SECTION

A. 10-6a

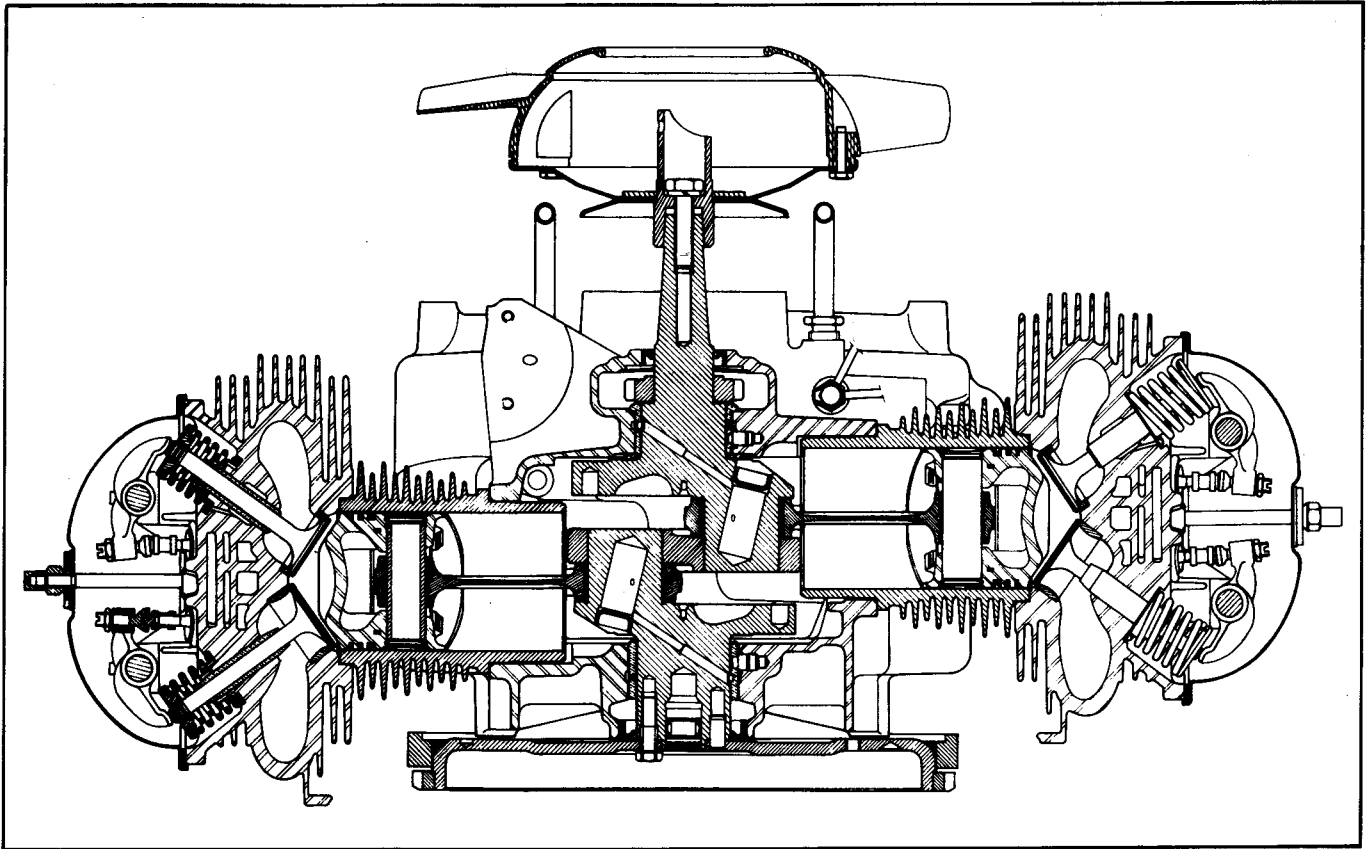


Manual 816-1

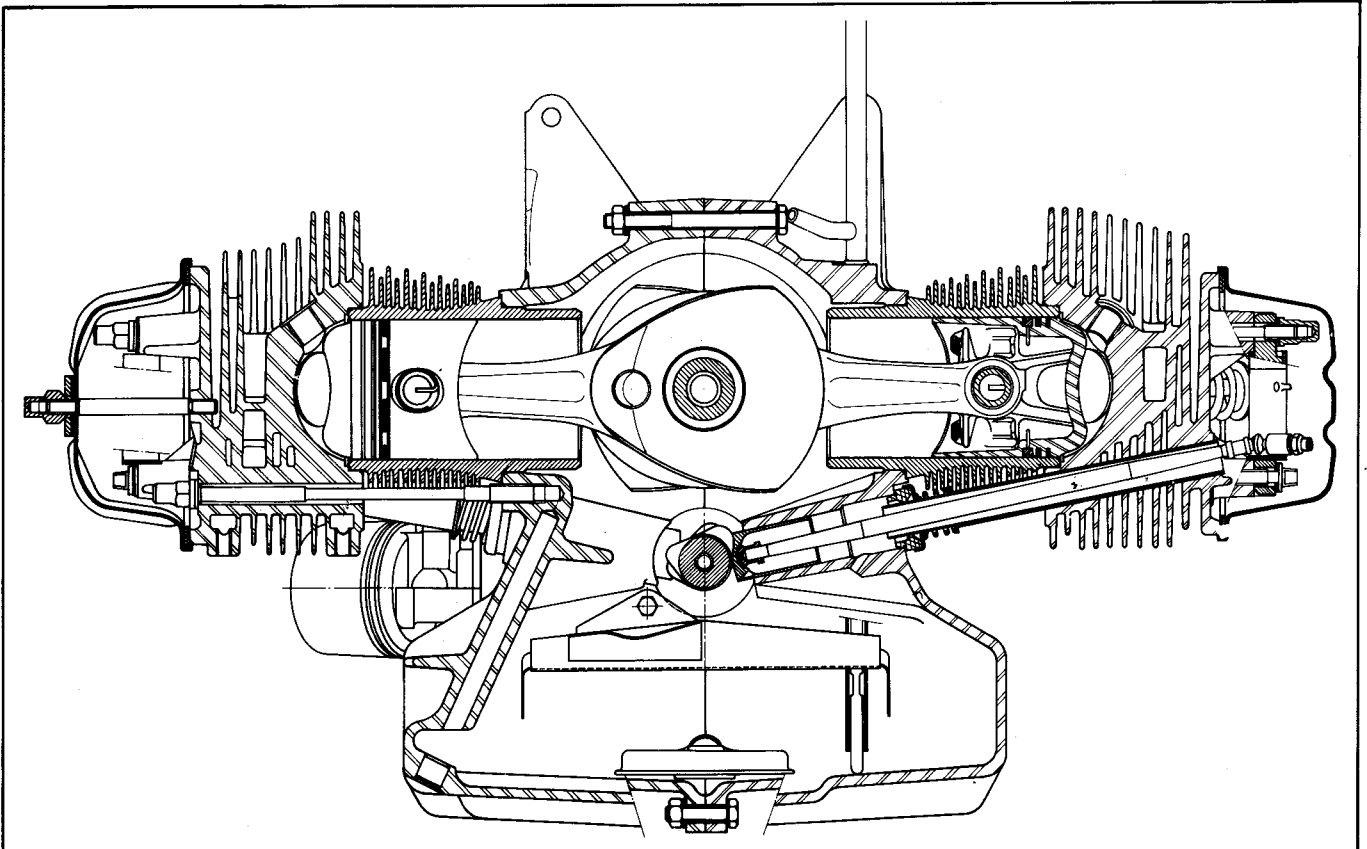
NOTE : The M 28 engine differs from the M 28/1 engine only in the compression ratio.

ENGINES M 28/1 and M 28*(Vehicles produced since December 1970)***HORIZONTAL SECTION**

A. 10-2

**CROSS SECTION**

A. 10-7



NOTE : The M 28 engine differs from the M 28/1 engine only in the compression ratio.

DIAGRAM OF LUBRICATION SYSTEM
ENGINES A 53 - A 79/0 - M 4

A 22-2

Manual 816-1

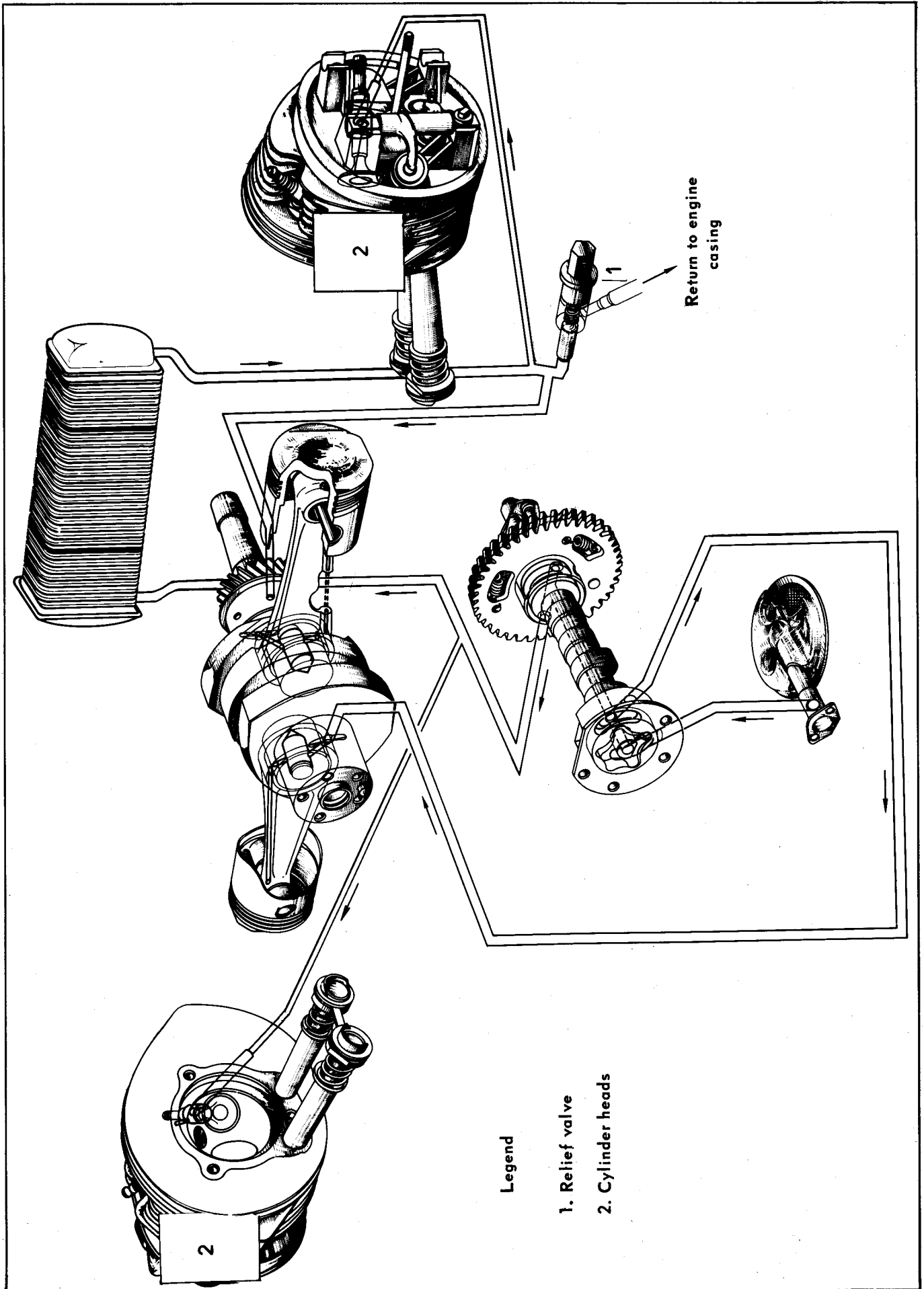


DIAGRAM OF LUBRICATION SYSTEM

ENGINES A 79/1 (M 28/1) and M 28 (up to November 1970)

A. 22-3

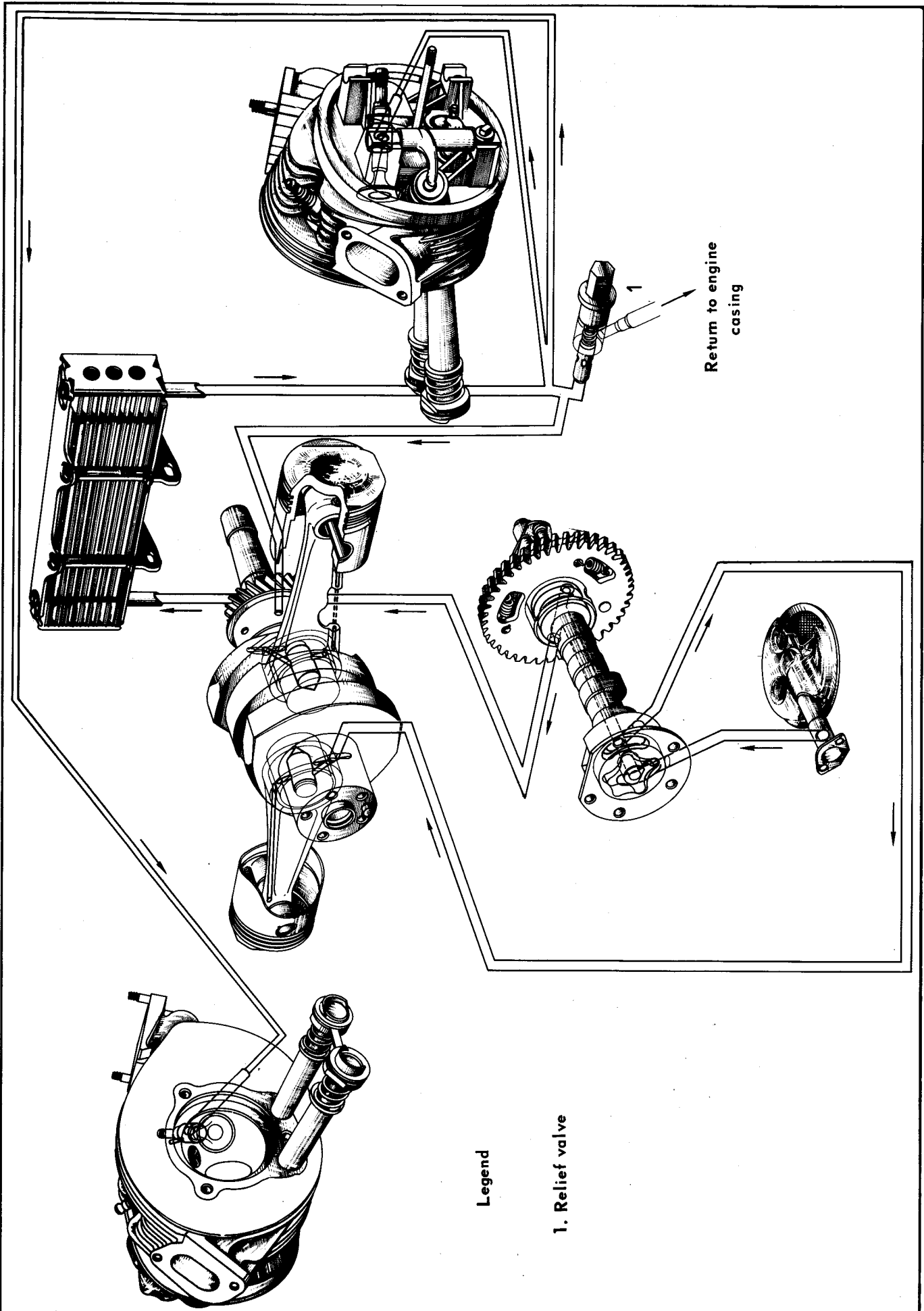
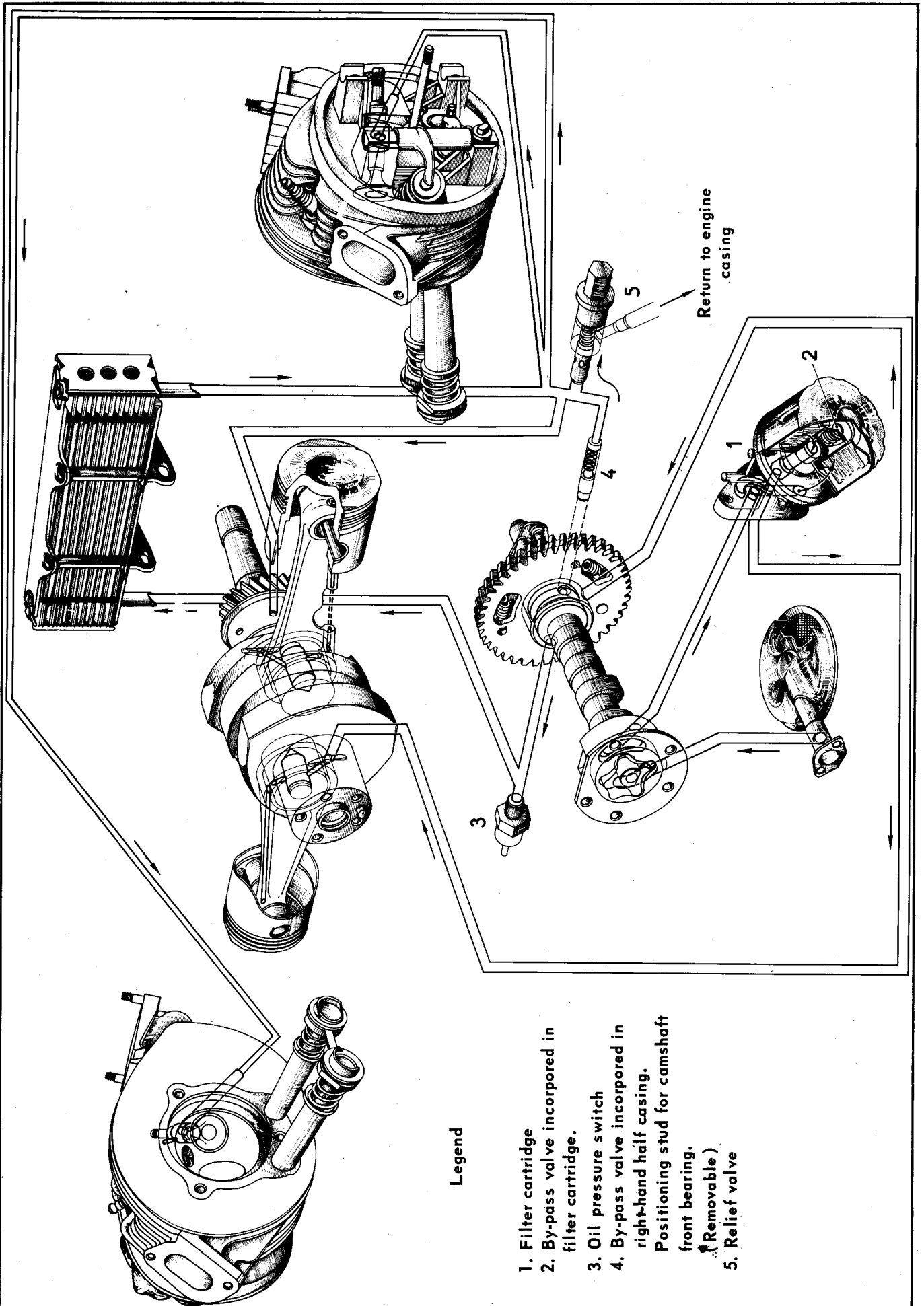


DIAGRAM OF LUBRICATION SYSTEM
ENGINES M 28/1 and M 28
(Engines produced since November 1970)

A. 22-1

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Legend

- 1. Filter cartridge
- 2. By-pass valve incorporated in filter cartridge.
- 3. Oil pressure switch
- 4. By-pass valve incorporated in right-hand half casing.
Positioning stud for camshaft front bearing.
- 5. Relief valve

II. SPECIAL FEATURES.

Engine casing :

Tightening torques :

- Assembly bolts and nuts for crankcase halves : 1.5 to 2 da Nm (10.83 to 14.44 ft.lbs)
- Bearing nuts : 3.5 to 4.5 da Nm (25.27 to 32.54 ft.lbs)
- Oil strainer securing screw : 0.3 to 0.5 da Nm (2.16 to 3.6 ft.lbs)
- Bolts fastening front supports to crankcase : 6 da Nm (43.32 ft.lbs)
- Drain plug : 3.5 to 4.5 da Nm (25.27 to 32.54 ft.lbs)
- Bearing studs on crankcase halves : 0.6 to 0.8 da Nm (4.33 to 5.67 ft.lbs)
- Assembly studs for crankcase halves : 0.3 to 0.5 da Nm (2.16 to 3.6 ft.lbs)

Crankshaft - Connecting rods :

- Lateral play of crankshaft (not adjustable) : 0.07 to 0.14 mm (.003 to .006 in)
- Do not interfere with the front and rear bearings of the crankshaft (micro-turbine).
- Bore of small end bushes : $20.005 \begin{matrix} +0.011 \\ -0.006 \end{matrix}$ mm ($.787 \begin{matrix} +.0004 \\ -.0002 \end{matrix}$ in)
- Lateral play of connecting rods : 0.08 to 0.13 mm (.003 to .005 in)


Flywheel :

- Maximum run out of starter ring : 0.3 mm (.011 in)
- Fitting direction of starter ring : the non-milled face of the starter ring oriented towards the flywheel shouldering.
- Tightening torque :
Flywheel securing screws (to be replaced when dismantling) : 4 to 4.5 da Nm (28.88 to 32.54 ft.lbs)

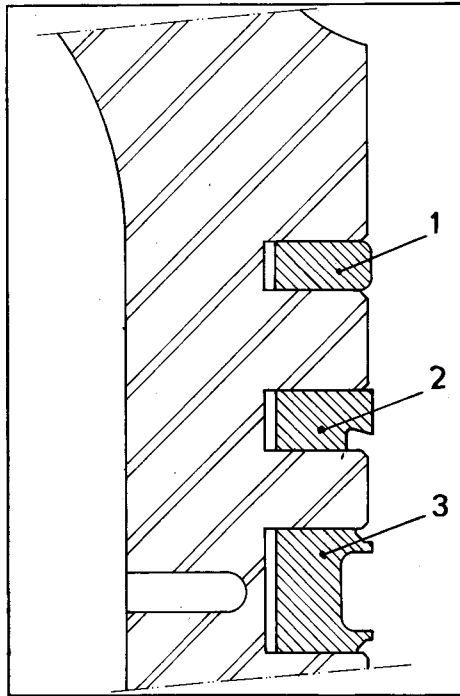
Cylinders :

- A single type of cylinders.

Pistons - Rings :

- The gudgeon pins are loose fitted.
- Fitting direction for pistons :
 - Pistons without arrow on crown :
The fitting is indifferent
 - Pistons with offset gudgeon pin and arrow or letters AV ( or AV)-on crown :
The mark must point towards the timing belts

A. 12-50 α



Rings :

The identification mark (or manufacturer's mark) should be oriented towards the piston crown.

Fitting order : (starting from the crown of the piston)

- 1 - Compression ring
- 2 - Scraper ring
- 3 - Scraper - collector ring

REMARK :

Since June 1972, certain engines M 28 and M 28/1 are equipped with U-FLEX collector rings.

Cylinder-heads :

Tightening torques :

- Cylinder-head nuts (tightening order with engine « cold » : front upper nut - rear upper nut - lower nut).

Lightly tighten the nuts in order to position the cylinder head :

- 1 st tightening : 0.5 to 1 da Nm (3.6 to 7.22 ft.lbs)
- 2nd tightening : 2 to 2.3 da Nm (14.44 to 16.6 ft.lbs)
- Cylinder-head cover nut : 0.5 to 0.7 da Nm (3.6 to 4.95 ft.lbs)
- Screws and nuts on the intake-exhaust manifold : 1.9 da Nm (13.71 ft.lbs)
- Cylinder-head studs on crankcase : 0.4 to 0.6 da Nm (2.88 to 4.32 ft.lbs)
- Cylinder-head cover studs : 0.4 to 0.6 da Nm (2.88 to 4.32 ft.lbs)
- Screws on exhaust collars : 1.9 da Nm (13.71 ft.lbs)

Valves :

Rotary valves (TEVES) on A 79/0 - A 79/1 - M 28/1 - M 28 engines.

| | Valves | Angle | Head dia. | | Stem dia. below head | | Length | |
|--------------------------|---------|-------|-----------|------|------------------------|-------------------------|----------------------------------|----------------------------------|
| | | | mm | in | mm | in | mm | in |
| Engines A 53 - M 79/0 | Intake | 120° | 39 | 1.54 | 8 - 0.025 - 0.040 | .315 - .0010 - .0016 | 90.8 ± 0.25 | 3.57 ± .010 |
| | Exhaust | 90° | 32 | 1.26 | 8.5 - 0.035 - 0.050 | .335 - .0001 - .0020 | 88.65 ± 0.25 | 3.49 ± .010 |
| Engines A 79/1 | Intake | 120° | 39 | 1.54 | 8 - 0.005 - 0.035 | .315 - .0002 - .0014 | 89.57 ^{+0.45} - 0.25 | 3.53 ^{+0.018} - .010 |
| | Exhaust | 90° | 34 | 1.34 | 8.5 - 0.020 - 0.050 | .335 - .0008 - .0020 | 88.18 ^{+0.45} - 0.25 | 3.47 ^{+0.018} - .010 |
| Engine M 4 | Intake | 120° | 39 | 1.54 | 8 - 0.025 - 0.040 | .315 - .0010 - .0016 | 88.8 ± 0.25 | 3.50 ± .010 |
| | Exhaust | 90° | 34 | 1.34 | 8.5 - 0.035 - 0.050 | .335 - .0014 - .0020 | 86.5 ± 0.25 | 3.41 ± .010 |
| Engines M 28/1 - M 28 | Intake | 120° | 40 | 1.57 | 8 - 0.020 - 0.035 | .315 - .0008 - .0014 | 88.5 ^{+0.45} - 0.25 | 3.48 ^{+0.018} - .010 |
| | Exhaust | 90° | 34 | 1.34 | 8.5 - 0.035 - 0.050 | .335 - .0014 - .0020 | 86.95 ^{+0.45} - 0.25 | 3.42 ^{+0.018} - .010 |

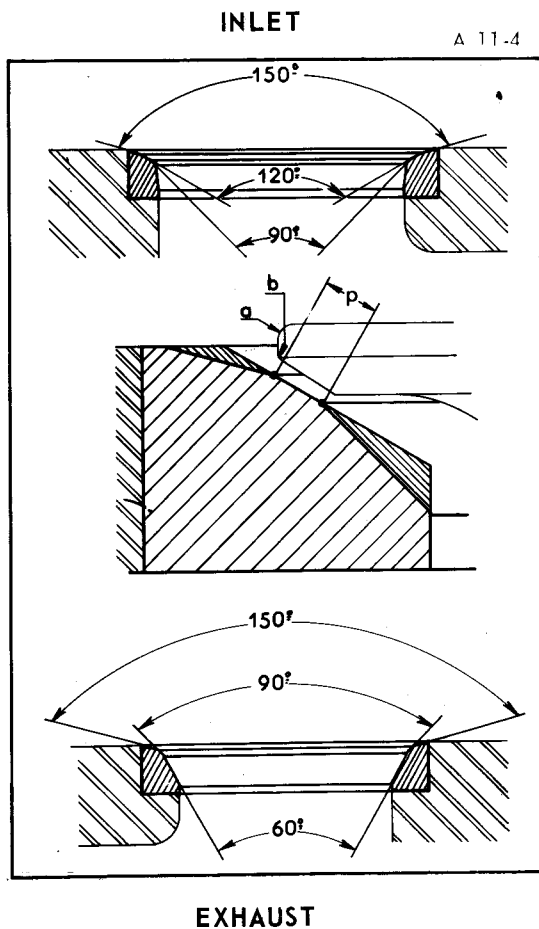
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Valve springs :

| Engines | Springs | | Normal length | Length under load | Load | Length under load | Load |
|---------|-------------------------|-------------------------|----------------------|----------------------|-------------------------------------|-------------------------------|-------------------------------------|
| | A 53 A 79/0 | Up to September 1963 | outer | 38 mm (1.49 in) | 24 mm (0.94 in) | 38 to 42 kg (83 to 92 lbs) | 31 mm (1.22 in) |
| inner | | | 28 mm (1.10 in) | 14.5 mm (0.57 in) | 7.4 to 8.3 kg (16 to 18 lbs) | 21.5 mm (0.84 in) | 3.6 to 4.4 kg (7.9 to 9.6 lbs) |
| M 4 | Since September 1963 | outer | 38.6 mm (1.51 in) | 24.4 mm (0.96 in) | 47.3 to 48.3 kg (104 to 105 lbs) | 31.7 mm (1.24 in) | 21.2 to 24.6 kg (46.6 to 54 lbs) |
| | | inner | 28.8 mm (1.13 in) | 15 mm (0.59 in) | 9 to 10 kg (19 to 22 lbs) | 22.3 mm (0.87 in) | 3.7 to 4.7 kg (8.1 to 10.3 lbs) |

| Engines | Springs | Length under load | Load | Length under load | Load | Winding direction |
|---------|-----------------|----------------------|-------------------------------|-----------------------|--------------------------------|-----------------------|
| | | A 79/1 | Outer | 31.4 mm (1.23 in) | 28 ± 1.5 kg (61 ± 3.3 lbs) | 24.15 mm (0.95 in) |
| M 28/1 | Inner | 24.4 mm (0.96 in) | 12 ± 1 kg (26 ± 2.2 lbs) | 17.15 mm (0.67 in) | 25 ± 1.5 kg (55 ± 3.3 lbs) | L.H. |
| M 28 | One spring only | 31.4 mm (1.23 in) | 37 ± 2.5 kg (79 ± 5.5 lbs) | 24.15 mm (0.95 in) | 66 ± 3.5 kg (145 ± 7.7 lbs) | Indifferent |

Seats and guides :



Bore of valve guides :

Engines A 53 - A 79/0 :

- Inlet : dia. = 8 + 0.025 mm (.315 + .0010 in)
- Exhaust : dia. = 8.5 + 0.025 mm (.335 + .0010 in)

Engine A 79/1 :

- Inlet : dia. = 8 + 0.020 mm (.315 + .0009 in)
- Exhaust : dia. = 8.5 + 0.010 mm (.335 + .0003 in)

Engine M 4 :

- Inlet : dia. = 8 + 0.040 mm (.315 + .0016 in)
- Exhaust : dia. = 8.5 + 0.050 mm (.335 + .0020 in)

Engines M 28/1 - M 28 :

- Inlet : dia. = 8 + 0.030 mm (.315 + .0011 in)
- Exhaust : dia. = 8.5 + 0.015 mm (.335 + .0005 in)

Width of contact surface « p » :

- Inlet 1.45 mm (.057 in) max.
- Exhaust 1.80 mm (.070 in) max.
- Maximum out of straight of push rods 0.2 mm (.007 in) max.

Distribution :

Camshaft :

- Lateral play (not adjustable) 0.04 to 0.09 mm (.0015 to .0035 in)

Theoretical setting of the timing :

| Theoretical setting with a clearance of 0.53 mm (0.02 in) between rocker and intake valve and a clearance of 0.43 mm (0.01 in) between rocker and exhaust valve. | | |
|--|-------------------------|------------------|
| | Engines A 53 and M 4 | Engine A 79/0 |
| B.T.D.C. (Inlet opens) | 3° | 12° |
| A.B.D.C. (Inlet closes) | 45° | 54° |
| B.B.D.C. (Exhaust opens) | 45° | 55° |
| A.T.D.C. (Exhaust opens) | 11° | 21° |

| Theoretical setting with a clearance of 1 mm (0.03 in) between the rocker and valve at intake and exhaust. | | |
|--|------------------|----------------------------|
| | Engine A 79/1 | Engines M 28/1 and M 28 |
| A.T.D.C. (Inlet opens) | 2° 5' | 0° 5' |
| A.B.D.C. (Inlet closes) | 41° 30' | 49° 15' |
| B.T.D.C. (Exhaust opens) | 35° 55' | 35° 55' |
| A.T.D.C. (Exhaust closes) | 3° 30' | 3° 30' |

Tightening torques :

- Rocker adjusting nuts : 1.4 to 1.9 da Nm (10 to 13.7 ft.lbs)

Lubrication circuits :

- Type and grade of oil : TOTAL GTS 20 W 50 (England and Spain)
TOTAL GTS 15 W 50 (Europe except
England, Spain and France)
TOTAL GTS 15 W 40 (France)

Housing capacities :

| | Type of engine and oil capacity | | | | |
|---|---------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| | A 53 | A 79/0 | A 79/1 | M 4 | M 28/1 - M 28 |
| - After draining | 2 litres (3.5 pints) | 2.3 litres (4 pints) | 2.3 litres (4 pints) | 2.5 litres (4.3 pints) | 2.4 litres (4.2 pints) |
| - After removing rocker covers | 2.2 litres (3.8 pints) | 2.5 litres (4.3 pints) | 2.5 litres (4.3 pints) | 2.85 litres (5 pints) | 2.5 litres (4.3 pints) |
| - After removing rocker covers and cartridge (since November 1970) | | | | | 2.7 litres (3.7 pints) |
| - Between min. and max. | 0.5 litres (0.87 pints) | 0.5 litres (0.87 pints) | 0.5 litres (0.87 pints) | 0.5 litres (0.87 pints) | 0.5 litres (0.87 pints) |

- Oil pressure at 80° :

Engines A 53 - A 79/0 - M 4 2.5 to 3.1 bars at 4000 rpm (36.2 to 44.9 psi)

Engine A 79/1 4 to 5 bars at 6000 rpm (58 to 72.5 psi)

Engines M 28/1 - M 28 5.5 to 6.5 bars at 6000 rpm (79.7 to 94.2 psi)

- Pressure switch setting 0.5 to 0.8 bars (7.2 to 11.6 psi)

Filter cartridge :

Engines M 28 and M 28/1 (from November 1969 to November 1970)

- Intake strainer with built-in « by-pass » filter cartridge.

Engines M 28 and M 28/1 (since November 1970)

- New lubrication circuit with built-in (removable) « by-pass » in place of the front camshaft bearing positioning stud (right-hand engine casing).

- External filter cartridge with built-in « by-pass ».

Oil cooler :

| | |
|-----------------------------|------------------------|
| Engines A 53 - A 79/0 | 7 elements |
| Engine M 4 | 9 elements |
| Engine A 79/1 | 6 elements (Aluminium) |
| Engines M 28/1 - M 28 | 9 elements (Aluminium) |

Oil pump :

- Lateral play of pinions 0.1 mm maximum (.003 in)

Tightening torques :

| | |
|---|--|
| - Connecting screws on cylinder heads and crankcase : | 1 to 1.3 da Nm (7.22 to 9.3 ft.lbs) |
| - Connecting screws on oil-cooler (former model) | 2.7 to 2.9 da Nm (19.4 to 20.9 ft.lbs) |
| - Connecting screws on oil-cooler (new model) | 1 to 1.4 da Nm (7.22 to 10 ft.lbs) |
| - Securing screw for anti-emulsion plate | Moderately tight (LOCTITE FRENETANCH) |
| - Securing screw for oil strainer..... | 0.3 to 0.5 da Nm (2.1 to 3.6 ft.lbs) |
| - Securing screw for oil pump cover | 1.3 to 1.5 da Nm (9.3 to 10.8 ft.lbs) |
| - Securing screw for oil cooler | 1.9 da Nm (13.7 ft.lbs) |
| - Plug for lubrication circuit | 2.7 to 3 da Nm (19.4 to 21.6 ft.lbs) |

Fans :

Number of blades :

| | |
|---|--|
| - Engine A 53 | 6 blades (metal fan) |
| - Engines A 79/0 - A 79/1 - M 4 - M 28/1 - M 28 | 8 blades (plastic fan) |
| - Engines M 28/1 - M 28 | 9 blades (plastic fan) (since October 1970) |

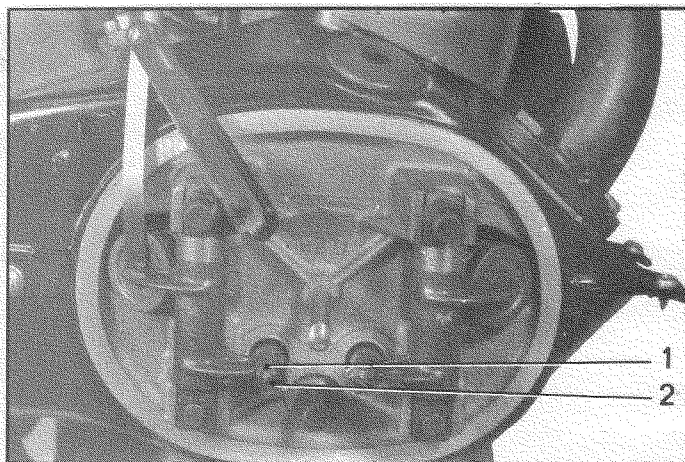
Positioning of fan :

- At TDC, arrange the fan so that the starting handle notch is horizontal.

Tightening torque for fan securing screw 5 to 6 da Nm (36 to 43 ft.lbs)

ADJUSTING THE ROCKERS.

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1. Place a container under the cylinder heads to collect the oil, and remove the rocker covers.

2. Set the valve-rocker clearances :

This adjustment must be carried out with the engine cold.

Set a valve when the corresponding one, on opposite cylinder, is fully open.

Intake = 0.20 mm (.008 in)

Exhaust = 0.20 mm (.008 in)

Slacken the lock-nut (1) and adjust the clearance using the tappet screw (2). Tighten the lock-nut.

3. Fit the rocker covers :

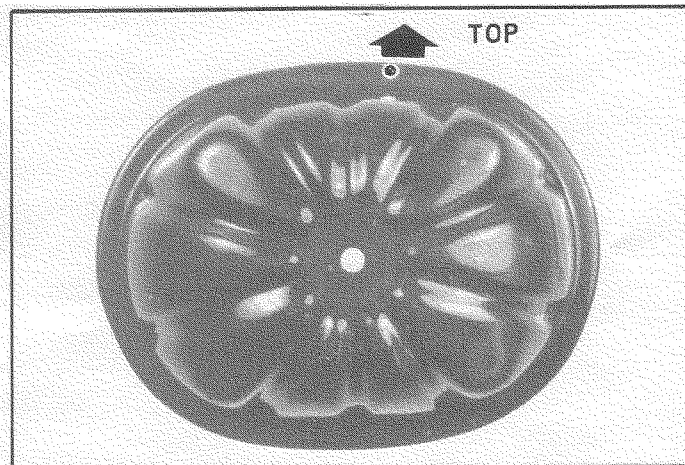
Make sure that there is no roughness on the joint surface. The contact faces must be dry.

Glue the gasket to the rocker cover (using Bostick 1400 or Minnesota F 19 glue).

On a certain number of engines, the rocker covers are marked with letter « Ø » for identification purposes. This mark should be directed towards the top.

A poor fitting of the rocker covers and gaskets, as well as an insufficient tightening of the rocker cover securing screw can cause total loss of the oil. Tighten nut (4) from 0.5 to 0.7 da Nm (3.61 to 5.05 ft. lbs). Fit the rubber washer and plain washer (3), if need be.

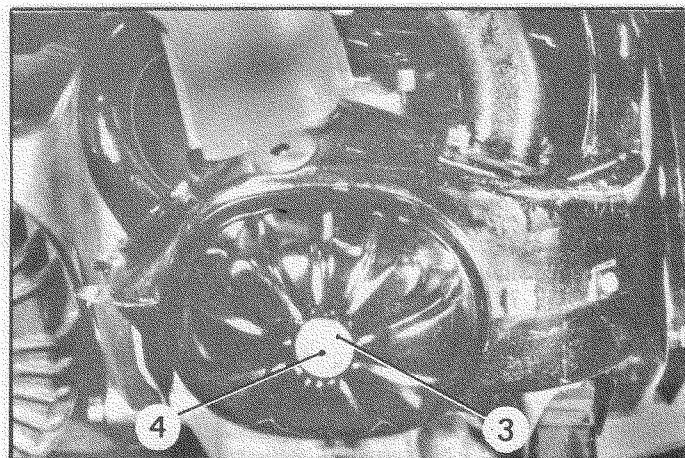
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4. Start the engine and check the joints for leaks.

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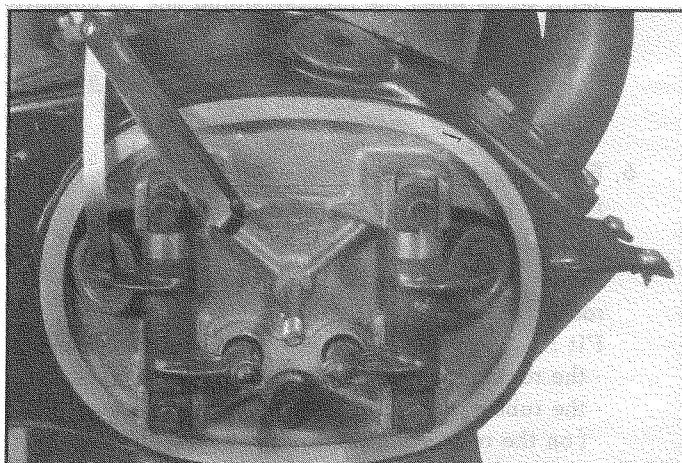
5. While the engine is warm, adjust the idling speed, if necessary (750 to 800 rpm).

6. When a centrifugal clutch has been fitted, check the the setting of the throttle closing dashpot. (The operation time must be between 1 and 2 seconds). Adjust if necessary.

7. Top up with engine oil.

CHECKING THE VALVE TIMING

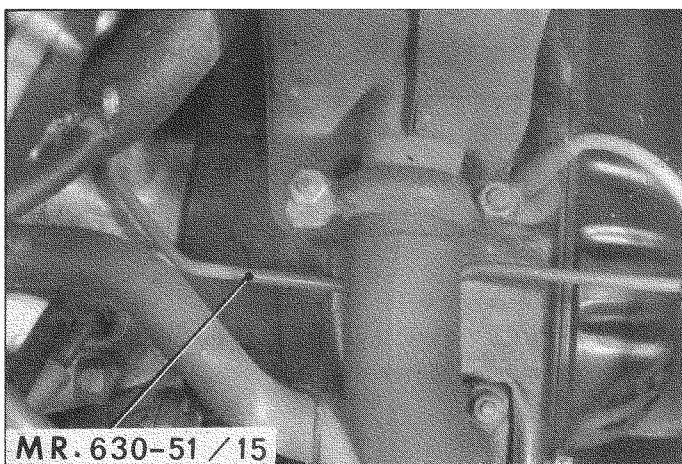
4112



To carry out this operation, the engine must be cold.

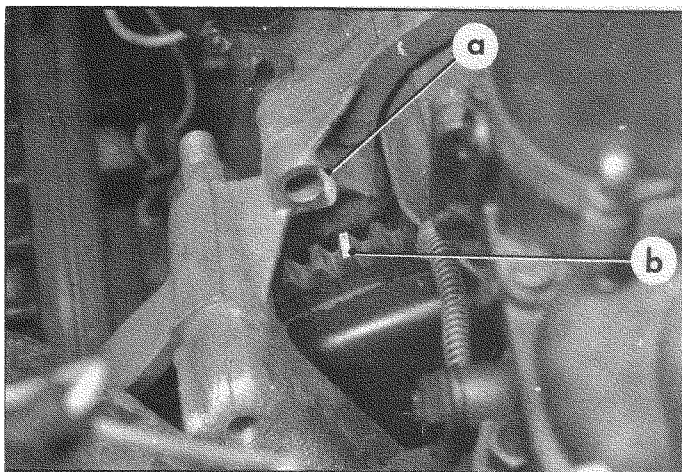
1. Place a container to collect the oil and remove the rocker cover of the left-hand cylinder.
2. Turn the engine in order to bring the intake valve to a fully opened position.
Adjust the clearance between rocker and exhaust valve to :
 - Engine A 53 : 1.95 mm (.076 in)
 - Engines A 79/0 and M 4 : 2.40 mm (.095 in)
 - Engines A 79/1 : 2.40 mm (.095 in)
 - Engines M 28/1 and M 28 : 2 mm (.078 in)

4514



3. Insert a 6 mm (.236 in) dia. rod (MR. 630-51/15) in the hole located on the left-hand side of the crankcase and provided for ignition timing.
Turn the engine *in the opposite direction of its normal rotation* until the rod penetrates into the hole of the flywheel

Manual 816*

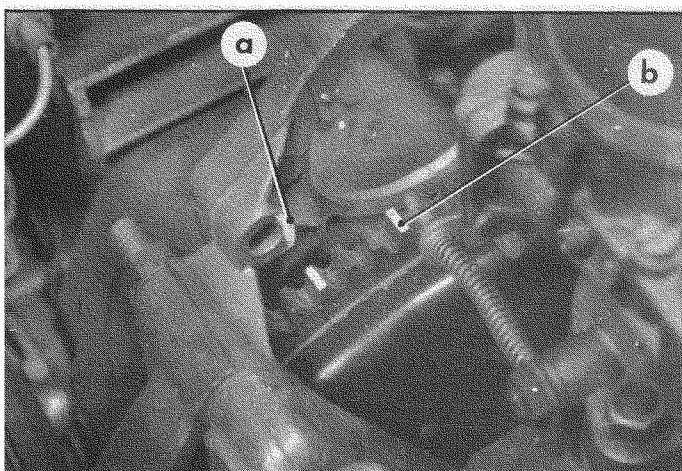


4. Measure the clearance between rocker and exhaust valve. If the timing is to be correct, the clearance should be *between* :
 - Engine A 53 : 0.04 and 0.83 mm (.0015 and .032 in)
 - Engines A 79/0 and M 4 : 0.06 and 0.80 mm (.0023 and .031 in)
 - Engine A 79/1 : 0.09 and 0.88 mm (.0035 and .034 in)
 - Engines M 28/1 and M 28 : 0.03 and 0.75 mm (.0011 and .029 in)

On certain A 79/1 (435 cc) engines, it is not possible to arrive at a clearance of 2.40 mm (.095 in) between rocker and exhaust valve. *In that case, proceed as follows :*

- a) Turn the engine in order to bring the inlet valve to its fully open position and adjust the exhaust valve-rocker clearance to 1.50 mm (.059 in).
- b) Insert the rod MR. 630-51/15 in the hole located on the left-hand side of the crankcase, provided for ignition timing.
- c) Turn the engine *in the opposite direction of normal* until the rod penetrates into the flywheel hole.
- d) With a piece of chalk mark a « b » on a tooth of the starter ring and another mark « a » on the crankcase directly opposite the « b ».
Remove the timing rod.

2 096



- e) Turn the engine *in the normal direction* through a distance corresponding to three teeth of the starter ring.
Measure the exhaust valve clearance.
If the timing is correct, the clearance should be between : 0.05 and 0.65 mm (.0019 and .25 in)

12 097

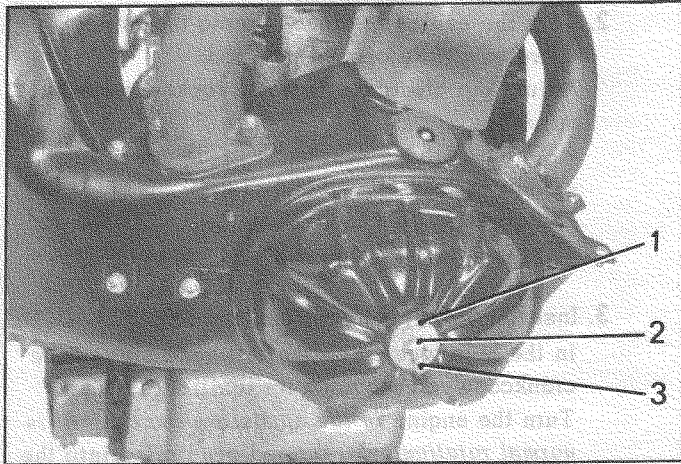
5. Set the rockers :

The adjustment is carried out with the engine cold.
Set a valve when the corresponding one on opposite cylinder is fully open :

Inlet = 0.20 mm (.007 in)

Exhaust = 0.20 mm (.007 in)

4043

**6. Fit the rocker covers :**

Ensure that there is no roughness on the joint faces.

Check the condition of the gasket glued to the rocker cover.

Fit :

- the rocker-covers,
- the rubber seals (1) and the plain washers (2) (on the rocker covers equipped with these),
- the cap nuts (3),

Tighten the nuts (3) from to 0.5 to 0.7 da Nm (3.6 to 4.9 ft.lbs).

Poor positioning of the gaskets or poor tightening of the nuts (3) can lead to total loss of the engine oil.

7. Start the engine.

Check the rocker cover gaskets for leaks.
Top up with engine oil.