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**Motorcycles and mopeds—
Vocabulary**

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Society of Automotive Engineers of Japan, Inc. (JSAE) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS D 0109**:1990 is replaced with this Standard.

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Motorcycles and mopeds—Vocabulary

Introduction

This Japanese Industrial Standard was initially established to form the first edition in 1990. The aim of this revision was to update its contents in order to adapt to the technology advancement and to maintain its uniformity with other relevant national and international standards.

1 Scope

This Standard specifies terms and definitions related to motorcycles and mopeds (hereafter referred to as “motorcycles”).

NOTE : The “motorcycles and mopeds” designate the two axle motorcycles with two wheels. They also include the mopeds and motorcycles with side car.

2 Normative references

The **JIS** standards and International Standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated shall be applied.

3 Division

The terms are divided into the following categories.

a) Classification

- 1) Classification according to shape
- 2) Classification according to use

b) Dimensions, mass, load and performance

- 1) Basic terms
- 2) Terms related to dimensions
- 3) Terms related to mass and load
- 4) Terms related to performance

c) Structure, systems and parts

- 1) Terms related to prime movers
- 2) Terms related to transmission system
- 3) Terms related to braking device
- 4) Terms related to vehicle drive system
- 5) Terms related to suspension system and steering system
- 6) Terms related to electric system

- 7) Terms related to frame
- 8) Terms related to seat equipment
- 9) Terms related to equipment

4 Terms and definitions

The terms and definitions shall be as follows. The terms containing parenthesized word(s) are, in principal, used without the word(s) in the parenthesis.

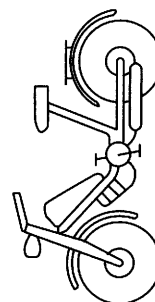
The English equivalents and customary terms are shown for information.

- NOTE 1 The terms with * in this Standard are also given in other related **JIS** standards, but defined in a different manner from this Standard.
- NOTE 2 In English equivalent column, the bold-faced terms are those defined in **ISO**, and the normal-faced terms are those commonly used both in American and British English.
- NOTE 3 The customary terms shall no longer be used.
- NOTE 4 The terms related to dimensions, mass and load, unless otherwise specified, assume the motorcycles to be standing still in a vertical and forth-right position on a horizontal plane. The terms related to dimensions, unless otherwise specified, assume the motorcycles to be in the kerb condition as defined in term No. **2108**.

a) **Classification**

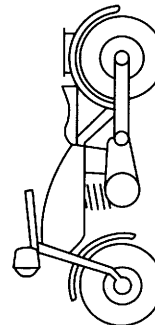
1) **Division by shape**

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
1101	モペット	MOPETTO	motorcycle with 2 or 3 wheels in which the highest speed is designed to be 50 km/h or under In the case where the prime mover is an internal combustion engine, it is limited to those with total stroke volume or corresponding volume 50 cm ³ or under (see figure 1) (ISO 3833).	moped	
1102	モータサイクル	MÔTASAIKURU	motorcycles with 2 or 3 wheels excluding moped However, motorcycles with 3 wheels are limited to those with vehicle kerb mass 400 kg or under (see figure 2) (ISO 3833).	motorcycle	
1103	スクーター	SUKÛTA	motorcycles with broad space at the low front part of the seat, having a floor board for feet to rest on, and equipped with wheels which are comparatively small (see figure 3)	motor scooter	
1104	側車付二輪(自動)車	SOKUSYATUKI NIRIN (ZIDÔ) SYA	motorcycles with one-wheeled sidecar fixed at the side, thus running with 3 wheels, used for the transportation of a load or a person	motorcycle with sidecar	



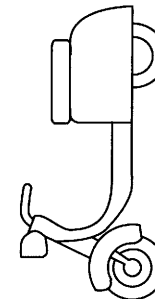
1101

Figure 1 Moped



1102

Figure 2 Motorcycle

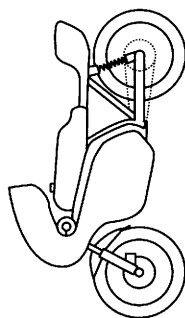


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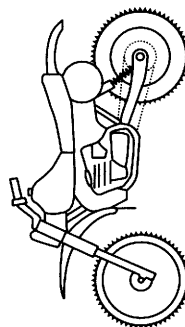
Figure 3 Motor scooter

2) Division by use

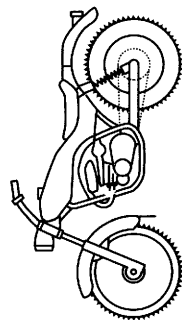
No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
1201	オンロード車	ONRÔDO SYA	motorcycle for the purpose of running on general public roads	street motorcycle	
1202	オンオフロード車	ON OHU RÔDO SYA	motorcycle with main purpose to run on public roads but made so as to be able to run on uneven ground	dual-purpose motorcycle	
1203	オフロード車	OHURÔDO SYA	motorcycle for the purpose to run on uneven ground	off road motorcycle	
1204	ロードレーサ	RÔDO RÊSA	motorcycle for the purpose to compete on speed on paved roads that are closed so that cars other than racers may not enter (see figure 4)	road racer	
1205	モトクロッサ	MOTOKUROSSA	motorcycle for the purpose to compete on speed on uneven ground that are closed so that cars other than racers may not enter (see figure 5)	motocrosser	
1206	トライヤル車	TORAIYARU SYA	motorcycle for the purpose to compete on the operating technique in high difficulty on steep paths that are closed so that cars other than racers may not enter (see figure 6)	trial motorcycle	
1207	エンデュロ	ENDYÛRO	motorcycle for the purpose to compete on speed and durability mainly in running long distances on uneven ground In the case where it passes the public road, it shall be equipped with minimum safety parts.	enduro	



1204
Figure 4 Road racer



1205
Figure 5 Motocrosser



1206
Figure 6 Trial motorcycle

b) Dimensions, mass, load and performance

1) Basic terms

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2101	車輪中心面	SYARIN TYŪSIN MEN	plane passing through the centre of both edge parts in inside of the rim (ISO 6725)	mid-plane of the wheel	
2102	車輪中心	SYARIN TYŪSIN	intersecting point of wheel rotating axis and mid-plane of the wheel (JIS D 0102)	centre of the wheel, wheel centre	
2103*	縦中心面	TATE TYŪSIN MEN	the mid-plane of the wheel of vertical rear wheel (ISO 6725)	longitudinal median plane	
2104	接地面	SETTI MEN	horizontal surface supporting the motorcycle on it (ISO 6725)	supporting surface	
2105	横鉛直面	YOKO ENTYOKU MEN	vertical plane perpendicular to longitudinal median plane (ISO 6725)	transverse vertical plane	SYARYŌ TYOKKAKU MEN
2106	縦中心線	TATE TYŪSIN SEN	intersection of longitudinal median plane and supporting surface	longitudinal median line	SYARYŌ TYŪSIN SEN

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2107*	乾燥状態	KANSÔ ZYÔTAI	state of motorcycle in which it is equipped with minimum apparatus and installations necessary for ordinary driving It is equipped with the lighting system mounted by the manufacturer as well as the electric system including signaling device and meters and equipment specified in laws and ordinances. The total volume of operating fluid (lubricant, liquid coolant, brake fluid, battery fluid, etc.) is included but the fuel and mixed fuel are not included. NOTE 1 The air pressure of tyres shall be the value specified for the motorcycle. NOTE 2 The lubricant for separate oiling system of two-stroke engine shall be the operating fluid.	dry condition	
2108*	空車状態	KÛSYA ZYÔTAI	state in which the fuel (at least 90 % of the specified fuel volume) and equipment to be mounted generally by the manufacturer (tools, carrier, wind screen, engine guard, etc.) are added to the motor-cycles in dry condition	kerb condition, curb condition	
2109*	最大積載状態	SAIDAI SEKISAI ZYÔTAI	state in which the motorcycle in kerb condition is loaded with the number of passengers corresponding to the riding capacity and with loads of permitted mass, that are uniformly distributed in the car Motorcycles are generally not designed for carrying luggage. Therefore the “fully laden” refers to the state where the motorcycle in kerb condition is loaded with the number of passengers of the specified capacity.	fully laden	

2) Terms relating to dimensions

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2201*	全長	ZENTYÔ	distance between two transverse vertical planes that are perpendicular to the longitudinal median plane and are in contact with the front and rear of motorcycle (l_1) (see figure 7) (ISO 6725)	length , overall length	
2202*	全幅	ZENPUKU	distance between two lateral planes that are parallel to the longitudinal median plane and are in contact with the both sides of motorcycle (w) However, the rear-view mirror is excluded (see figure 7) (ISO 6725).	width , overall width	
2203*	全高	ZENKÔ	distance from the supporting surface up to the highest part of the motorcycle (h_1) However, the rear-view mirror is excluded (see figure 7) (ISO 6725). NOTE: It can designate the dimension in the maximum loaded state.	height , overall height	
2204*	軸距	ZIKUKYO	distance between transverse vertical planes passing through wheel centres of frontal and rear wheels (l_2) (see figure 7) (ISO 6725)	wheel base , wheel space	
2205*	前オーバーハング	MAE ÔBAHANGU	distance from transverse vertical plane passing through the centre of frontal wheel up to the most frontal part of motorcycle (l_3) (see figure 7) (ISO 6725) NOTE: All those fixed to motorcycle are included.	front overhang	
2206*	後オーバーハング	USIRO ÔBAHANGU	distance from transverse vertical plane passing through the centre of rear wheel up to the rearmost part of the motorcycle (l_4) (see figure 7) (ISO 6725) NOTE: All those fixed to motorcycle such as number plate or its mounting part, etc. shall be included.	rear overhang	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2207*	最低地上高	SAITEI TIZYÔ DAKA	distance between the lowest part of the motorcycle between front and rear wheels and the supporting surface (h_2) However, the front and rear wheels are excluded (see figure 7) (ISO 6725). NOTE 1 The lowest part of mudguard fender is excluded. NOTE 2 In the case of motorcycle with pedals, with one pedal in the lowest position, it shall be the distance between the undermost plane of pedal and the supporting surface.	ground clearance	
2208*	重心高さ	ZYŪSIN TAKASA	height from the supporting surface up to the centre of gravity of motorcycle NOTE: It can designate the dimension with rider(s) and luggage loaded.	height of the gravitational centre, height of the centre of gravity	ZYŪSIN KÔ
2209*	バッドアクリヤランス	BAHHUA KURIYARANSU	additional clearance in vertical direction possible to stroke suspension part of wheel in maximum loaded state (h_3) (see figure 7)	residual vertical wheel clearance	
2210	シート高	SÎTO DAKA	height from the supporting surface up to the upper surface of seat (h_4) (see figure 7) NOTE: In the case where the upper surface of the seat is not horizontal, it shall be the height of the centre of the part where the driver is in contact with the seat in ordinary riding posture.	seat height	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2211*	ランブ角	RANPU KAKU	in the profile of motorcycle projected to the longitudinal median plane, the minimum value of the supplementary angle made by the 2 straight lines that are in contact with the external periphery of the front and rear wheels of which intersection is on the underside profile of the motorcycle (α) (see figure 8) (ISO 6725) NOTE: In the case of motorcycle with pedals, the position of pedals is ignored.	ramp angle	
2212*	アプローチ角	APURÔTI KAKU	maximum angle between the plane in contact with the outer periphery of the front wheel tyre which is perpendicular to the longitudinal median plane and the supporting surface when this plane is positioned so that any part of the motorcycle may not be under it (β_1) (see figure 9) (ISO 6725)	approach angle	
2213*	デパーチャ角	DEPÂTYA KAKU	maximum angle between the plane in contact with the outer periphery of the rear wheel tyre which is perpendicular to the longitudinal median plane and the supporting surface when this plane is positioned so that any part of the motorcycle may not be under it (β_2) (see figure 9) (ISO 6725)	departure angle	
2214*	キヤスタ	KYASUTA	the distance between the vertical line passing through the centre of steering wheel and the central line of steering stem on the supporting surface, which have been projected to the longitudinal median plane (l) (see figure 10) (ISO 6725) NOTE 1 In the case where the underway elongation of central line of steering stem is in front of the vertical line passing through the centre of the wheel, the castor shall be designated as plus (+) and the in case where it is in rear, as minus (-).	castor	TORÊRU

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
			NOTE 2 ISO 6725 (6.11) designates minus (–) castor as “trail”.		
2215	キャスト角	KYASUTA KAKU	inclination angle of central line of steering stem projected to longitudinal median plane against vertical line (<i>b</i>) (see figure 10) (ISO 6725) NOTE: In the case where the upper part of the central line of steering stem is in rear of the lower part, the castor angle shall be designated as plus (+) and in the case where it is in front, as minus (–).	castor angle	
2216	バンク角	BANKU KAKU	maximum angle between the plane in contact with the tread of tyre and the supporting surface In the case where the angles of front and rear wheels are different, use the smaller value. In the case where one part of motorcycle protrudes in the angle defined as above, use the angle of the plane which is in contact with the outer surface of this part and the tyre. However, for the moped with pedals, the positions of pedals are ignored (see figure 7) (ISO 6725). NOTE 1 There are banking angles in left side (α_1) and in right side (α_2) for motorcycle. NOTE 2 In ISO 6725 , the supporting point is obtained by the maximum angle dependent on the tyre.	banking angle	
2217*	(最大)かじ取り角	(SAIDAI) KAZITORI KAKU	maximum rotating angle of intersecting line of the wheel central plane of the steering wheel and the supporting surface to turn to move in the case where the handlebar is rotated from the forward position to the right or left position	steering angle	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2218	ハンドル回転角	HANDORU KAITEN KAKU	maximum rotating angle of handlebar from the forward position on the plane perpendicular to the central line of the steering stem	steering angle	
2219*	最小旋回半径	SAISYÔ SENKAI HANKEI	radius of locus traced by the centre of the supporting surface of the tyre of steering wheel when the motorcycle is held perpendicular to the supporting surface and goes slowly in steering angle (see figure 11) (ISO 6725) NOTE 1 There are minimum turning radii in right side and in left side. NOTE 2 That caused by tyre of wheel to be in outside (r_1) is designated as outside wheel minimum turning radius and that caused by tyre of wheel to be in inside (r_2) as inside wheel minimum turning radius. NOTE 3 In ISO 6725 , it refers to the radius of the inscribed circle of the intersecting line of the mid-plane of the wheel and the road surface.	minimum turning radius	SAISYÔ KAITEN HANKEI
2220*	車体最小旋回半径	SYATAI SAISYÔ SENKAI HANKEI	radius of locus traced by the part of the car body when the motorcycle is held perpendicular to the supporting surface and goes slowly in steering angle (see figure 11) (ISO 6725) NOTE 1 There are minimum turning clearance radii in right side and in left side. NOTE 2 That caused by the part to be in most outside (r_3) is designated as outside minimum turning clearance radius and that caused by part to be in the most inside (r_4) as inside minimum turning clearance radius.	minimum turning clearance radius	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2221	総工程容積	SÔ KÔTEI YÔSEKI	total sum of piston displacement of every cylinder of engine Product of piston displacement and number of cylinders (JIS B 0108-2). $V_{sl} = NV_s$ where, N : number of cylinders V_s : piston displacement	engine swept volume	SÔ HAIKI RYÔ
2222	燃料容量	NENRYÔ YÔRYÔ	maximum volume of the fuel able to be contained in fuel tank However, that combined with auxiliary tanks includes the volume of the auxiliary tank (JIS D 0102).	fuel capacity	
2223*	潤滑油容量	ZYUNKATUYU YÔRYÔ	reference volume of the lubricating oil able to be contained in the lubricating system of engine, speed change gear, reduction gear room, etc. However, that combined with auxiliary tank includes the volume of the auxiliary tank.	lubricating oil capacity	
2224*	冷却水容量	REIKYAKUSUI YÔRYÔ	maximum volume of the cooling water able to be contained in engine and radiator system	cooling water capacity	

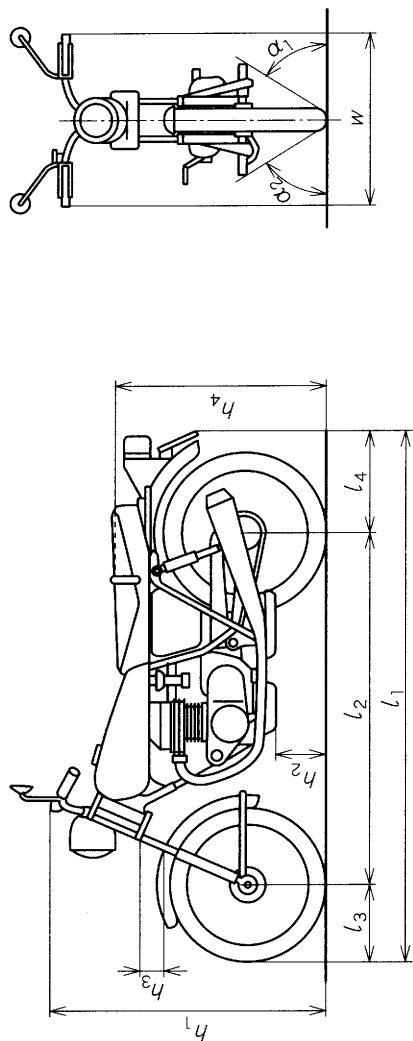


Figure 7 Terms related to dimensions

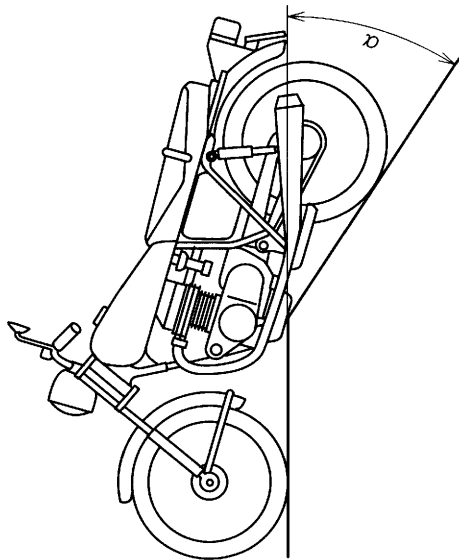


Figure 8 Ramp angle

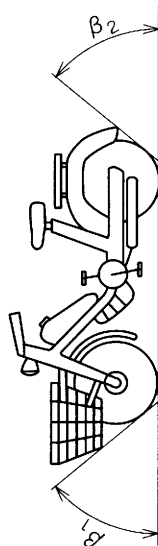
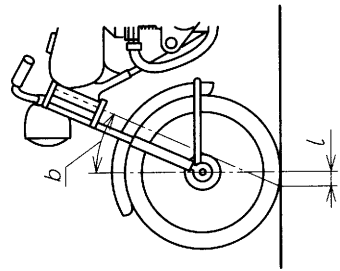
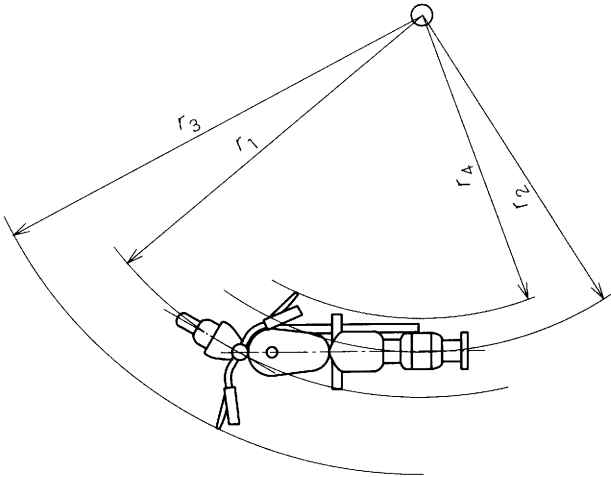


Figure 9 Approach angle, departure angle



2214 2215
Figure 10 Castor, castor angle



2219 2220
**Figure 11 Minimum turning radius,
minimum turning clearance radius**

3) **Terms relating to mass and load**

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2301	乾燥質量	KANSÔ SITURYÔ	mass of motorcycle in dry condition (ISO 6726)	vehicle dry mass	KANSÔ ZYÛRYÔ
2302	乾燥荷重	KANSÔ KAZYÛ	product of vehicle dry mass and standard gravitational acceleration (9.806 65 m/s ²)	vehicle dry weight	KANSÔ ZYÛRYÔ
2303*	空車質量	KÛSYA SITURYÔ	mass of motorcycle in kerb condition (ISO 6726)	vehicle kerb mass, vehicle curb mass	KÛSYA ZYURYÔ

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2304*	空車荷重	KŪSYA KAZYŪ	product of vehicle kerb mass and standard gravitational acceleration	vehicle kerb weight, vehicle curb weight	
2305	全装備質量	ZENSŌBI SITURYŌ	mass of motorcycle in kerb condition, on which all equipment for addition and selection prepared by manufacturer is mounted (ISO 6726)	vehicle mass fully equipped	
2306	全装備荷重	ZENSŌBI KAZYŪ	product of vehicle mass fully equipped and standard gravitational acceleration	vehicle weight fully equipped	
2307*	自動車総質量	ZIDŌSYA SŌ SITURYŌ	mass of motorcycle in maximum loaded state (ISO 6726)	maximum authorized total mass	ZIDŌSYA SŌ ZYŪRYŌ
2308*	自動車総荷重	ZIDŌSYA SŌ KAZYŪ	product of maximum authorized total mass and standard gravitational acceleration	maximum authorized total weight	ZIDŌSYA SŌ ZYŪRYŌ
2309*	最大積載質量	SAIDAI SEKISAI SITURYŌ	maximum mass of fixed number of riders and luggages permitted to be loaded in motorcycle NOTE: This is the value of maximum authorized total mass reduced by the vehicle kerb mass.	maximum authorized freight mass	SAIDAI SEKISAI RYŌ
2310*	最大積載荷重	SAIDAI SEKISAI KAZYŪ	product of maximum authorized freight mass and standard gravitational acceleration (ISO 6726) NOTE: This is the value of maximum authorized total weight reduced by the vehicle kerb weight.	maximum authorized payload	SAIDAI SEKISAI RYŌ
2311	軸荷重	ZIKU KAZYŪ	weight per axle exerted on supporting surface via the wheels (JIS D 0102)	axle weight	
2312	前軸荷重	ZENZIKU KAZYŪ	axle weight of front axle (JIS D 0102)	front axle weight	
2313	後軸荷重	KŌZIKU KAZYŪ	axle weight of rear axle (JIS D 0102)	rear axle weight	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2314*	荷重配分比	KAZYŪ HAIBUN HI	percentage of weight of motorcycle allotted to each axle NOTE: It designates at times the ratio at maximum loaded state. Example: (front wheel) : (rear wheel) 47 % : 53 % (kerb condition)	weight ratio	ZYŪRYŌ HAIBUN HI
2315*	ばね上質量	BANE UE SITURYŌ	mass of motorcycle supported by suspension spring NOTE: The masses of those such as transmission system, suspension system, braking device, steering system, some amount of which makes up the sprung mass, are added as the equivalent mass according to structure.	sprung mass	
2316*	ばね下質量	BANE SITA SITURYŌ	mass of parts mounted on front and rear axles NOTE: This corresponds to the difference between the mass of motorcycle and the sprung mass.	unsprung mass	

4) Terms relating to performance

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2401	最大出力	SAIDAI SYUTURYOKU	maximum shaft power able to be generated by engine within the range of used speed of rotation (JIS B 0108-1) NOTE: Its unit is kW.	peak power, maximum power	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2402	ネット軸出力	NETTO ZIKU SYUTURYOKU	output power obtained at the end of crank shaft when the engine equipped with auxiliary device is operated on the test bench When the shaft power cannot be measured without gear box being attached, power loss due to speed change gear mechanism is added to the measured power (JIS D 1000).	net power	
2403	最大トルク	SAIDAI TORUKU	maximum shaft torque able to be generated by engine within the range of used speed of rotation NOTE: Its unit is N・m.	maximum torque	
2404	ネット軸トルク	NETTO ZIKU TORUKU	torque obtained under the same condition as that of net power (JIS D 1000)	net torque	
2405	自動車(走行)性能線 図	ZIDÔSYA (SÔKÔ) SEINÔ SENZU	diagram in which the driving force curve for running speed of motorcycle, running resistance curve and engine rotating speed at every speed change step are put together in one diagram (JIS D 0102)	motorcycle performance diagram	
2406*	車速線図	SYASOKU SENZU	diagram representing the relation of running speed of motorcycle and engine rotating speed at every speed change step (JIS D 0102)	speed diagram	
2407	駆動力曲線	KUDÔRYOKU KYOKUSEN	curve representing the relation between running speed of motorcycle and maximum driving force at every speed change step (JIS D 0102)	driving force curve	
2408*	走行抵抗曲線	SÔKÔ TEIKÔ KYOKUSEN	curve representing the relation of running speed of motorcycle and running resistance in every inclination (JIS D 0102)	running resistance curve	

No.	Term (Japanese character)	Reading	Definition	Informative	
				English equivalent	Customary terms
2409	走行抵抗	SÔKÔ TEIKÔ	resistance affected on motorcycle during running (JIS D 0102) NOTE: The running resistance consists of rolling resistance, air resistance and hill climbing resistance.	running resistance	
2410*	転がり抵抗	KOROGARI TEIKÔ	sum of the resistances affected on motorcycle during rolling on horizontal road (JIS D 0102) NOTE: The rolling resistance consists of the following kinds of resistances. a) Resistance to deform tyre when the tyres roll on road surface. b) Friction resistance of every part of motorcycle. c) Resistance to deform road surface.	rolling resistance	
2411	空気抵抗	KÛKI TEIKÔ	resistance by air of the motorcycle is subjected to during running (JIS D 0102) NOTE: Determine in general the air resistance (R_a) by the following formula. $R_a = kAV^2$ where, k : coefficient of air resistance A: frontal projected area of motorcycle V: relative speed to air of motorcycle	air resistance	