

RALLY PARTS MANUAL

Mazda 323 4WD



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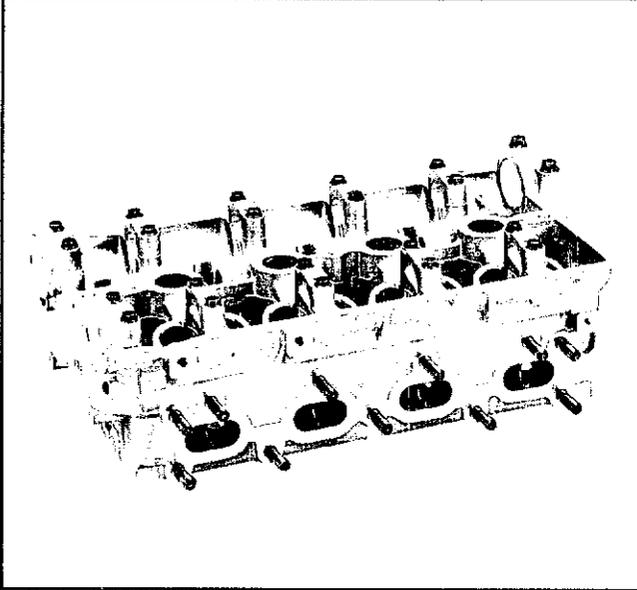
OTHERS

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Note:

1. Those automobiles subjected to tuning may be restricted by traffic regulation when driving on the public road.
2. Since each of the rallies has its own individual rules, please maintain the rules by performing the tuning up in accordance with the requirement when using the parts mentioned in the manual.
3. Please note that claims will not be accepted for the defect of the rally parts.

Cylinder Head



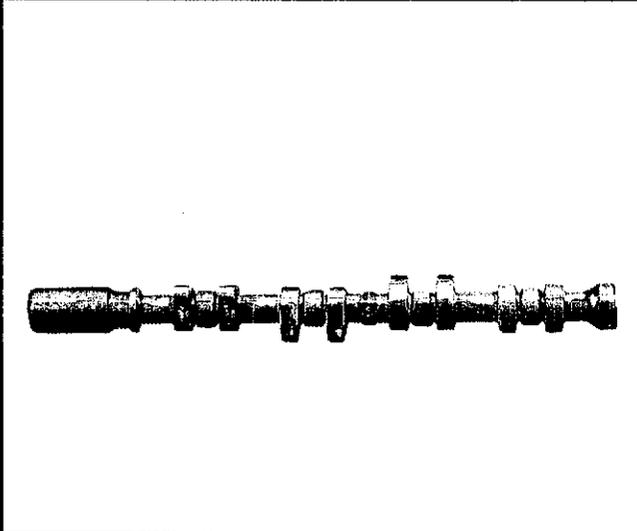
This cylinder head assembly is used for the mass-produced 323 1.6L 4WD.

Please consult with ENEM about the tune-up.

Parts required

Part No.	Qty	Remarks
B695 10 100G	1	

Camshaft Base



This is a camshaft base made of spheroidal graphite cast iron.

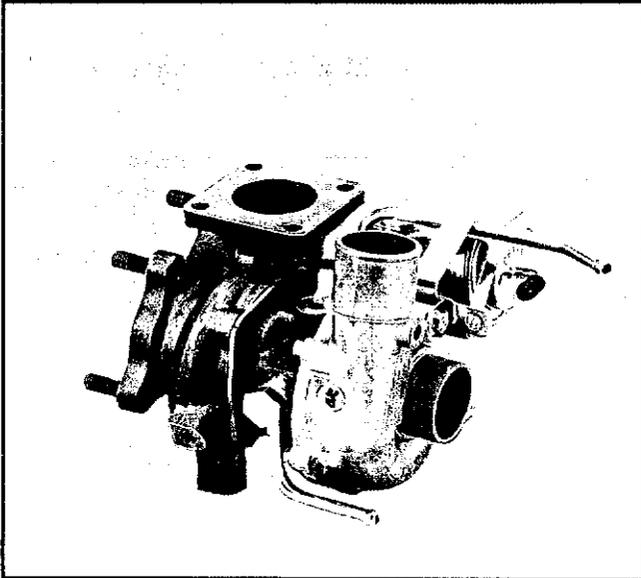
It has not been machined, leaving a sufficient margin to select cam profiles that meet a variety of purposes.

Please consult with ENEM about machining.

Parts required

Part No.	Qty	Remarks
B6N7 12 421	2	

Turbocharger



Supercharging pressure can be adjusted by an adjustable rod. The valve actuator assembly (part no. B6N7 13 70Y) is available separately.

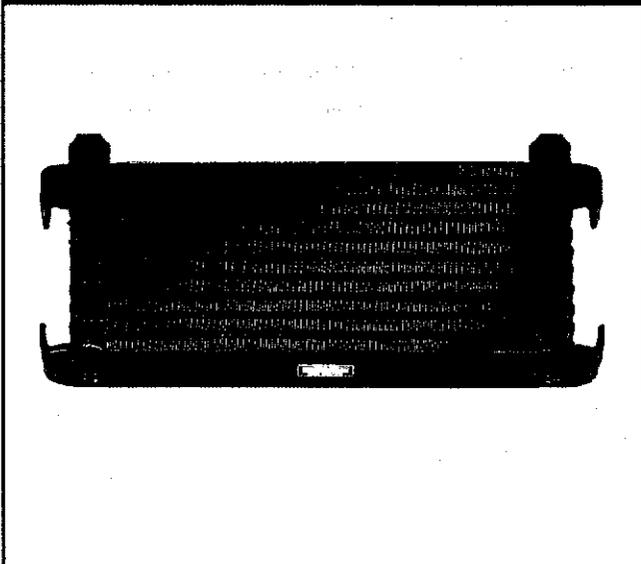
Main specifications

Item	Rally parts	STD
Supercharging pressure (mmHg)	800 (valuable type)	550

Parts required

Part No.	Qty	Remarks
B6N7 13 700	1	
B6N7 13 70Y	1	Valve Actuator only

Oil Cooler



This is an independent oil cooler assembly. The oil cooler assembly controls the oil temperature in tough international rallies.

Main specifications

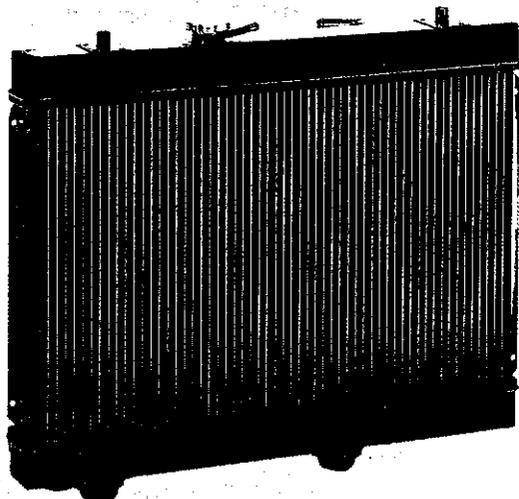
Item	Rally parts	
Cooling method	Air-cooled	
Radiation capacity (kcal/h)	more than 8,000	
Core size (mm)	Length	300
	Height	150
	Width	50

Parts required

Part No.	Qty	Remarks
B6N7 14 700	1	
B630 10 319	1	Oil Filter Joint
B6N7 14 287	1	Oil Pipe Connector
B6N7 14 311	1	Oil Filter Body
9954 20 6001	1	O Ring

* These parts are needed to replace the factory installed oil cooler.

Radiator



The radiator controls the water temperature in tough international rallies.

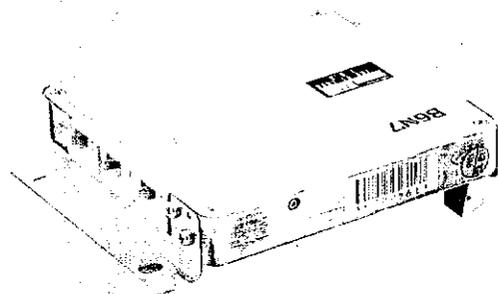
Main specifications

Item	Rally parts	STD
Material	Cu	←
Radiation capacity (kcal/h)	42,300	36,000
Cooling water capacity (ℓ)	3.2	2.0
Fin pitch	1.3	1.5
Core size (mm)	Length	528
	Height	350
	Width	49
		32

Parts required

Part No.	Qty	Remarks
B6N7 15 200	1	

Control Unit



The control unit enables to raise the limitation of fuel cut revolution in order to improve engine performance.

Main specifications

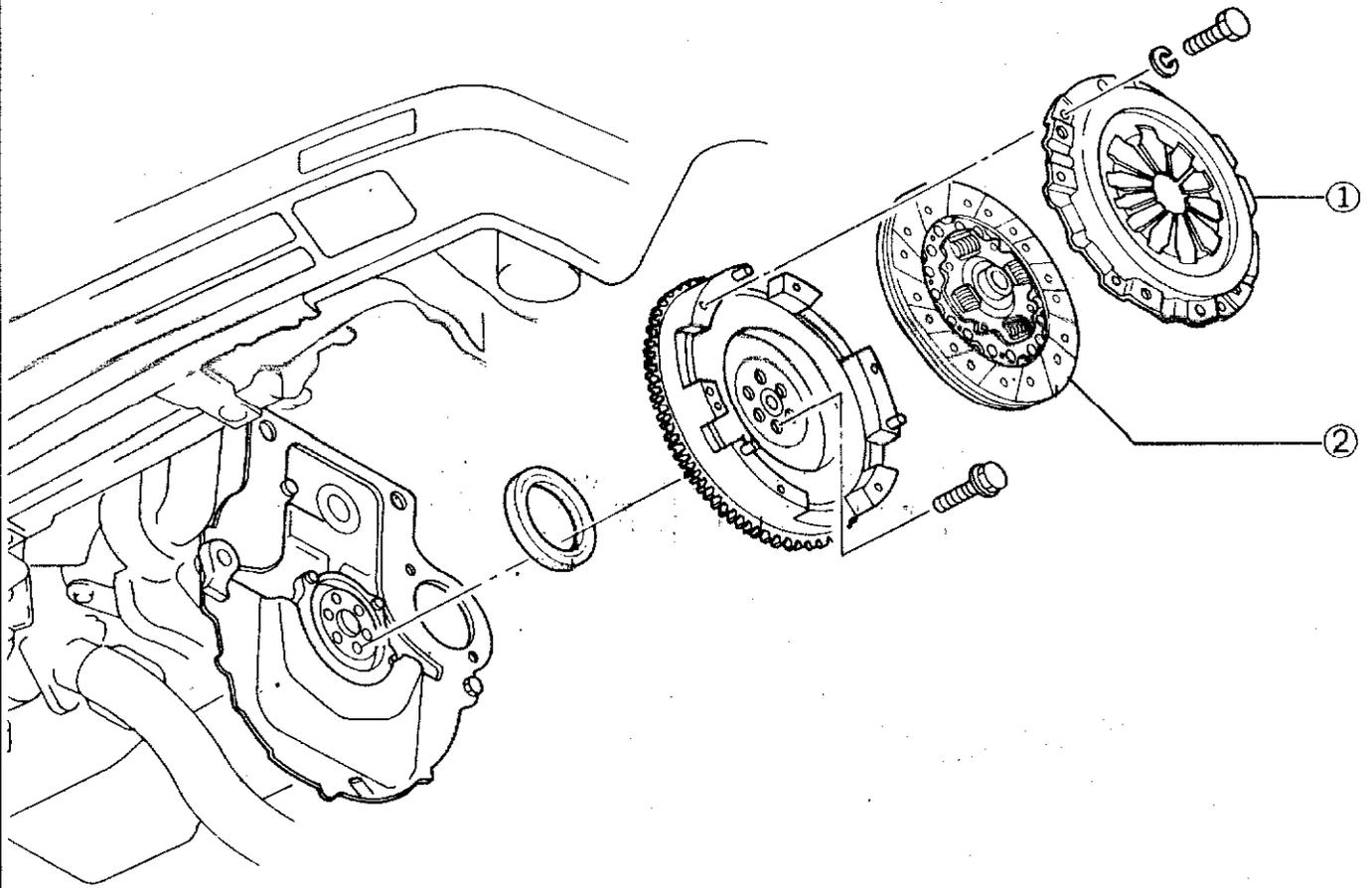
Item	Rally parts	STD
Fuel cut (rpm)	7,500	6,800

Parts required

Part No.	Qty	Remarks
B6N7 18 880	1	

CLUTCH & ENGINE MOUNTING

CLUTCH



Major modifications and characteristics

New clutch assembly which load rating has been increased to 600 kg has been established in addition to current rally clutch assembly. The anti-slip performance has been improved by

means of high friction coefficient material. New clutch cover has been applied by Mazda Rally Team Europe .

Main specifications

Item		Rally parts		STD
Clutch	Clutch assembly	Dry single-plate diaphragm		←
	Outside diameter × Inside diameter × Thickness (mm)	225×150×3.5		←
	Facing material	H 815		←
	Free thickness (mm)	8.4±0.3		8.9±0.3
	All surface friction area (cm ²)	220		←
Clutch cover	Type	DST (Diaphragm Spring Turnover)		←
	Spring load (kg)	530	600	

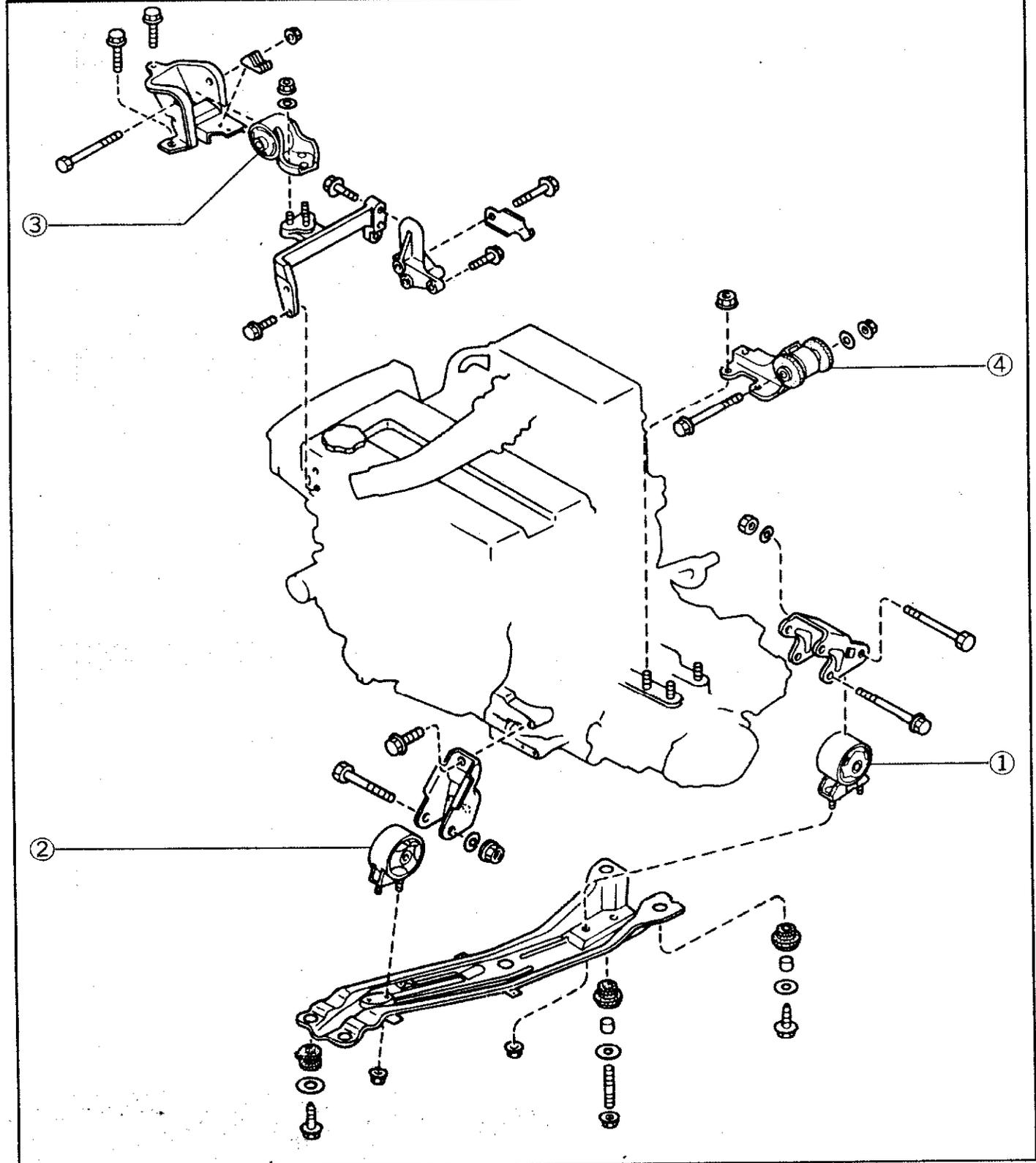
Parts required

No.	Part No.	Description	Qty	Remarks
1	B6Y1 16 410B	Clutch Cover Assy	1	530 kg, Group A
*	B6Y2 16 410	Clutch Cover Assy	1	600 kg, "
2	B6Y1 16 460A	Clutch Disk Assy	1	Group N & A

*Parts newly established.

CLUTCH & ENGINE MOUNTING

ENGINE MOUNTING RUBBERS



Major modifications and characteristics

The durability has been improved by increasing the hardness of the rubber.

Main specifications

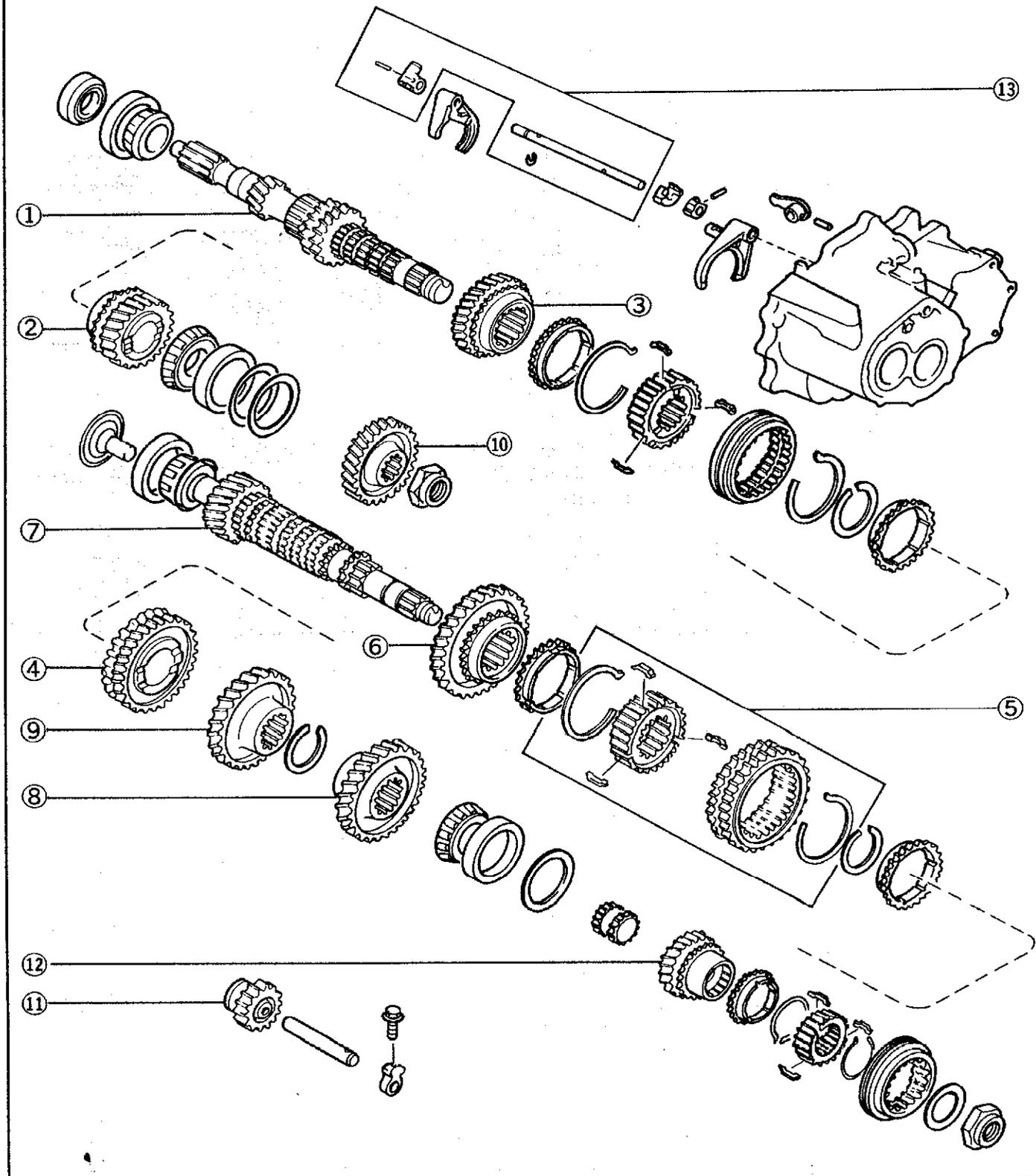
Item		Rally parts	STD
Rubber hardness	Eng. Mtg No.1	75°	55°
	// No.2	75°	52°
	// No.3	70°	50°
	// No.4	70°	60°

Parts required

No.	Part No.	Description	Qty	Remarks
1	B2Y2 39 040	Mtg. Rubber No.1	1	Group A
2	B2Y2 39 050	// No.2	1	//
3	B2Y2 39 060	// No.3	1	//
4	B2Y2 39 070	// No.4	1	//

TRANSAXLE & TRANSFER SY

TRANSMISSION



Major modifications and characteristics

1-5 speed gear ratio has been changed to achieve "close ratio". Also, the gear material has been changed, this together with the addition of

the "hard shot peening" enables to further increase the strength.

Main specifications

	Item	Rally parts	STD
Gear ratio	1st	3.000	3.307
	2nd	2.058	1.833
	3rd	1.565	1.233
	4th	1.344	0.970
	5th	1.078	0.795
	Reverse	3.166	3.166

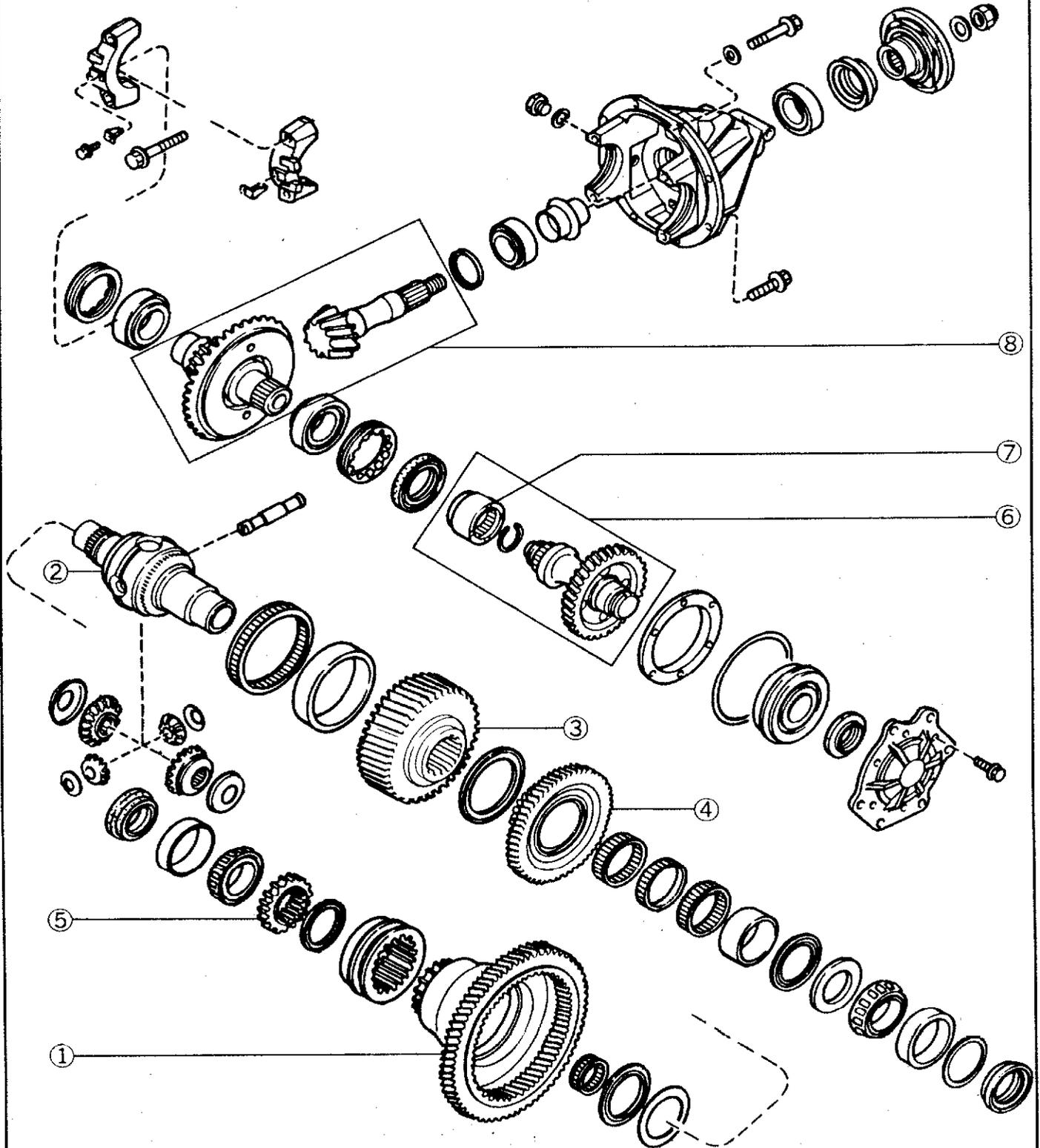
Parts required

No.	Part No.	Description	Qty	Remarks
1	G5Y1 17 201	Primary Shaft Gear	1	Group A
2	G5Y1 17 210	4th Gear Assy	1	//
3	G5Y1 17 230A	3rd Gear Assy	1	//
4	G5Y1 17 250	2nd Gear Assy	1	//
5	G5Y1 17 260B	Clutch Hub Assy	1	//
6	G5Y1 17 270A	1st Gear Assy	1	//
7	G5Y1 17 301A	2nd Gear Shaft	1	//
8	G5Y1 17 303	Secondary 4th Gear	1	//
9	G5Y1 17 305A	Secondary 3rd Gear	1	//
10	G5Y1 17 308	Primary 5th Gear	1	//
11	G5Y1 17 310	Reverse Idle Gear Assy	1	//
12	G5Y1 17 610	5th Gear Assy	1	//
13	G5Y1 17 460	Control Rod Assy	1	//

Note : Item no. 3, 5, 6, 7, 9, 13 and item no. 1 on page 15 are to be assembled as a set. Unless otherwise, there may be a case that these parts cannot be assembled.

TRANSAXLE & TRANSFER SY

TRANSFER



Major modifications and characteristics

Steering stability at the rough road is improved by abolishing the center diff. lock portion and

establishing a lock ring resulting in the termination of the center diff movement.

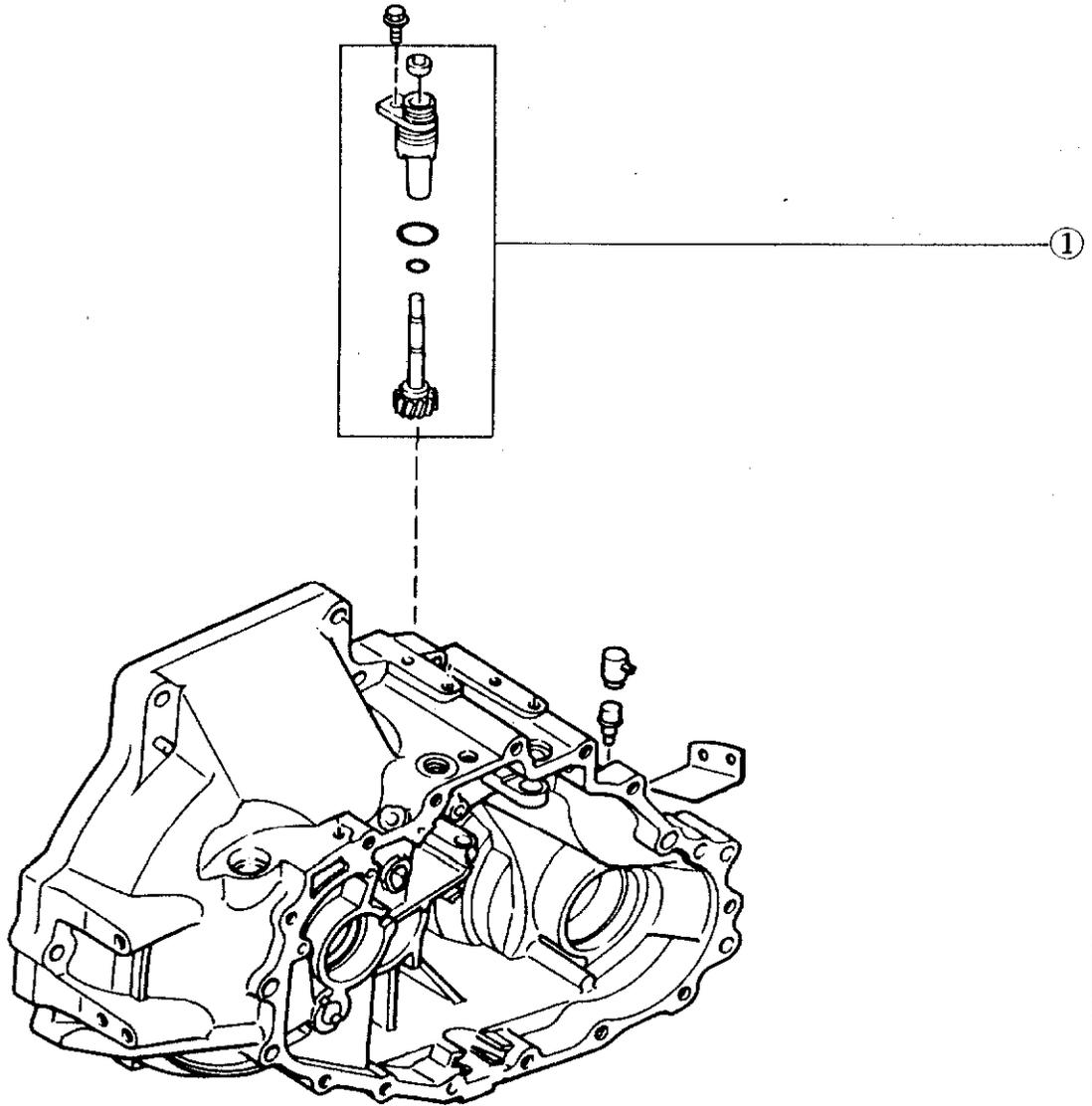
Main specifications

Item		Rally parts	STD	
Front final gear ratio		4.411	4.105	
Center differential	Type	Direct type	Planetary gear type	
	Number of ring gear cogs	Outer	75	
		Inner	Serration axle	60
	Number of pinion gear cogs	Outer	—	14
		Inner	—	14
	Number of sun gear cogs	Pinion gear side	Serration axle	30
		Idle gear side	43	50
Number of idle gear cogs		37	43	
Transfer carrier	Number of ring gear cogs	37+Hard shot	37	
	Number of pinion gear cogs	11+Hard shot	11	

Parts required

No.	Part No.	Description	Qty	Remarks
1	G0Y1 27 531A	Ring Gear	1	Group A
2	G0Y1 27 541	Gear Case	1	//
3	G0Y1 27 555	Lock Ring	1	//
4	G0Y1 27 571	Sun Gear	1	//
5	G0Y1 27 581	Spacer	1	//
6	G0Y1 27 610	Idle Driving Gear	1	//
7	G0Y1 27 631	Joint Sleeve	1	//
8	G0Y1 27 650	Diff. Gear Set	1	//

SPEEDOMETER DRIVEN GEAR



Major modifications and characteristics

The gear material has been changed from nylon to steel in order to increase the wear resistance.

Main specifications

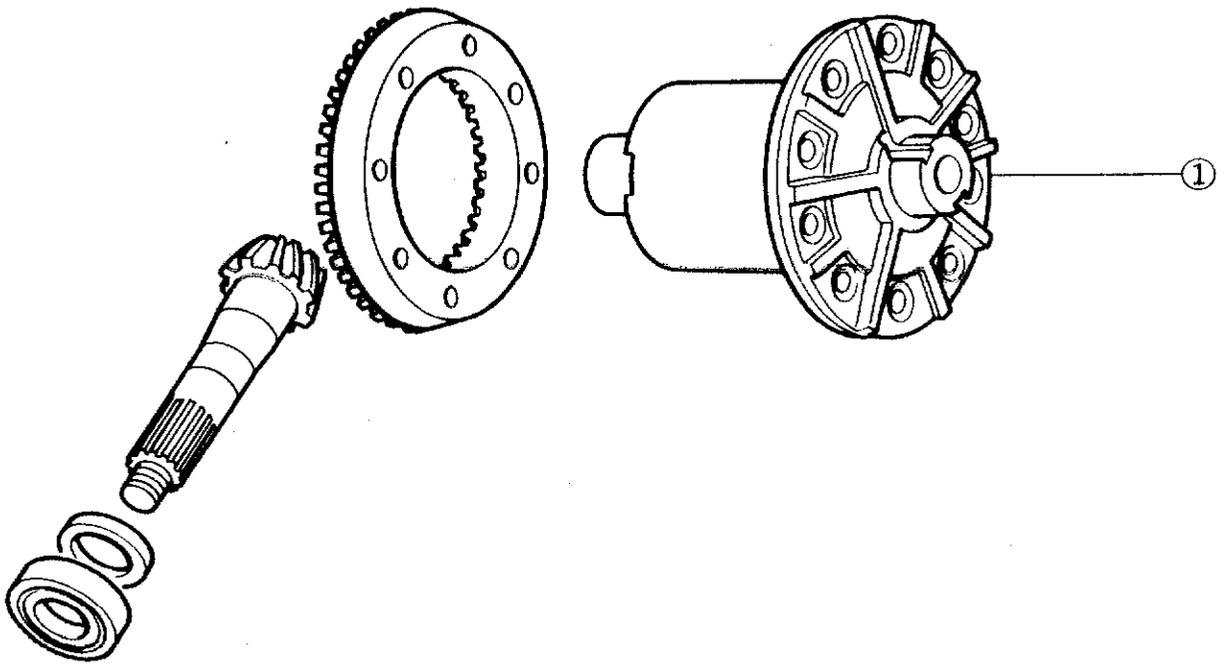
Item		Rally parts	STD
Gear ratio		1.045	←
Gear material	Drive side	Steel	Nylon
	Driven side	Steel	Nylon

Parts required

No.	Part No.	Description	Qty	Remarks
1	G5Y1 17 400A	Speed Gear Set	1	Group A

DIFFERENTIAL

LIMITED SLIP DIFFERENTIAL



Major modifications and characteristics

The Limited Slip Differential has achieved 75% locking ratio for 323 4WD rally car. The L.S.D.

has controlled the difference of rear wheel drive to improve driving stability.

Main specifications

Item	Rally parts	STD
Gear case	2 division type	Integrated type
Differential	4 pinions	2 pinions

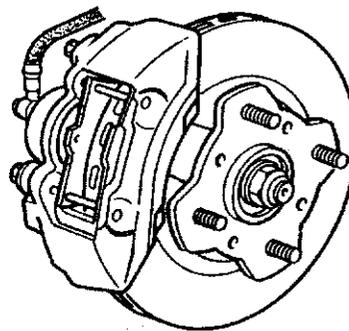
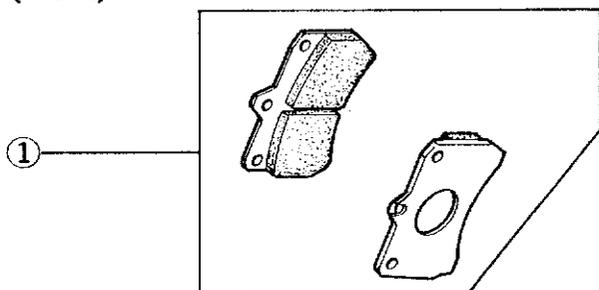
Parts required

No.	Part No.	Description	Qty	Remarks
1	TOY1 27 200	Limited Slip Diff. Assy	1	Group A

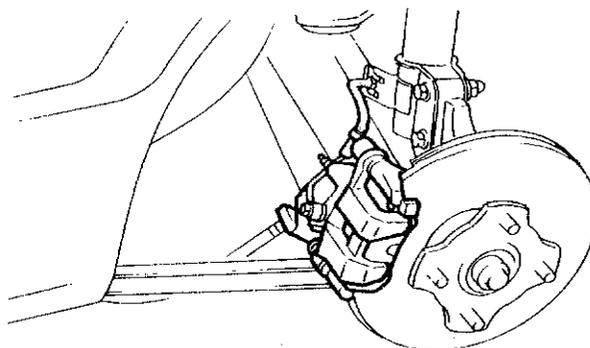
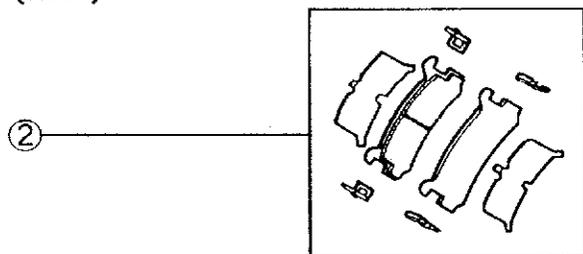
BRAKE

BRAKE PADS

(Front)



(Rear)



CHASSIS

Major modifications and characteristics

Two types of excellent wear resistance and fade resistance, pads have been provided for both front and rear.

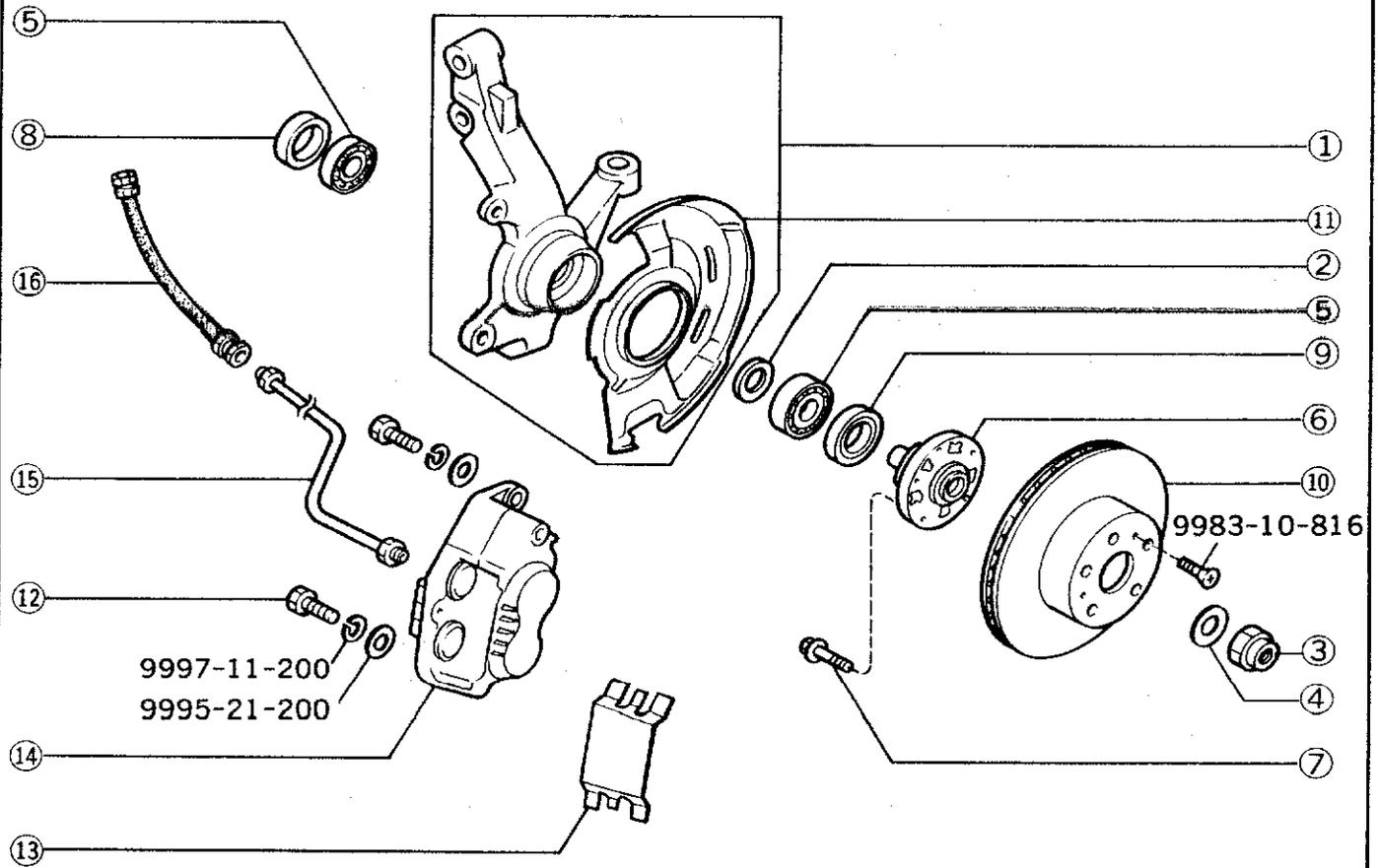
Main specifications

Item		Rally parts	STD
Front	Pad area (cm ² /number of pads)	40	←
	Pad material	Resin molded (SS100 & SS123)	Resin molded (S8F)
	Pad size (mm) (Width×Length×Thickness)	47.5×91.7×10.0	←
Rear	Pad area (cm ² /number of pads)	27	←
	Pad material	Resin molded (SS100 & SS123)	Resin molded (S8F)
	Pad size (mm) (Width × Length × Thickness)	31.0×88.0×8.0	←

Parts required

No.	Part No.	Description	Qty	Remarks
1	B2Y5 49 280	Front Pad Sub-Set	1	SS 123, Group N & A
	B2Y4 49 280	//	1	SS 100, //
2	B2Y2 49 480	Rear Pad Sub-Set	1	SS 123, //
	B2Y3 49 480	//	1	SS 100, //

FRONT DISK BRAKE



Note : Wheels with the specification of 6JJ×15, 5 hole-type, 54mm offset and 114.3mm P.C.D. can be used.

Major modifications and characteristics

Opposing 4 piston aluminum alloy disk brake calipers and large capacity ventilated disk plates

are provided to withstand hard use and also stabilize performance for Group A rally.

Main specifications

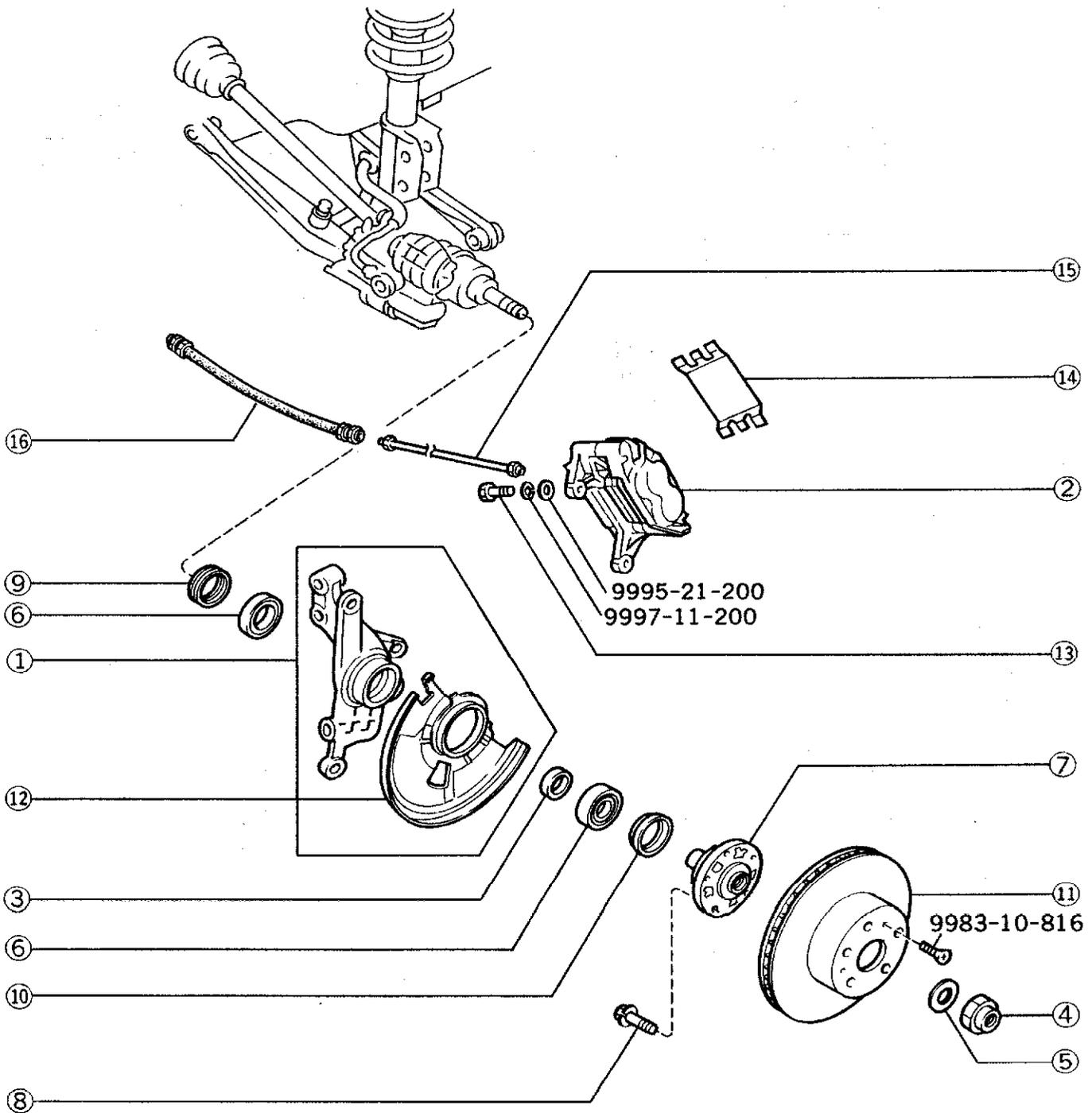
Item		Rally parts	STD
Caliper	Caliper assembly	Disk	←
	Cylinder. Inside diameter (mm)	36.1×4	50.8×1
	Pad area (cm ² /number of pads)	47.3	40
	Pad material	Resin molded	←
	Pad size (Width×Length×Thickness) (mm)	51.0×105.2×11.0	47.5×91.7×10.0
Disk plate	Disk plate assembly	Ventilated	←
	Disk plate size (mm) (Outside diameter×Thickness)	276×22	260×18

Parts required

No.	Part No.	Description	Qty	Remarks
1	ZR01 33 020	Knuckle Assy (RH)	1	Group A
	ZR01 33 030	" (LH)	1	"
2	B001 33 041	Bearing Spacer	2	L=6.285, "
	B002 33 041	"	2	L=6.325, "
	B003 33 041	"	2	L=6.365, "
	B004 33 041	"	2	L=6.405, "
	B005 33 041	"	2	L=6.445, "
	B006 33 041	"	2	L=6.485, "
	B007 33 041	"	2	L=6.525, "
	B008 33 041	"	2	L=6.565, "
	B009 33 041	"	2	L=6.605, "
	B010 33 041	"	2	L=6.645, "
	B011 33 041	"	2	L=6.685, "
	B012 33 041	"	2	L=6.725, "
	B013 33 041	"	2	L=6.765, "
	B014 33 041	"	2	L=6.805, "
	B015 33 041	"	2	L=6.845, "
	B016 33 041	"	2	L=6.885, "
	B017 33 041	"	2	L=6.925, "
	B018 33 041	"	2	L=6.965, "
	B019 33 041	"	2	L=7.005, "
	B020 33 041	"	2	L=7.045, "
	B021 33 041	"	2	L=7.085, "
3	B001 33 042	Nut	2	"
4	B001 33 043	Washer	2	"
5	B001 33 047	Bearing	4	"
6	ZR01 33 061	Hub	2	"
7	8596 33 062	Hub Bolt	10	"
8	B210 33 065	Oil Seal	2	"
9	B210 33 067	"	2	"
10	FB05 33 251	Disk Plate	2	"
11	ZR01 33 261	Dust Cover (RH)	1	"
	ZR01 33 271	" (LH)	1	"
12	ZR01 33 301	Bolt	4	"
13	ZR01 33 633	Snow Protector	2	"
14	ZR01 33 980A	Brake Assy-Frt. (RH)	1	"
	ZR01 33 990A	" (LH)	1	"
15	ZR01 43 710	Brake Pipe (RH)	1	"
	ZR01 43 720	" (LH)	1	"
16	ZR01 43 810	Flex. Hose-Frt.	2	"
	ZR01 33 634	Back Plate for Brake Pad	4	"

BRAKE

REAR DISK BRAKE



Note : Wheels with the specification of 6JJ×15, 5 hole-type, 54mm offset and 114.3mm P.C.D. can be used.

Major modifications and characteristics

Opposing 4 piston aluminum alloy disk brake calipers and large capacity ventilated disk plates

are provided to withstand hard use and also stabilize performance for Group A rally.

Main Specifications

Item		Rally parts	STD
Caliper	Caliper assembly	Disk	←
	Cylinder. Inside diameter (mm)	34.0×4	30.2×1
	Pad area (cm ² /number of pads)	47.3	27
	Pad material	Resin molded	←
Disk plate	Pad size (Width×Length×Thickness) (mm)	51.0×105.2×11.0	31.0×88.0×8.0
	Disk plate assembly	Ventilated	Solid
Disk plate	Disk plate size (mm)	276×22	247×10
	(Outside diameter×Thickness)		

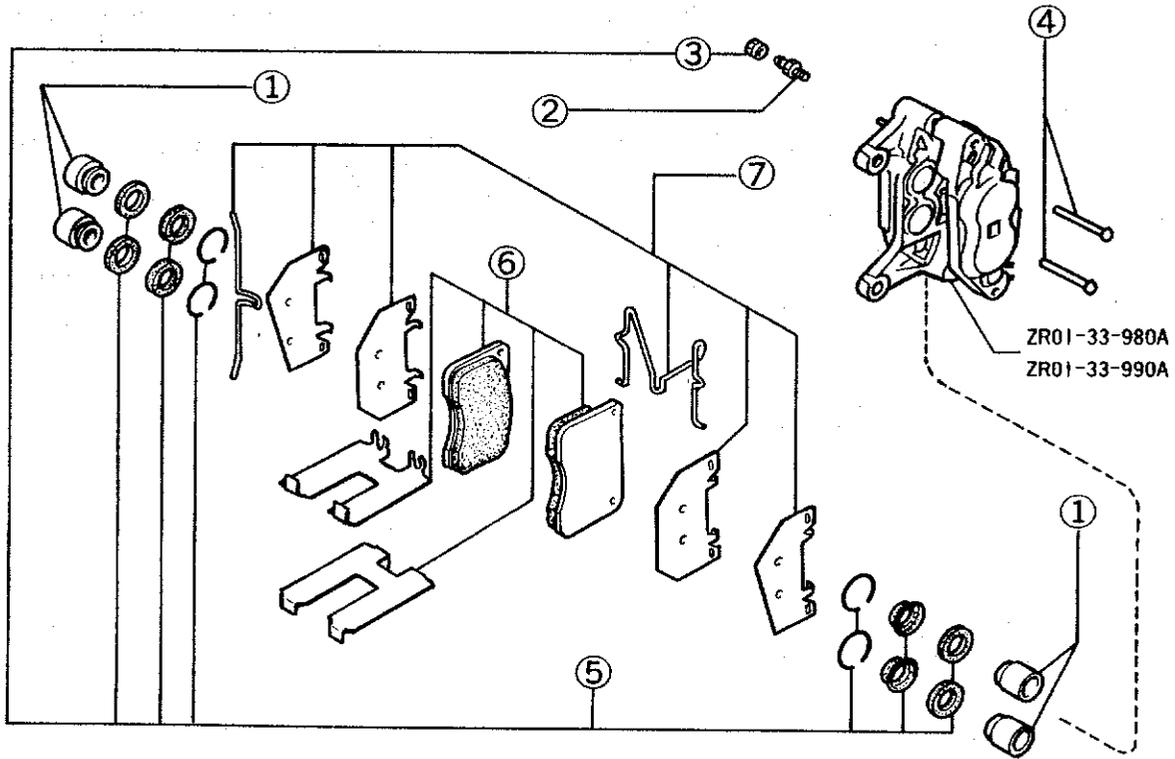
Caution in using the rear disk brake : To adjust the toe-out to be an absolute value of 1 or 2mm and adjust the camber to be minus 5/6°.

Parts required

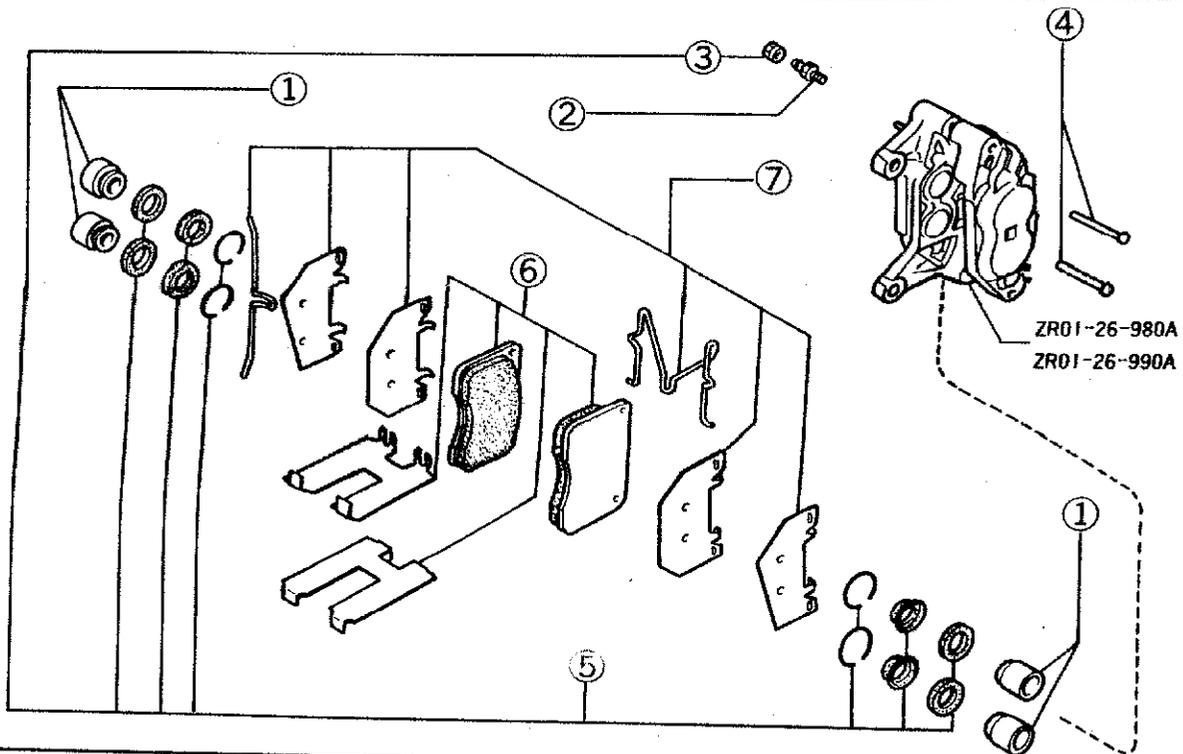
No.	Part No.	Description	Qty	Remarks
1	ZR01 26 110	Knuckle Assy (RH)	1	Group A
	ZR01 26 120	" (LH)	1	"
2	ZR01 26 980A	Brake Assy-Rear (RH)	1	"
	ZR01 26 990A	" (LH)	1	"
3	B001 33 041	Bearing Spacer	2	L=6.285, "
	B002 33 041	"	2	L=6.325, "
	B003 33 041	"	2	L=6.365, "
	B004 33 041	"	2	L=6.405, "
	B005 33 041	"	2	L=6.445, "
	B006 33 041	"	2	L=6.485, "
	B007 33 041	"	2	L=6.525, "
	B008 33 041	"	2	L=6.565, "
	B009 33 041	"	2	L=6.605, "
	B010 33 041	"	2	L=6.645, "
	B011 33 041	"	2	L=6.685, "
	B012 33 041	"	2	L=6.725, "
	B013 33 041	"	2	L=6.765, "
	B014 33 041	"	2	L=6.805, "
	B015 33 041	"	2	L=6.845, "
	B016 33 041	"	2	L=6.885, "
	B017 33 041	"	2	L=6.925, "
	B018 33 041	"	2	L=6.965, "
	B019 33 041	"	2	L=7.005, "
	B020 33 041	"	2	L=7.045, "
	B021 33 041	"	2	L=7.085, "
4	B001 33 042	Nut	2	"
5	B001 33 043	Washer	2	"
6	B001 33 047	Bearing	4	"
7	ZR01 33 061	Hub	2	"
8	8596 33 062	Hub Bolt	10	"
9	B210 33 065	Oil Seal	2	"
10	B210 33 067	"	2	"
11	FB05 33 251	Disk Plate	2	"
12	ZR01 33 261	Dust Cover (RH)	1	"
	ZR01 33 271	" (LH)	1	"
13	ZR01 33 301	Bolt	4	"
14	ZR01 33 633	Snow Protector	2	"
15	ZR01 43 650	Brake Pipe (RH)	1	"
	ZR01 43 660	" (LH)	1	"
16	ZR01 43 820	Flex. Hose-Rear	2	"
	ZR01 33 634	Back Plate for Brake Pad	4	"

BRAKE

FRONT BRAKE CALIPER COMPONENT PARTS



REAR BRAKE CALIPER COMPONENT PARTS



Major modifications and characteristics

The new brake pads have been specially made by FERODO. These brake pads possess unsurpassed wear resistance and fade resistance.

Mazda Rally Team Europe also use them for their rally vehicles.

Parts required for FRONT BRAKE CALIPER

No.	Part No.	Description	Qty	Remarks
1	FB05 33 651	Piston	8	Group A
2	FB05 33 691A	Screw, Bleeder	2	//
3	FB05 33 693	Cap, Rubber	2	//
4	FB05 33 696	Pin	4	//
5	FB05 49 240	Seal Kit	1	//
* 6	ZR01 49 280	Pad Set	1	//
7	FB05 49 290	Attachment-Pad	1	//

* Parts newly established.

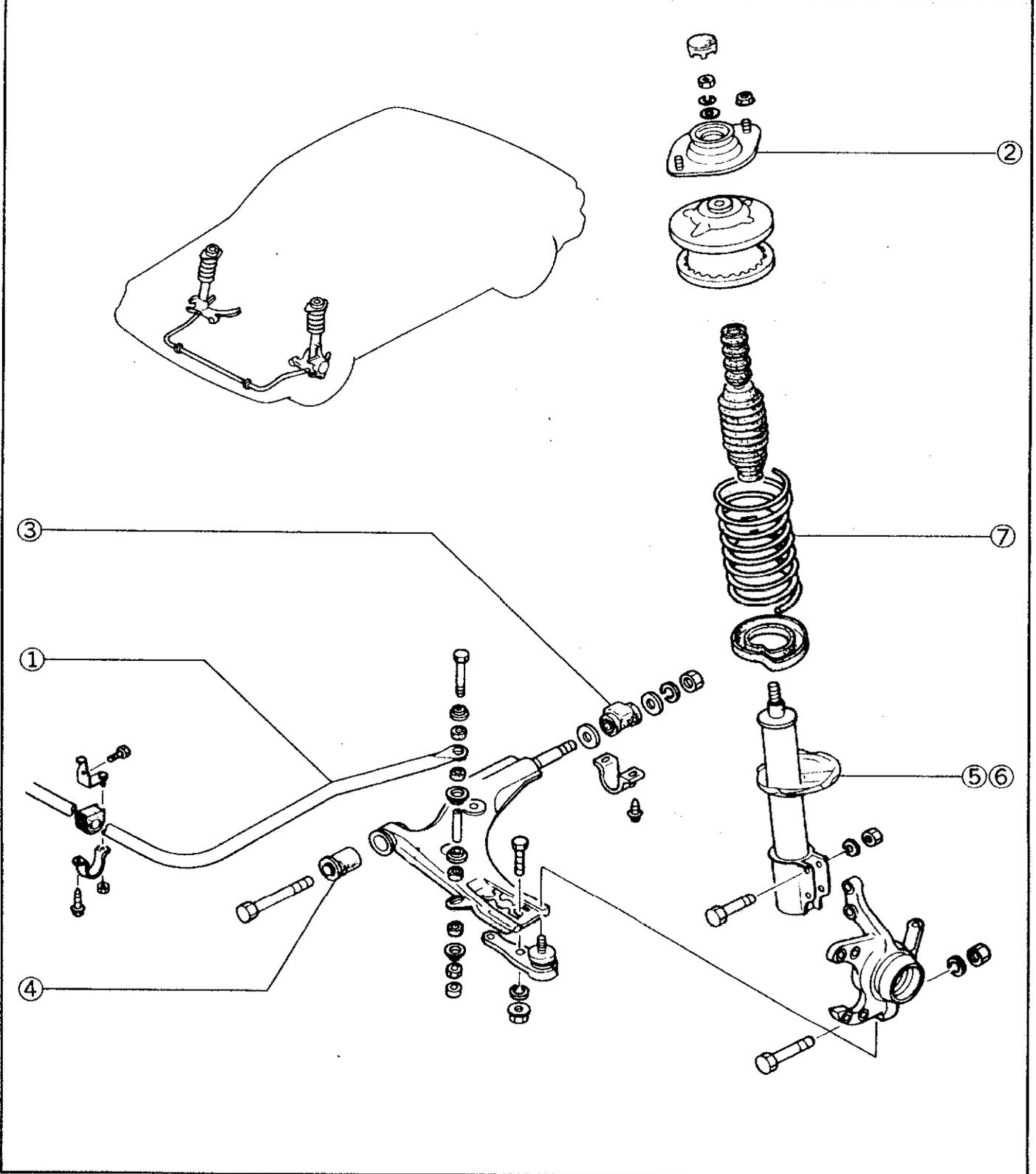
Parts required for REAR BRAKE CALIPER

No.	Part No.	Description	Qty	Remarks
* 1	ZR01 33 651	Piston	8	Group A
2	FB05 33 691A	Screw, Bleeder	2	//
3	FB05 33 693	Cap, Rubber	2	//
4	FB05 33 696	Pin	4	//
* 5	ZR01 49 240	Seal Kit	1	//
* 6	ZR01 49 280	Pad Set	1	//
7	FB05 49 290	Attachment-Pad	1	//

* Parts newly established.

SUSPENSION

FRONT SUSPENSION



Major modifications and characteristics

1) Shock absorber

For durability and stable steering on rough roads, the outside diameter has been changed to $\phi 50.8$ in order to maintain sufficient damping and prevent decreasing performance from excess heat.

2) Spring

By taking a special care to match the shock absorber, and by setting at minimum ground clearance of 126 mm, the steering stability has improved.

Main specifications

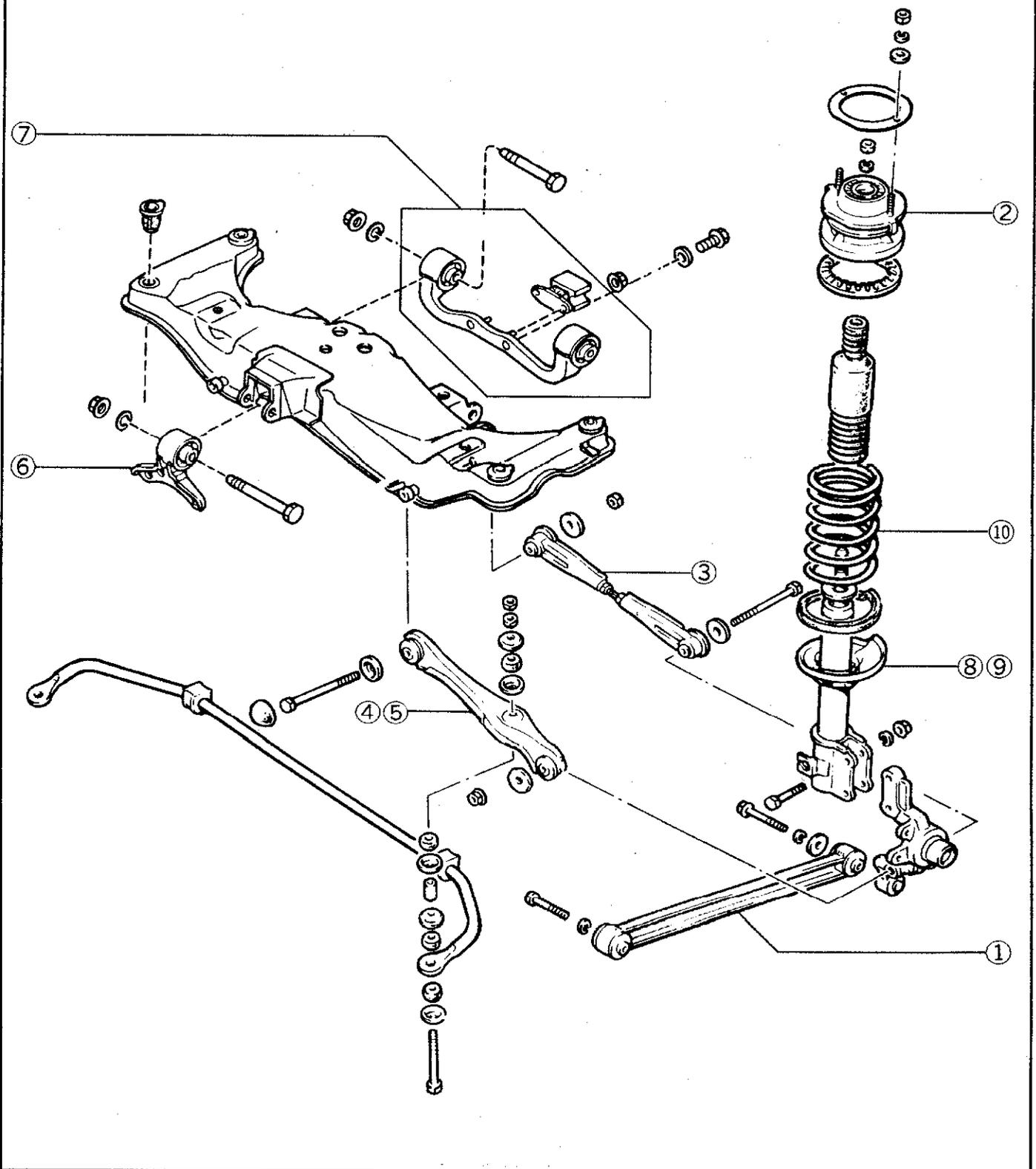
Item		Rally parts	STD
Type		Hard	←
Coil spring	Type	Constant	Taper
	Wire diameter (mm)	14.0	11.75
	Coil diameter (mm)	133.0	135.9
	Free height (mm)	305	394
	Installed height (mm)	234	181
	Effective number of turns	5.5	5.2
	Spring rate (kg/mm)	2.96	1.63~1.9~2.22
Shock absorber	Type	Cylindrical double-acting	←
	Damping force (kg) (0.3m/sec)	Elongation side	170
		Contraction side	110
Stabilizer	Outside diameter×Thickness (mm)	$\phi 29$	29.2×4.5

Parts required

No.	Part No.	Description	Qty	Remarks
1	B2Y2 34 151	Front Stabilizer	1	Group A
2	B2Y2 34 390	Front Mount Rubber	2	//
3	B2Y2 34 460	Lower Arm Bush	2	//
4	B2Y3 34 470	//	2	//
5	BK95 V8 051	Shock Absorber (R)	1	Group N & A
6	BK95 V8 052	// (L)	1	//
7	BK95 V8 070	Spring	2	//

SUSPENSION

REAR SUSPENSION



Major modifications and characteristics

1) Shock absorber

For durability and stable steering on rough roads, the outside diameter has been changed to $\phi 50.8$ in order to maintain sufficient damping and prevent decreasing performance from excess heat.

2) Spring

By taking a special care to match the shock absorber, and by setting at minimum ground clearance of 126 mm, the steering stability has improved.

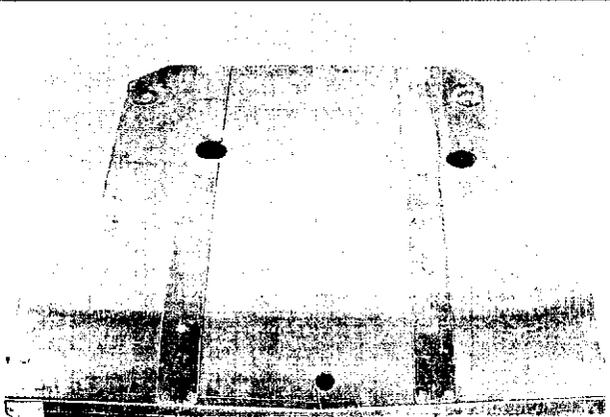
Main specifications

Item		Rally parts	STD
Type		Hard	←
Coil Spring	Type	Constant	Straight
	Wire diameter (mm)	13.3	10.9
	Coil diameter (mm)	128.0	127.9
	Free height (mm)	340	363
	Installed height (mm)	252.4	209
	Effective number of turns	6.875	4.24
	Spring rate (kg/mm)	2.17	1.59
Shock absorber	Type	Cylindrical double-acting	←
	Damping force (kg) (0.3m/sec)	Elongation side	140
		Contraction side	80
			55
			24

Parts required

No.	Part No.	Description	Qty	Remarks
1	B2Y2 28 200	Trail Link Assy	2	Group A
2	B2Y2 28 390	Mtg. Rubber	2	//
3	B2Y2 28 600	Lateral Link	2	//
4	B2Y2 28 620	Lateral Link (RH)	1	//
5	B2Y2 28 630	// (LH)	1	//
6	B2Y2 28 680	Diff. Mtg. Rubber (FT)	1	//
7	B2Y2 28 690	// (RR)	1	//
8	BK95 V8 061	Shock Absorber (R)	1	Group N & A
9	BK95 V8 062	// (L)	1	//
10	BK95 V8 080	Spring	2	//

Under Guard

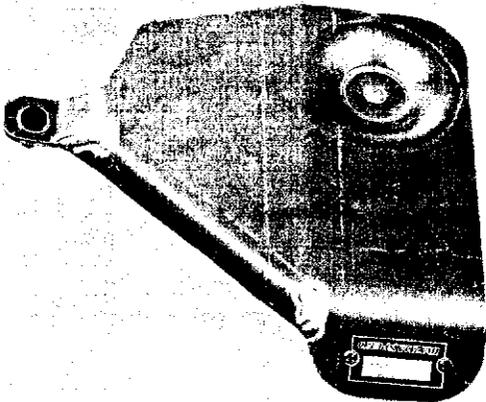


The duralumin under guard of 4mm thickness has been newly designed to protect oil sump, transmission and front suspension. Bolt-on type for easier installation.

Parts required

Part No.	Qty	Remarks
BK95 V8 250	1	Group N & A

Joint Guard

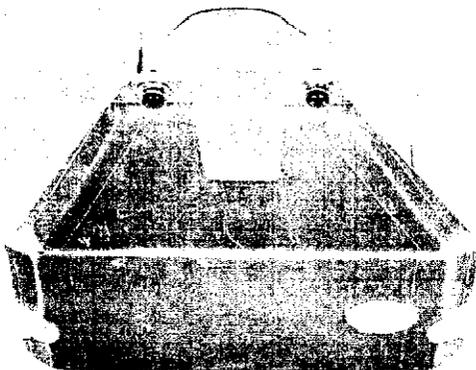


The duralumin joint guard of 4mm thickness has been newly designed to protect propeller shaft support portion (center bearing). Bolt-on type for easier installation.

Parts required

Part No.	Qty	Remarks
BK95 V8 260	1	Group N & A

Differential Gear Guard

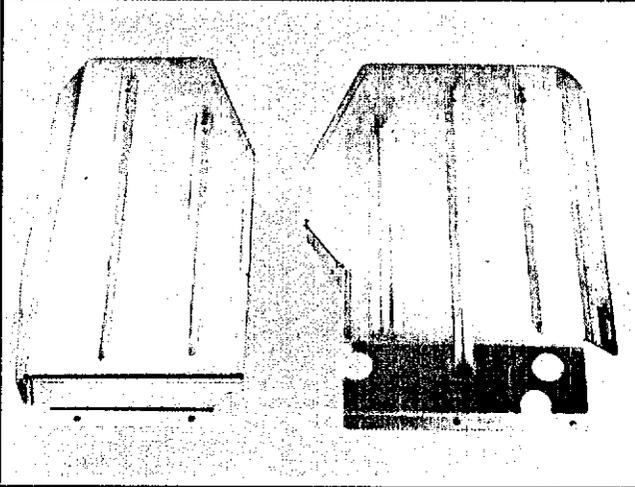


The duralumin differential gear guard of 4mm thickness has been designed to protect rear differential gear and rear stabilizer. Bolt-on type for easier installation.

Parts required

Part No.	Qty	Remarks
BK95 V8 270	1	Group N & A

Tank Guard

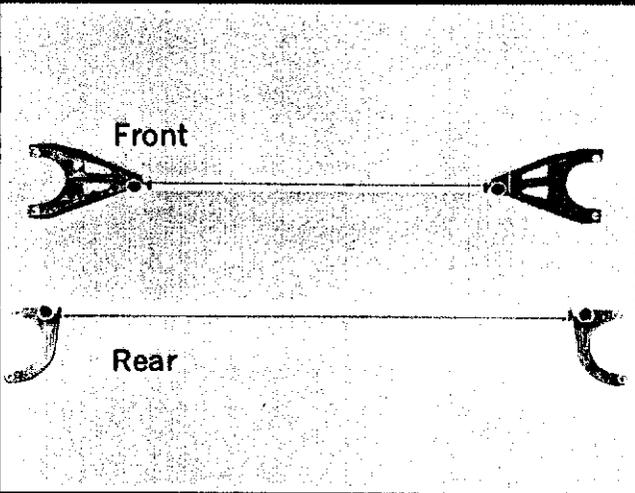


The duralumin tank guard of 3mm thickness has been newly designed to protect fuel tank. Bolt-on type for easier installation.

Parts required

Part No.	Qty	Remarks
BK95 V8 280	1	Group N & A

Strut Bars

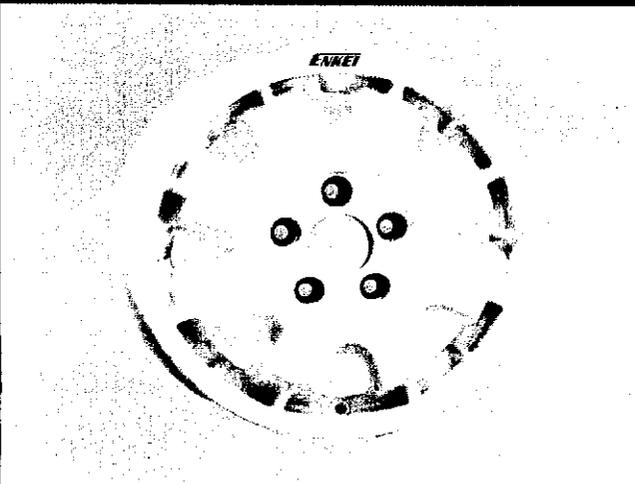


The front and rear strut bars with the aluminum diecast holder and $\phi 22$ aluminum rod has been applied to improve the body stiffness. For the joint portion, high accuracy rod-end has been applied.

Parts required

Part No.	Qty	Remarks
BK95 V8 911	1	(Front) Group N & A
BK95 V8 912	1	(Rear) Group N & A

Wheel



The aluminum wheel is one that has been designed unique for Group A Disk Brakes described on P.22 ~P.25.

Parts required

Part No.	Qty	Remarks
BK95 V3 810	4	6JJ×15, 5 holes 54mm offset, 114.3mm P.C.D.
0603 26 161	20	Hub Bolt (Penetration type)