

# **Supplement to PRINZ repair handbook**

1. Technical data for 30 PS-Motor  
for SPORT-PRINZ chassis and body.
  2. Instructions for carrying out repair works of the  
Sport PRINZ which differ from other PRINZ models.
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# Technical data SPORT-PRINZ

## 30 PS-Motor

(Alterations are subject to revision)

<b>Type</b>	Air cooled two-cylinder 4 stroke carburettor block eng.
Engine mounting	In the back of the car
Permissible load, dry	approx. 90 kg (200 lb)
Number of cylinders	two-cylinder 1 block (with hardened treads from Engine No. 41 06495)
Bore $\phi$	75 mm (2.953")
Stroke	66 mm (2.598")
Cyl. capacity	583 cc (35.6 cu. in)
Compression chamber	44 c. c.
Compression fuel throttle	10—11 atmos
Compression ratio	1 : 7.6 (requires super fuel)
HP	30 PS — at 5,500 r.p.m.
Max. revolutions	6600 r.p.m.
Max torque	4.3 mkg at 3000 r.p.m
Cylinder capacity output	51.4 PS/ltr.
Mean effective pressure	8.45 mkg/cm <sup>2</sup> at 5,500 r.p.m.
Mean piston speed	12.1 m/sek.
<b>Cardan joint</b>	pressed together of single parts
Mounting bearings of cardan joint	2 plain bearings (Glyco)
Axial play of cardan joint	0 mm (synchromesh gears)
Radial play of cardan joint	0.05—0.07 mm
<b>Connecting rods</b>	forged with two T type shaft cross section
Connecting rod bearing	2 plain bearings (Glyco)
Radial play of connecting rod bearing	0.050—0.075 mm
<b>Piston</b>	Pin of the piston displaced; large part of the piston in moving direction.
Play on piston	0.055—0.065 mm (KS-piston)
Gudgeon pin	swimming with lock washer
Gudgeon pin dia	19.9975—20 mm
Bore of connecting rod box	20.02—20.033 mm
Piston rings	1 compression ring Impact — 0.3 — 0.4 mm Axial — 0.05 — 0.06 mm
	1 Deflected oil control ring (slot downwards) Impact — 0.3 — 0.4 mm Axial — 0.05 — 0.06 mm
	1 Deflected oil scraper ring Impact — 0.30 — 0.35 mm Axial — 0.035 — 0.055 mm
<b>Valve timing</b>	Overhead camshaft operated by connecting rods and rockers
Valves	1 inlet valve and 1 outlet valve each cylinder
Arrangement	in O.H.V.
Exhaust valve	hard-faced (marked with „APS“ on the valve disc)
Valve clearance	with cold engine
Inlet valve	0.1 mm
Exhaust valve	0.1 mm
Steering times at a play of the valve of 0.1 mm	Inlet opens 50° before TDC Exhaust opens 70° before BDC Inlet shuts 70° after BDC Exhaust shuts 50° after TDC
Angle of valve seating	45°
Correction angle outer	15°
Correction angle inner	60°
Valve disc	35 mm inlet 32 mm outlet
Width of valve seating	1.2—1.4 mm
Diameter of valve stems	7.945—7.96 mm
Bore of valve guides	8—8.015 mm
Valve spring pressure at a length of 29 mm	25—26 kg
<b>Cylinder head bolt torque moment</b>	3.5 mkg (retighten when engine is cold)

**Carburettor**

Type of carburettor

Gravity registering carburettor Bing 7/28/19

	1st stage	2nd stage	3rd stage
Main jet	72	80	118
Compensating jet	90	90	90
Mixing tube	6	7	10
Adjusting air jet	190		
Starter jet	90		
Idling jet	44		

Air regulator screw  
Float needleabout 1<sup>3</sup>/<sub>4</sub> turnings loosened  
spring loaded**Air filter**

Oil filling quantities

oil-bath filter  
about 150 cm<sup>3</sup> SAE 20**Fuel unit**Axial play of con-rod  
Fuel pump pressure  
Fuel filter  
Fuel tank and filler cap  
Fuel tank capacity  
Of which is reserve supplyDiaphragm pump, mechanical drive  
0.05—0.1 mm  
0.08—0.15 kg/cm<sup>2</sup>  
Screen in fuel pump cover  
Under hood luggage compartment  
approx. 5 1/2 gal.  
approx. 1 gal. (indicator light at dashboard  
or reserve fuel cock under dashboard)  
approx. 47 m.p.g.Normal fuel consumption according to  
DIN 70030**Electrical system (engine)**Type  
Battery  
Ignition coils  
Regulator switch  
Idling voltage  
Reverse current  
Regulating voltage at 13 Amp.  
Regulating resistor  
Starting voltage  
Ignition  
Contact breaker gap  
Closing angle  
Contact pressure  
Ignition timing  
Ignition marking  
Ignition adjustment12 V with voltage control  
starter generator 12 V 130 W  
AZ/DJ 2 T 130/12/1800+0.6 R 2  
12 V 32 Ah  
2 x 6 V/Bosch TJ6/4 DIN 72535  
Bosch RS/ZO 60—130/12 A 4  
14.5—15 V  
4—9 Amp at 12.2 V battery voltage  
13.7—14.8 V  
7.5—8 Ohm  
13.—13.6 V  
Battery ignition  
0.35—0.40 mm  
206° 30  
600—700 gr  
TDC (Centrifugal governor shut)  
on the fan wheel  
0° at 1040—1100 r.p.m.  
5° at 1100—1200 r.p.m.  
10° at 1150—1250 r.p.m.  
15° at 1500—1600 r.p.m.  
20° at 2150—2250 r.p.m.  
25° at 3000—3150 r.p.m.  
30° at 3800—4000 r.p.m.  
35° at 4800—5000 r.p.m.

Type of spark plugs

as Bosch W 225 T 2 or 240 T 2, as way  
of driving demands**Cooling system**

Supply quantity

forced air cooling  
about 0.45 m<sup>3</sup>/sek. at 6000 r.p.m.**Lubricating system**Oil pump  
Axial play of the toothed  
wheels in the oil pump housing  
Radial play of the toothed  
wheels in the oil pump housing  
Tooth flank play of the toothed  
wheels in the oil pump housing  
Oil pressurepressure circulation/dry sump  
Gear type (height of teeth 20 mm)

Max. 0.02 mm

Max. 0.02 mm

Max. 0.015 mm  
approx. 3.0 atmos at 5500 r.p.m.,  
oil temperature 90° COil pressure gauge  
Oil filterlight on dashboard  
Micronic filter (interchangeable)

Lubricant	Trade mark oil type HD for Diesel engines (such as Shell-Rotella) of the classification API Group DG SAE 30 in summer SAE 20 normally SAE 10 for extremely deep temperatures
Oil quantity (for engine – gearbox – differential)	(a) when the system is completely empty 2.35 l (b) when oil change with replacing the filter 2.1 l (c) when oil change without replacing the filter 2.0 l (d) quantity of oil between lower and upper marking on the oil dip pin about 0.56 l
<b>Clutch</b>	
Construction	Single plate dry clutch
Lining surface	198 cm
Outer diameter of clutch lining	160 mm
Inner diameter of clutch lining	110 mm
Play of disengaging lever	about 10 mm
Play of clutch pedal	about 20–30 mm
Clutch springs	9 pieces
Spring length (relieved)	37.14 mm
<b>Gearbox – differential</b>	
Gearbox	4 speed all forward speeds synchronised

**Total reductions**

Gear	Gearbox	Change speed gear	Rear axle drive	Total reduction
1st	2.07	4.14	2.31	19.8
2nd	2.07	2.21	2.31	10.57
3rd	2.07	1.41	2.31	6.74
4th	2.07	1.00	2.31	4.78
Reverse	2.07	5.38	2.31	25.73

Type	Rod linkage gear changing in the middle of the car
Fitting axial play of gearshafts	Max. 0.2 mm
Fitting axial play of differentials	0 mm
Fitting axial play of universal joint	0 mm

## Chassis

**Steering**

Type	Rack and pinion steering with equal length track rods
Steering ratio	2.4 wheel revs from lock to lock
Diameter of turning circle	28.2 ft.
Steering lock	32° outside 40° inside
Steering play	0 mm
Steering adjusting	by eccentric bolt

**Front Axles**

Front Axles	independent wheel suspension by wishbones coil springs
Springing	333.0—351 kg marked by one line 351.1—369 kg marked by two lines 369.1—387 kg marked by three lines Replace springs only in pairs.
Loading capacity	hydraulic
Dampers	2 <sup>o</sup>
Camber	6°
Castor	7°
Inclination	} loaded (not adjustable)
Toe-in	
Steering swivel bolt diameter	17.973—17.984 mm
Bore of steering swivel bush diameter	18—18.027 mm

**Rear Axles**

Rear Axles	independent suspension by swing axles coil springs
Springing	362.7—380.0 kg marked with one line 381.0—399.1 kg marked with two lines 399.2—417.3 kg marked with three lines Replace springs only in pairs.
Loading capacity	hydraulic
Dampers	hydraulic

**Foot brake**

Brake drum diameter	hydraulic internal expanding shoe brake operating on all four wheels
Width of brake lining	180 mm
Operating braking area	30 mm front 202 cm <sup>2</sup> rear 202 cm <sup>2</sup>
Wheel brake cylinder diameter	front 19.05 mm
Wheel brake cylinder diameter	rear 14.29 mm
Braking retardation	8.0 m/sek <sup>2</sup> (when vehicle is totally loaded)
Play of piston rod of main brake cylinder	1—2 mm
Play of brake pedal	10—20 mm
Brake fluid	about 100 cm <sup>3</sup> "Ate" "Lockheed"

**Hand brake**

Hand brake adjustment	cable brake operating on both rear wheels
Braking retardation	3rd pinion when vehicle is totally loaded 3.5 m/sek <sup>2</sup>

**Wheels and Tyres**

Type	Steel disc wheels with well base rims
Rim dimensions	3.00—12
Tyre dimensions	4.40 x 12
Tyre pressure (cold) front	1.3—1.5 atmos as load requires
Tyre pressure (cold) rear	1.5—1.7 atmos as load requires
Spare wheels	in front — stowed under boot hood

## Electrical equipment

<b>Head lamp</b> (type changeable)	1st Bosch LE 1556 A 2nd Bosch LE 1551 A 3rd Hella TE 1.073500	assymetric symetric symetric
<b>Light bulbs</b>		
Head light	B 12 V 35/35 W	DIN 72601
Parking light	H 12 V 2 W	DIN 72601
Blink light, front	R 12 V 18 W	DIN 72601
Brake and blink light	R 12 V 18 W	DIN 72601
Tail light	G 12 V 3 W	DIN 72601
Number plate light	L 12 V 5 W	DIN 72601
Interior light	L 12 V 5 W	DIN 72601
Control light in combination rim	H 12 V 2 W	DIN 72601
Blinker (changeable)	Bosch Hella SWF	} 12 V 2x18 W
Signalhorn (changeable)	Bosch HF 12 Hella B 31/12 V	
Windscreen wiper	Electrically operating double windscreen wipers	
Fuses	8 Amp fuse	

## Dimensions and weights

<b>Coachwork</b>	chassisless all steel body
Type	coupe with two doors
<b>Main measurements</b>	
Overall length	3600 mm
Overall width	1480 mm
Overall height	1230 mm
<b>Weights</b>	
When empty (ready for driving, fuel tank)	560 kg
Permissible total weight	805 kg
Permissible axle load, front	375 kg
Permissible axle load, rear	430 kg
Pay-load	2 persons (each 75 kg) + 100 kg luggage
Power to weight ratio	18.5 kg/PS (unloaded)
<b>Other datas</b>	
Max speeds	1. 1st gear 20 m.p.h. 2. 2nd gear 40 m.p.h. 3. 3rd gear 60 m.p.h. 4. 4th gear 80 m.p.h.
Periods of acceleration	From 0 to 40 m.p.h. in 9.6 sec. From 0 to 50 m.p.h. in 16.5 sec.
Wheelbase	2000 mm
Track front	1203 mm
Track rear	1178 mm

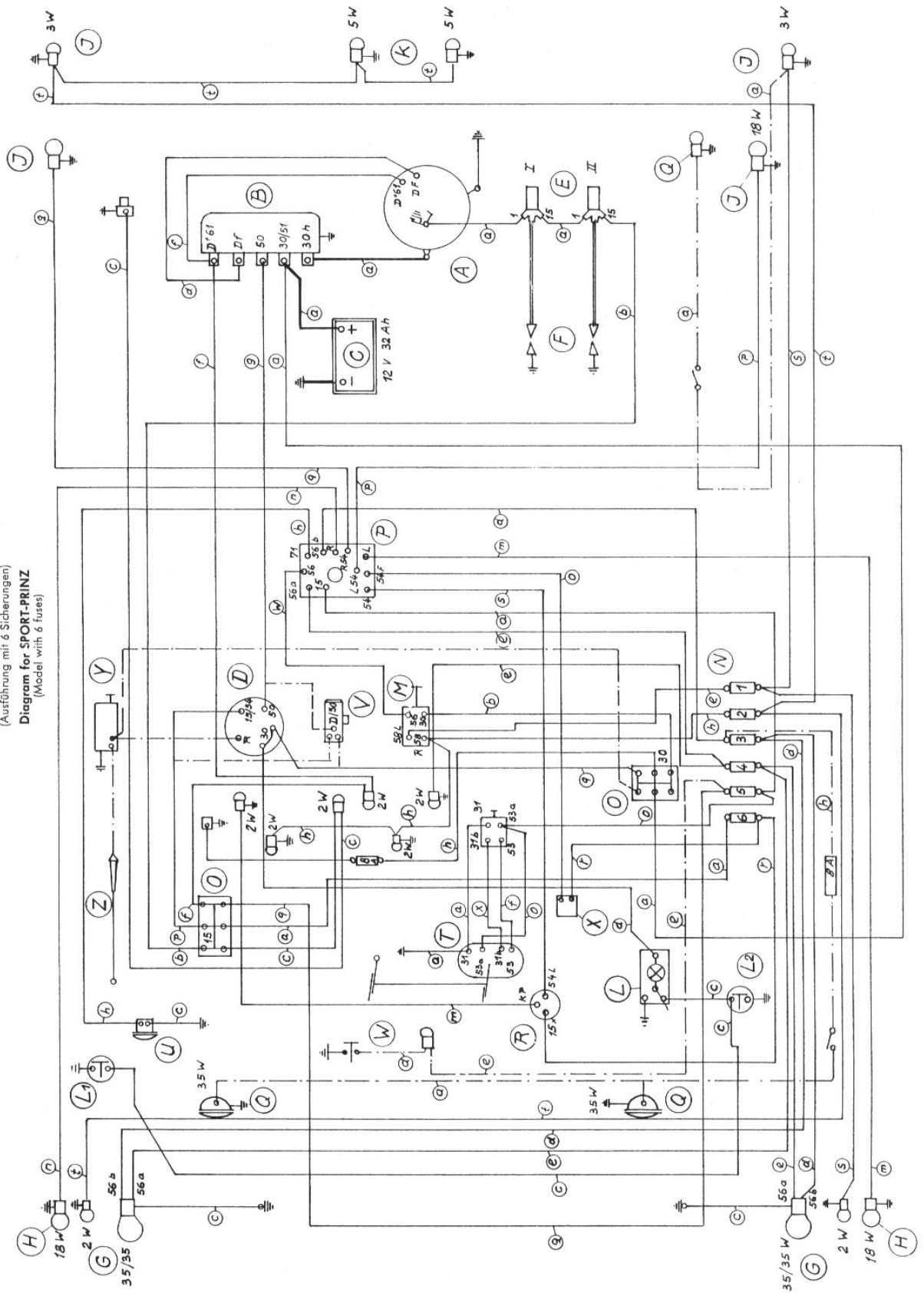
## Cable circuits switch diagram SPORT PRINZ

Lead from	Terminal	To	Terminal	Colour	Cross section mm <sup>2</sup>
Battery	+	Regulator	30/51	Black	a 1.6
Regulator	30/51	Distributor	30	Black	a 2.5
Distributor	30	Ign. starter switch	30	Black/Yellow	q 1.5
Distributor	30	Light switch	30	Red	b 1.5
Distributor	15	Fuses	5	Black/Yellow	q 1.5
Ignition starter switch	30	Interior lighting	—	Yellow	d 1.5
Ignition starter switch	50	Regulator	50	Green	g 1.5
Distributor	15	Ign. St. Sw.	15/54	Black/Red	p 1.5
Distributor	15	Spark plug No. II	15	Red	b 1.5
Distributor	15	Charge indicator lamp	—	Light blue	f 0.75
Distributor	15	Fuses	6	Black	a 1.0
Charge indicator		Regulator	D+61	Light blue	f 0.75
Double switch	56	Light switch	56	White/Black	w 1.0
Fuses	2	Light switch	58R	Grey	h 0.75
Fuses	5a	Double switch	15	Black	a 1.0
Fuses	5a	Switch wiper	53a	Black/lilac	o 0.75
Switch, wiper	53	Wiper motor	53	Light blue	f 0.75
Double switch	56a	Fuses	4	White	e 0.75
Fuses	4	Head light switch	—	White	e 0.75
Fuses	4a	Head light left	56a	White	e 1.0
Fuses	4a	Head light right	56a	White	e 1.0
Double switch	56b	Fuses	3	Yellow	d 1.0
Fuses	3a	Dimmer left	56b	Yellow	d 1.0
Fuses	3a	Dimmer right	56b	Yellow	d 1.0
Fuses	1a	Parking light left	—	Grey/Black	s 0.75
Fuses	2a	Parking light right	—	Grey/Red	t 0.75
Fuses	2a	Rear light right	—	Grey/Red	t 0.75
Rear light right	—	Number plate right	—	Grey/Red	t 0.75
Number plate right	—	Number plate left	—	Grey/Red	t 0.75
Fuses	1a	Rear light left	—	Grey/Black	s 0.75
Light switch	58R	Instrument panel I	—	Grey	h 0.75
Instrument panel	1	Instrument panel II	—	Grey	h 0.75
Double switch	71	Horn	—	Grey	h 1.0
Fuses	6a	Blinker 15 X	—	Grey/Green	r 0.75
Light switch	54	Blinker 54 L	—	Grey/Black	s 0.75
Blinker	KP	Blinker switch	—	Black/White	m 0.75
Double switch	L	Blinker front left	—	Black/White	m 0.75
Double switch	R	Blinker front right	—	Black/Green	n 0.75
Double switch rear	L54	Brake light left	—	Black/Red	p 0.75
Double switch rear	R54	Brake light right	—	Black/Yellow	q 0.75
Double switch	54f	Brake light switch	—	Black/lilac	o 0.75
Fuses	6a	Brake light switch	—	Grey/Green	r 0.75
Fuel gauge		Fuel gauge light	—	Yellow	d 1.5
Fuses	5	Fuel gauge light	—	Light Blue	f 1.5
Spark Plug No. I	15	Spark Plug No: II	1	Black	a 1.0
Dyno starter		Spark Plug No: I	1	Black	a 1.5
Dyno starter		Regulator	30b	Black	a 16.0
Interior lighting		Door contact switch		Brown	c 0.75
Door contact	left	Door contact	right	Brown	c 0.75
Wiper switch	53a	Wiper motor	53a	Black/lilac	o 0.75
Fuses	1	Light switch	58L	White	e 0.75
Wiper Switch	31b	Wiper motor	31b	Light blue/White	x 0.75
Wiper Switch	31	Wiper motor	31	Black	a 0.75
Distributor	15	Oil gauge lamp	—	Brown	c 0.75
Oil pressure switch		Oil gauge lamp	—	Brown	c 0.75
Distributor	30	Socket	—	Grey	h 1.5
Battery or motor	Masse			Bright	10.0
Horn	Masse			Brown	c 1.5
Wiper motor	Masse			Black	a 1.5
Head lamp	Masse			Brown	c 1.5
Regulator	Masse			Black	a 1.0
Rear light left		Switch, rear light lamp		Black	a 1.5
Switch, rear light lamp		Rear light lamp		Black	a 1.5

### Interpretation of large letters on SPORT PRINZ diagram

Large letters	Small letters
A Starter generator	a Black
B Regulator	b Red
C Battery	c Brown
D Ignition/Starting switch	d Yellow
E Spark plugs	e White
F Spark plugs	f Light blue
G Head light	g Green
H Blinker light front	h Grey
I Brake blinker light and rear light	i Lilac
K Licence plate light	m Black/White
L Interior lighting	n Black/Green
L1 Door contact right	o Black/Lilac
L2 Door contact left	p Black/Red
M Light switch	q Black/Yellow
N Fuse box	r Grey/Green
O Cable junction	s Grey/Black
P Twin lever switch on steering column	t Grey/Red
Q Special fittings (reversing light, fog lamps)	u Light blue/Black
R Blinker	w White/Black
S Wiper motor	x Light blue/White
T Windshield wiper motor	
U Electric horn	
U1 Signal ring for horn	
V Steering column fuse and ignition/starter switch	
W Fuel gauge light	
X Brake light switch on main brake cylinder	
Y Radio	
Z Aerial	

Schaltplan für SPORT-PRINZ  
 (Ausführung mit 6 Sicherungen)  
 Diagram for SPORT-PRINZ  
 (Model with 6 fuses)





Schaltplan für SPORT-PRINZ  
(Ausführung mit 8 Sicherungen)  
Diagram for SPORT-PRINZ  
(Model with 8 fuses)

