REFERENCE INDEX

Special tools for BMW-Isetta

1.	M 299 a	Puller, ball bearing (with modification) (Matra device)
2.	M 527	Puller screw, blower wheel (Matra tool)
3.	M 528	Puller spindle, dynamo starter armature (Matra tool)
4.	M 355 a	Puller, camshaft (Matra tool)
5.	M 467	Puller, bearing cover plate (Matra tool)
6.	M 357 a	Clamping screws for clutch installation (Matra device)
7.	M 529	Arbour for centering of clutch (Matra tool)
8.	M 498	Locking fixture for flywheel (Matra device)
9.	M 311	Puller, flywheel, with two sets of screws (Matra device)
10.	M 520	Arbour for adapting protection tubes of rocker arm push rods (Matra tool)
11.	W 5002	Drift punch, gudgeon pin (to be made in the dealer's shop=shop-made tool)
12.	L 5036	Parallels for alignment of connecting rods (Shop-made tool)
13.	W 5021	Straightening tool, connecting rod (Shop-made tool)
14.		Puller, gudgeon pin (commercial type)
15.	M 368	Holder, for grinding-in valves with 7 mm stem diameter (Matra tool)
16.	M 361 a	Holding board for intake and exhaust valves and valve spring lifter (Matra device)
17.		Valve guide reamer (commercial type)
18.		Reaming tool, connecting rod bushing (commercial type)
19.		Valve seat and valve face turning tool (commercial type)

No.: 17, 18, 19 to be supplied by

Messrs. Ludwig Hunger,
Werkzeugfabrik
München-Großhadern
Gräfelfinger Straße 146

Technical data of the Motocoupé BMW Isetta

Engine:

Make and type
BMW Isetta 250 cc or 300 cc
Cycle Fourstroke Otto

Number of cylinders and arrangement
1 cylinder with blower cooling
Valves
Overhead, in V-arrangement

Camshaft drive
Roller chain

Valve operation
Tappets, pushrods and rocker arms

	250 cc engine	300 cc engine
Bore:	68mm(2.67in.)	72mm(2.83in.)
Stroke	68mm	73mm
Piston displacement	247 cc (15.07 cu. in.)	295 cc (18.61 cu. in.)
Compression ratio	6.8 to 1	6.8 to 1
Power	12 bhp at 5800 rpm	13 bhp at 5200 rpm

Medium piston speed
13.3 m/sec. = 43.6 ft./sec.
at n = 5800 rpm

Valve clearance (with engine cold)
Intake = 0.15 mm (.006in.)
Exhaust = 0.20 mm (.008in.)

Lubricating system
Force feed lubrication

Oil pump
Gear-type oil pump
Oil capacity, engine
3.1 Imp. pints = 3.6 U.S. pints
Lubricant
Trade-mark HD oil SAE 20 in winter
SAE 40 in summer

Carburetor: Model "Bing"	250 cc 1/22/97	300 cc 1/22/98
Adjustment:		
Passage	22mm=.86in.	22mm
Main jet	130	130
Needle jet	1310/6	1308
Jet needle	2023	2023
Idling jet	35	35
Starter jet	55	55
Needle position	1	2
Weight of float	7 grams	7 gr. =.25 oz.
Pilot air screw opened	1 to 2 turns	1 to 2 turns
Fuel supply	by gravity	
Air cleaner	Micronic filtering element in air silencer	
Clutch	Single-plate dry clutch	

Transmission
BMW four forward speed and reverse gearbox

1st	2nd	3rd	4th	Reverse
Gear ratios				
10.05	5.17	3.54	2.70	12.15
Overall gear ratios				
23.21	12.15	8.17	6.2	30.0

Oil capacity, transmission
.96 Imp. pints = 1.1 U.S pints (trade-mark oil SAE 40)

Final drive:

Type
Short rigid axle driven by chain in oil-bath case forming unit with the axle housing
Power transmission
through transverse resilient mounted drive shaft and totally enclosed, fully adjustable chain drive in oil bath.
Final drive ratio
2.31 : 1 (30/13 teeth)
Overall gear ratio in 4th gear
$i = i_1 \cdot i_0 = 2,70 \cdot 2,31 = 6,25:1$

Chassis frame:
Trapeze form
Type
Rigid tubular chassis frame

Steering:
Type
Steering screw and nut

Steering gear ratio 16 : 1
Turning circle diameter
approx. 8 m (24 feet)

Suspensions:
Front
Independent (swing arm damped by coil spring and friction-type shock absorber)

Rear
Two quarter-elliptic leaf springs and telescopic shock absorbers

Wheels and tires:
Type of wheels
Steel disc wheels with split rims to facilitate tire mounting

Rims 3,00 D-10
Tires
Five tires, overdimension size 4.80x10"
Tire pressure, front 17 lbs./sq.in.
rear 14 lbs./sq.in.

Camber 1 1/2°
King pin inclination 5°
Toe-in
4 to 5 mm = .16 to .20", measured on the rim borders, front and rear.
Castor 12°

Brakes:
Type
Hydraulic (BMW-Teves)

Foot brake
operates on all four wheels
Hand brake
operates on the rear wheels

Brake design
Internal shoe brakes, (floating)
Brake drum diameter 7in.

Total brake lining area
49.9 sq.in.

Fuel tank:
Capacity
2.8 Imp.gal. = 3.4 U.S.gal. with reserve fuel supply of .65 Imp.gal. = .8 U.S. gal.

Electrical system: 12 volts
Battery
12 volts/31 ampere hours

Dynamo (generator) starter
12 volts/130 watts (combined)

Designation: Dynamo starter Noris LA 12/130 R
Regulator type
Voltage regulator (F) RS/A 12/130 combined with starter relay
Starting RPM
approx.1,200
Rated continuous output
130 watts at 1,800 RPM
Drive ratio
1 : 1
Starter operation
combined with ignition switch

Ignition: Battery-ignition 12 volts

Ignition timing
automatic, with governor control on blower wheel

Initial ignition timing
7° before T.D.C. at idling speed
Maximum advance
7°+ 35° = 42° before T.D.C.

Contact breaker
Breaker gap 0.4 mm = .016 in.

Sparking plug
Bosch W 240 T 1 (electrode gap 0.6 mm = .024 in.)

Electric horn: Noris HE 12

Radio unit: (optional item)

Installation intended for medium-waves wireless sets only.

Main dimensions:

Track (tread), front	47.2 in.
Track (tread), rear	20.4 in.
Wheelbase	58 in.

Overall dimensions:

Length	89.9 in.
Width	54.3 in.
Height (unladen)	52.6 in.

Weight:

Kerb weight
approx. 770 lbs.
Carrying capacity
507 lbs.

Road performance:

	250 c.c. engine	300 c.c. engine
Maximum speed	53 m.p.h.	56 m.p.h.
Climbing ability	First gear 1 in 3	

Running-in speeds for the first, 1,200 miles:

Miles registered on speedometer:

	Miles per hour in			
	1st gear	2nd gear	3rd gear	4th gear
0 to 600	not over 10	18.5	31	40
600 to 1200	Increased speeds for short distances			
over 1200	15	30	40	53 (56 with 300 c.c. engine)