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Gear cutters — 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 The Japan Small Cutting Tools' Association (JSCTA)/ Japanese Standards Association (JSA) 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 B 0174** : 1991 is replaced with this Standard.

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Gear cutters — Vocabulary

1 Scope

This Japanese Industrial Standard specifies the designations of gear cutters ¹⁾ generally used mainly for metal cutting and the related terms and definitions thereof.

Note ¹⁾ The tools for cutting the tooth spaces of gears or similar parts (e.g. spline shaft, sprocket, etc.).

2 Normative references

The following standard contains provisions which, through reference in this text, constitute provisions of this Standard. The most recent edition of the standard (including amendments) indicated below shall be applied.

JIS B 0102 *Vocabulary of gear terms — Definitions related to geometry*

3 Classification

The classification of terms shall be in accordance with the following :

- a) **Names of gear cutters**
- b) **Types of gear cutters**
 - 1) Classification according to cutting tooth materials and surface treatments
 - 2) Classification according to structures
 - 3) Classification according to attaching methods
 - 4) Classification according to functions or uses
- c) **Elements of gear cutters**
- d) **Angles of gear cutters**
- e) **Accuracies of gear cutters**
 - 1) Gear hobs
 - 2) Pinion type cutters
 - 3) Rotary gear shaving cutters
 - 4) Others
- f) **Damages on cutting tooth of gear cutter**
- g) **Gear cutters in general**

4 Designation of gear cutter

The gear cutter shall generally be designated by combining the appropriate terms in the order given in **b)** of clause **3**.

Furthermore, the gear cutters which use high speed tool steel as the cutting tooth material, the gear cutters of solid and arbor type shall be designated by omitting these matters (the words in parentheses of the following example).

Example :

Designation	Cutting tooth material and surface treatment	Construction	Attaching method	Function or use
Pinion type cutter – disc type for helical gear	(High speed tool steel)	(Solid)	(Arbor type)	Pinion type cutter – disc type for helical gear
Coated segmented multi-threads gear hob for semi-topping gear	Coated (high speed tool steel)	Inserted teeth	(Arbor type)	Multi-threads gear hob for semi-topping gear
Coated cemented carbide gear hob	Coated cemented carbide (alloy)	(Solid)	(Arbor type)	Gear hob
Rotary gear shaving cutter	(High speed tool steel)	(Solid)	(Arbor type)	Rotary gear shaving cutter

5 Terms and definitions

The terms and definitions of gear cutters shall be in accordance with **JIS B 0102** and the following **5.1** to **5.7**.

The general matters are as follows:

- the word(s) in a term given in parentheses may be omitted, unless the omission is deemed likely to cause confusion;
- the boldfaced terms in the "definition" column are those specified in this Standard;
- if two terms are given in the "term" column, the one described first shall be given preference;
- the illustration is only to show an example and is not to specify the shape and size;
- the numerals in parentheses in the illustration indicate the term No. in this Standard.

The quantity symbols, units and English equivalents are given for informative purposes.

5.1 Names of gear cutters

No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
1001	ピニオンカッタ	PINION KATTA	the gear cutter having cutting edges on the gear shaped tooth flanks NOTE : It is mounted on a gear-shaping machine and performs gear cutting by the rotary motion and reciprocating motion while it is kept in a definite relation with the workpiece.	gear shaper cutter, pinion type cutter
1002	ホブ	HOB	the gear cutter having cutting edges provided with flanks between the neighbouring flutes along the threaded flutes, being provided with a number of flutes crossing the threaded flutes of a worm NOTE : It is mounted on a gear-hobbing machine and performs gear cutting by the rotary motion and reciprocating motion while it is kept in a definite relation with the workpiece.	gear hob
1003	ラックカッタ	RAKKU KATTA	the gear cutter having the cutting edges of rack type NOTE : It is mounted on a gear planing machine or a gear shaping machine and performs gear cutting by the rotary motion and reciprocating motion while it is kept in a definite relation with the workpiece.	rack type cutter, gear planer cutter
1004	シェービングカッタ	SYÊBINGU KATTA	the tool having a number of cutting edge flutes on the tooth flanks of an involute cylindrical gear or rack NOTE : It is mounted on a gear shaving machine and allowed to bite the workpiece in the crossed axles angle and finishes the tooth flanks of the work-piece while either the tool or the workpiece is compulsively driven.	shaving cutter
1005	かさ歯車用カッタ	KASA HAGURUMA YÔ KATTA	the tool which gear-cuts the bevel gear being mounted on a bevel gear cutting machine NOTE : Other than that to be exclusively used for gear cutting machine, there are also those to be used for milling machine.	bevel gear cutter
1006	歯切り用フライス	HAGIRI YÔ HURAIKU	the milling cutter to be used for gear cutting	milling cutter for gear cutting
1007	歯切り用ブローチ	HAGIRI YÔ BURÔTI	the broach to be used for gear cutting	broach for gear cutting

No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
1008	歯切り用バイト	HAGIRI YÔ BAITO	the bite to be used for gear cutting	single point tools for gear cutting
1009	歯車転造用丸ダイス	HAGURUMA TENZÔ YÔ MARU DAISU	the gear shaped rolling tool to be used for the finish of tooth flank of gear and the build-up of spline from solid	gear rolling dies
1010	歯車転造用平ダイス	HAGURUMA TENZÔ YÔ HIRA DAISU	the rack shaped rolling tool to be used for the finish of tooth flank of gear and the build-up of spline from solid	spline rack, forming rack

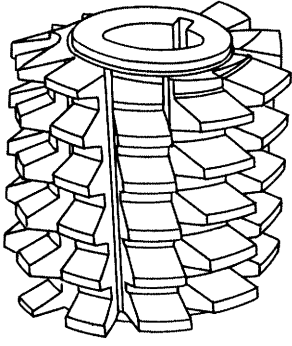
5.2 Types of gear cutters

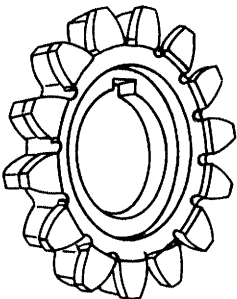
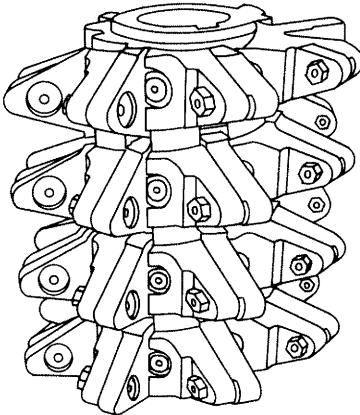
5.2.1 Classification according to cutting part materials and surface treatments

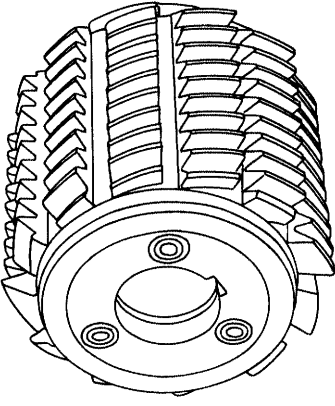
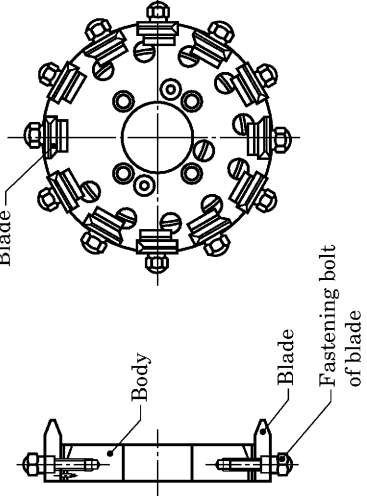
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2101	高速度 (工具) 鋼歯切工具	KÔSOKUDO (KÔGU) KÔ HAGIRI KÔGU	the gear cutter using high speed tool steel as the cutting tooth material	high speed (tool) steel gear cutter
2102	超硬質工具材料歯切工具	TYÔKÔSITU KÔGU ZAIRYÔ HAGIRI KÔGU	the gear cutter using cemented carbide alloy (cemented carbide alloy, cermet, coated alloy or the like) or non-alloy superhard material [ceramic, sintered body of boron nitride (BN), sintered body of diamond, or the like] as the cutting tooth material NOTE : There are cemented carbide gear cutter, cermet gear cutter , coated carbide gear cutter, ceramic gear cutter, cBN (cubic boron nitride) gear cutter, diamond gear cutter, etc.	hard tool material gear cutter
2103	超硬 (合金) 歯切工具	TYÔKÔ (GÔKIN) HAGIRI KÔGU	the gear cutter using cemented carbide alloy (sintered material mainly composed of tungsten carbide) as the cutting tooth material	carbide gear cutter, cemented carbide gear cutter, hard metal gear cutter
2104	サーメット歯切工具	SÂMETTO HAGIRI KÔGU	the gear cutter using cermet (sintered material mainly composed of titanium compound) as the cutting tooth material	cermet gear cutter

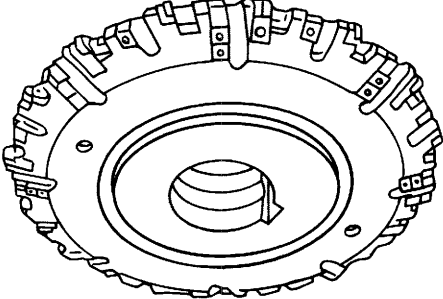
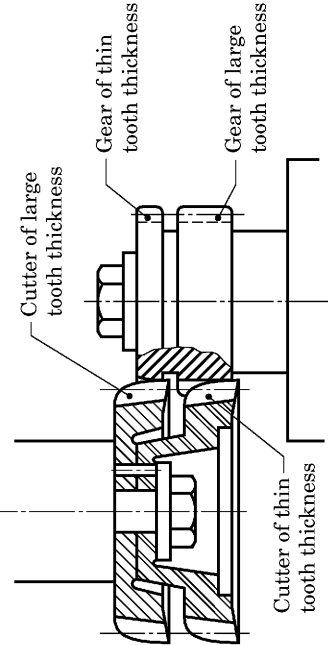
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2105	コーティング歯切工具	KÔTINGU HAGIRI KÔGU	the gear cutter whose cutting tooth uses the tool material to the surface of which the carbide, nitride, or oxide is adhered or bonded tightly, chemically or physically in single layer or multi-layers NOTE : According to the distinction of the coated tool materials, there are types of the coated high speed tool steel gear cutters , coated carbide gear cutters , etc.	coated gear cutter
2106	電着歯切工具	DENTYAKU HAGIRI KÔGU	the gear grinding tool using, for its cutting tooth , a material of which the surface is electro-plated in single layer or multiple layers by diamond and cBN abrasive grain NOTE : There are the kinds such as diamond electro-plated tool for gear grinding , cBN electro-plated tool for gear grinding .	electro-plated tool for gear grinding

5.2.2 Classification according to structures

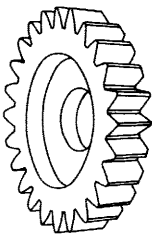
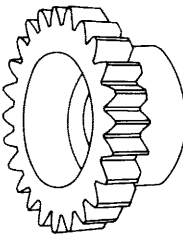
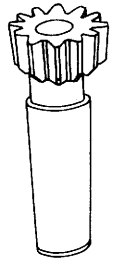
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2201	むく歯切工具, ソリッド歯切工具	MUKU HAGIRI KÔGU, SORIDDO HAGIRI KÔGU	the gear cutter of which the whole body is made of the same material to be integral 	solid gear cutter

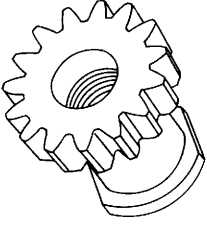
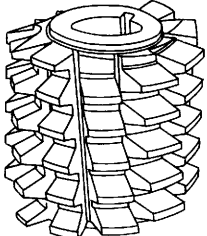
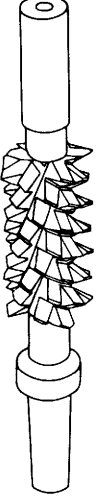
No.	Term (Japanese characters)	Reading	Definition	(Information)
				English equivalent
2202	ろう付け歯切工具	RÔZUKE HAGIRI KÔGU	the gear cutter to the body of which the cutting tooth material is blazed 	blazed gear cutter
2203	植刃歯切工具	UEBA HAGIRI KÔGU	the gear cutter to the body of which the blades or segments of high speed tool steel, cemented carbide alloy, and the like are installed mechanically 	inserted gear cutter, segmented gear cutter

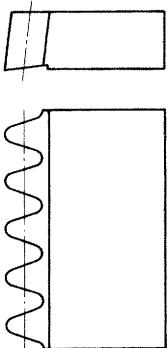
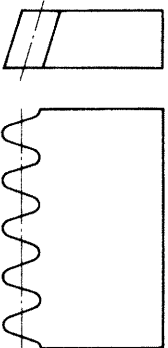
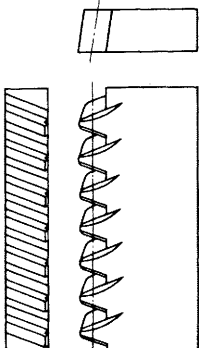
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2204	組立ホブ (Japanese characters)	KUMITATE HOB	the gear hob assembled by inserting multi-teeth blades or segments into the body 	inserted blade hob, segmented hob, segment hob
2205	クランプ歯切工具	KURANPU HAGIRI KOGU	the gear cutter to the body of which tips or blades are fastened mechanically 	clamped gear cutter

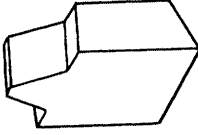
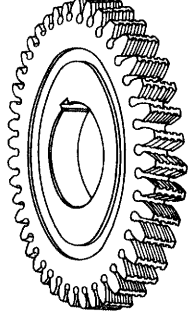
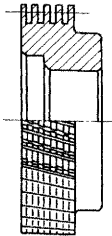
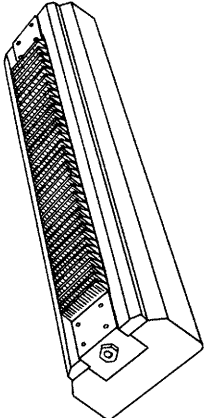
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2206	スロ－アウエイ歯切工具	SURŌAUEI HAGIRI KŌGU	the clamped gear cutter to the body of which the throw-away tips are clamped mechanically 	throw-away gear cutter
2207	組合せ歯切工具	KUMIAWASE HAGIRI KŌGU	the gear cutter consisting of combined bodies 	combination gear cutter

5.2.3 Classification according to attaching methods

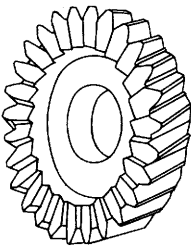
No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2301	ディスク形ピンオンカッタ	DISUKU GATA PINION KATTA	the disc-shaped pinion type cutter of which the depth of counter bore is not more than the width of cutting tooth , having attaching hole at the center (see JIS B 4356) 	gear shaper cutter – disk type, pinion type cutter – disk type
2302	ベル形ピンオンカッタ	BERU GATA PINION KATTA	the pinion type cutter of which the reference plane is of a boss shape, and of which the depth of counter bore exceeds the width of cutting tooth (see JIS B 4356) 	gear shaper cutter – counter bore types, pinion type cutter – counter bore type
2303	シャノンク形ピンオンカッタ	SYANKU GATA PINION KATTA	the pinion type cutter having a taper shank or straight shank at the attaching part (see JIS B 4356) 	gear shaper cutter – shank type, pinion type cutter – shank type

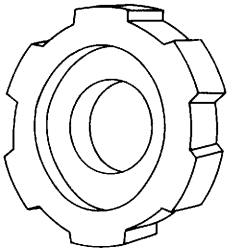
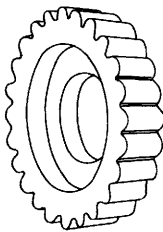
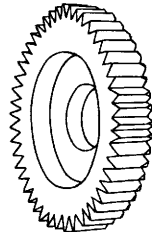
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2304	ハブ形ジニオンカッタ	HABU GATA PINION KATTA	the pinion type cutter whose attaching part consists of a hole and the internal thread concentric with the hole 	gear shaper cutter – hub type, pinion type cutter – hub type	
2305	穴付きホブ	ANA TUKI HOBU	the gear hob having an attaching hole to the arbor NOTE : There are straight hole gear hob and tapered hole gear hob. The straight hole gear hob is also simply called gear hob . 	arbor type gear hob, shell type gear hob	
2306	シャンク形ホブ	SYANKU GATA HOBU	the gear hob having tapered shank or straight shank at the attaching part 	shank type gear hob	

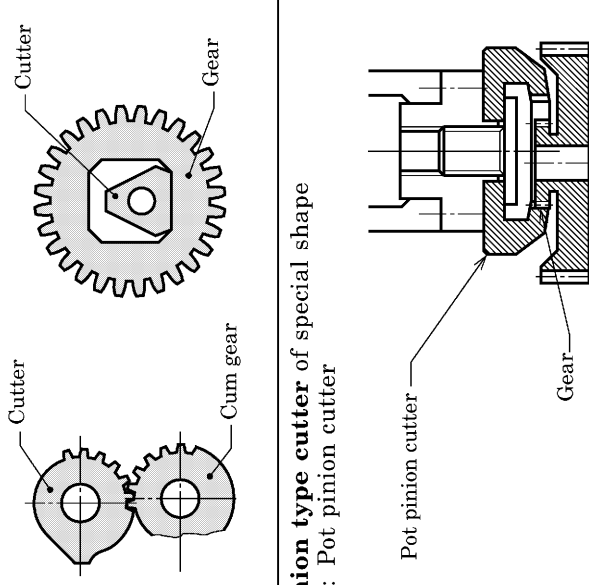
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2307	1形ラックカッタ	ITI GATA RAKKU KATTA	the rack type cutter of which the face inclines by the rake angle in respect to the clamp face 	rack type cutter – type 1	
2308	2形ラックカッタ	NI GATA RAKKU KATTA	the rack type cutter of which the face is in parallel to the clamp face 	rack type cutter – type 2	
2309	3形ラックカッタ	SAN GATA RAKKU KATTA	the rack type cutter of helical rack type for double helical gear Generally, the cutters of the right hand helix and the left hand helix form one pair. 	rack type cutter – type 3	

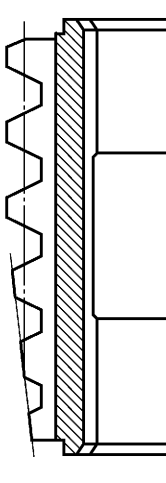
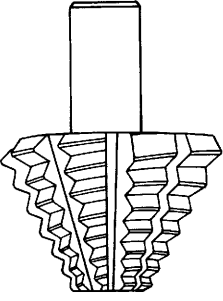
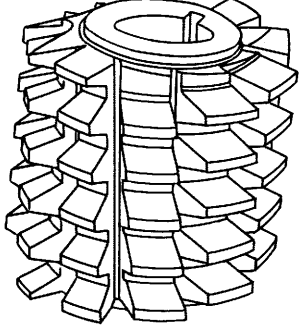
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2310	1 枚歯ラックカッタ (Japanese characters)	ITIMAIBA RAKKU KATTA	the rack type cutter whose number of teeth is one 	single toothed rack type cutter	
2311	丸形シェービングカッタ	MARU GATA SYÊBINGU KATTA	the shaving cutter having cylindrical pitch face of cutter (see JIS B 4357) 	rotary gear shaving cutter	
2312	ハブ形シェービングカッタ	HABU GATA SYÊBINGU KATTA	the rotary gear shaving cutter having the hub NOTE : It is mainly used for the shaving work of internal gear. 	rotary gear shaving cutter with hub	
2313	ラック形シェービングカッタ	RAKKU GATA SYÊBINGU KATTA	the shaving cutter of which the pitch face is of a flat plane 	rack type gear shaving cutter	

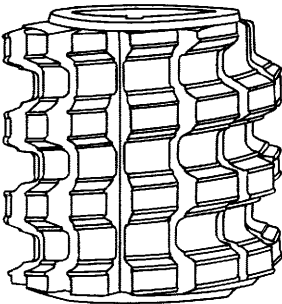
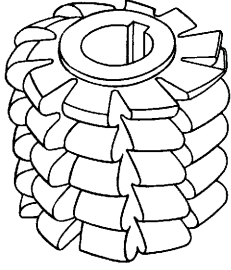
5.2.4 Classification according to functions or uses

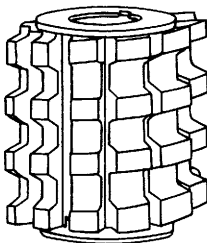
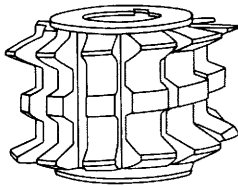
No.	Term (Japanese characters)	Reading	Definition	(Information)
				English equivalent
2401	はすば歯車用ピニオンカッタ	HASUBA HAGURUMA YÔ PINION KATTA	the pinion type cutter for gear cutting of helical gear 	pinion type cutter for helical gear
2402	(外歯車用) ピニオンカッタ	(SOTO HAGURUMA YÔ) PINION KATTA	the pinion type cutter for gear cutting of external gear	pinion type cutter (for external gear)
2403	内歯車用ピニオンカッタ	UTI HAGURUMA YÔ PINION KATTA	the pinion type cutter for gear cutting of internal gear	pinion type cutter for internal gear
2404	ブリグライインデイングピニオン カッタ	PURIGURAINDENGU PINION KATTA	the pinion type cutter for pre-working of grinding gear	pre-grinding pinion type cutter
2405	プリシェービングピニオン カッタ	PURISYÊBINGU PINION KATTA	the pinion type cutter for pre-working of gear to be processed with shaving work	pre-shaving pinion type cutter
2406	プロヂュバランス付きピニオン カッタ	PUROTYUBARANSU TUKI PINION KATTA	the pinion type cutter having tooth profile with protuberance	protuberance pinion type cutter
2407	セミトッピング付きピニオン カッタ	SEMITOPPINGU TUKI PINION KATTA	the pinion type cutter having the semi-topping tooth profile	semi-topping pinion type cutter
2408	トッピングピニオンカッタ	TOPPINGU PINION KATTA	the pinion type cutter having topping tooth profile	topping pinion type cutter

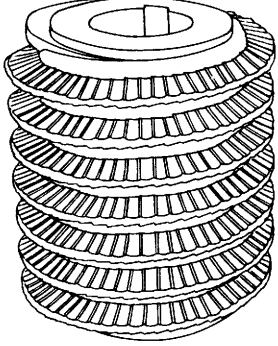
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2409	スプラインピンニオンカッタ	SUPURAIN PINION KATTA	the pinion type cutter for gear cutting of spline NOTE : According to the tooth profiles of splines, there are involute spline pinion type cutter, parallel spline pinion type cutter, trapezoidal spline pinion type cutter, helical spline pinion type cutter, etc. 	pinion type cutter for spline	
2410	スプロケットピンニオンカッタ	SUPUROKETTO PINION KATTA	the pinion type cutter for gear cutting of sprocket NOTE : According to the types of sprockets, there are roller chain sprocket pinion type cutter, silent chain sprocket pinion type cutter, block chain sprocket pinion type cutter, film sprocket pinion type cutter, timing belt pulley sprocket pinion type cutter, etc. 	pinion type cutter for sprocket	
2411	セレーションピンニオンカッタ	SERÊSYON PINION KATTA	the pinion type cutter for gear cutting of serration NOTE : There are types such as involute (or angle shape) serration pinion type cutter, etc. 	pinion type cutter for serration	

No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2412	荒加工用ピニオンカッタ	ARAKAKÔ YÔ PINION KATTA	the pinion type cutter having the roughing tooth profile	pinion type cutter for roughing	
2413	仕上げ用ピニオンカッタ	SIAGE YÔ PINION KATTA	the pinion type cutter having the finishing tooth profile	pinion type cutter for finishing	
2414	特殊歯形ピニオンカッタ	TOKUSYU HAGATA PINION KATTA	the pinion type cutter for gear cutting of the special tooth profile NOTE : There are types such as cam type, square hole type, etc.	pinion type cutter for particular profile	
2415	特殊形状ピニオンカッタ	TOKUSYU KEIZYÔ PINION KATTA	the pinion type cutter of special shape NOTE : Pot pinion cutter 	pinion type cutter of particular form	
2451	直線溝ホブ	TYOKUSEN MIZO HOB	the gear hob having straight gashes	axial gash gear hob, straight gash gear hob	
2452	ねじれ溝ホブ	NEZIRE MIZO HOB	the gear hob having helical gashes NOTE : Generally the gashes are at right angles to the tooth trace .	helical gash gear hob	
2453	逆ねじれ溝ホブ	GYAKU NEZIRE MIZO HOB	the gear hob having inverse helical gashes NOTE : This is also called the inverse lead hob.	inverse helical gash gear hob	

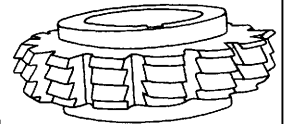
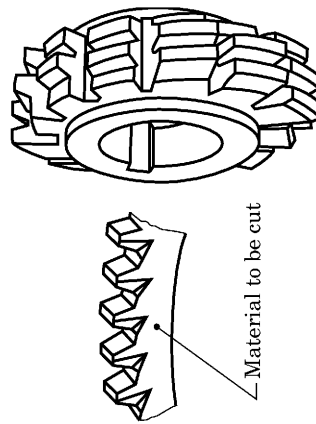
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2454	テーパー付きホブ	TÊPA TUKI HOB	the gear hob of which the pitch face is cylindrical and a part of the outer periphery is tapered 	gear hob with taper	
2455	円すいホブ	ENSUI HOB	the gear hob of which the pitch face is circular 	conical gear hob	
2456	1条ホブ	ITIZYÔ HOB	the gear hob of which the cutting edges are along a single tooth space	single thread gear hob, single start gear hob	
2457	多条ホブ	TAZYÔ HOB	the gear hob of which the cutting edges are along two or more tooth spaces	multi threads gear hob, multi starts gear hob	
2458	歯車用 (はん用) ホブ	HAGURUMA YÔ (HANYÔ) HOB	the gear hob of wide use for gear-cutting the cylindrical gears (see JIS B 4354) 	gear hob	

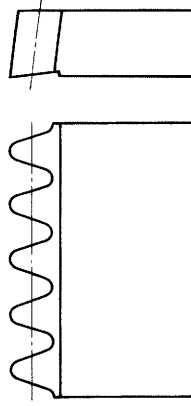
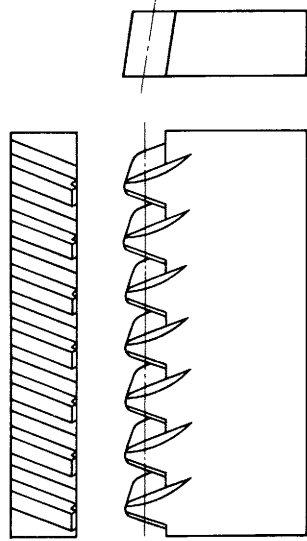
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2459	小形歯車用ホブ	KOGATA HAGURUMA YÔ HOB	the gear hob for gear cutting the small gears of watches, measuring instruments, etc. (see JIS B 4354)	fine pitch gear hob	
2460	減速歯車用ホブ	GENSOKU HAGURUMA YÔ HOB	the gear hob for gear cutting the large size gears such as turbine gears Generally it has the chamfer .	turbine gear hob, reduction gear hob	
2461	スプラインホブ	SUPURAIN HOB	the gear hob for gear cutting the spline shafts NOTE : According to the tooth profiles and shapes of shafts, there are involute spline hob, parallel spline hob, trapezoidal spline hob and taper root spline hob, etc. 	spline hob	
2462	セレーションホブ	SERÊSYON HOB	the gear hob for gear cutting the serration shafts NOTE : According to the tooth profiles and shapes, there are involute (or angle type) serration hob, taper serration hob, etc.	serration hob	
2463	スプロケットホブ	SUPUROKETTO HOB	the gear hob for gear cutting the sprockets NOTE : According to the types of sprockets, there are roller chain sprocket hob, silent chain sprocket hob, block chain sprocket hob, film sprocket hob, etc. 	sprocket hob	

No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2464	タイミングベルトプーリホブ	TAIMINGU BERUTO PŪRI HOB	the gear hob for gear cutting the timing belt pulley 	timing belt pulley hob	
2465	ウォームホブ	UÔMU HOB	the gear hob for gear cutting the worm wheels NOTE : Generally the pitch cylinder , number of threads and tooth flank of the gear hob become equal to those of the worm. There are types such as the crowning worm hob for fitting crowning to the worm wheel, and gear hob provided with the chamfer for gear cutting by the tangential feed 	worm hob	
2466	鼓形ウォームホブ (つづみがたー)	TUZUMI GATA UÔMU HOB	the gear hob for gear cutting the worm wheel, of which the outer periphery becomes larger from the center towards both ends 	hourglass worm hob	
2467	複リードウォームホブ	HUKU RÎDO UÔMU HOB	the gear hob of which left and right leads have been changed in order to perform micro-adjustment gear cutting of the tooth thickness of the worm gear	dual lead worm hob	

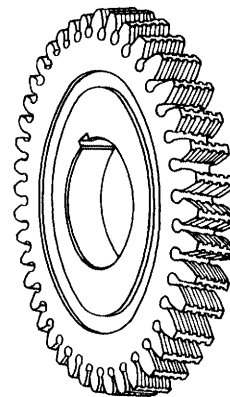
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2468	セレーテッドホブ, ウォームシェーピングホブ	SERÊTEDDO HOB UÔMU SHÊBINGU HOB	the gear hob to perform shaving finish of the tooth profile of the worm wheel NOTE : These hobs have worm shaped thread face provided with a number of gashes . 	serrated shaving hob, wormer shaving hob	
2469	荒加工用ホブ	ARAKAKÔ YÔ HOB	the gear hob having the roughing tooth profile (see JIS B 4350)	roughing gear hob	
2470	仕上げ用ホブ	SIAGE YÔ HOB	the gear hob having the finishing tooth profile (see JIS B 4350)	finishing gear hob	
2471	一卷 (荒削り) ホブ	HITOMAKI (ARAKEZURI) HOB	the roughing gear hob having the tooth width of approximately one pitch It is used mainly for gear cutting of the large module gear.	one wind roughing gear hob	
2472	研削ホブ	KENSAKU HOB	the gear hob of which the cutting tooth flank has been finished by grinding NOTE : It is also called "グラウンドホブ" (GURAUNDO HOB).	ground hob	
2473	非研削ホブ	HI KENSAKU HOB	the gear hob of which the cutting tooth flank has not been ground NOTE : It is also called "アングラウンドホブ" (ANGURAUNDO HOB).	unground hob	
2474	プリグラインディングホブ	PURIGURAINDENGU HOB	the gear hob for pre-working of grinding gear (see JIS B 4350)	pre-grinding gear hob	
2475	プリシェーピングホブ	PURISYÊBINGU HOB	the gear hob for pre-working of gear to be processed with shaving work (see JIS B 4350)	pre-shaving gear hob	
2476	プロチュユバランス付きホブ	PUROTYUBARANSU TUKI HOB	the gear hob having the tooth profile with protuberance (see JIS B 4350)	protuberance gear hob	

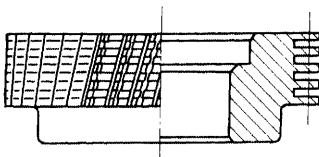
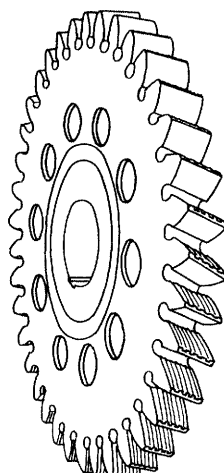
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2477	セミトッピング付きホブ	SEMI TOPPINGU TUKI HOB	the gear hob having the semi-topping tooth profile (see JIS B 4350)	semi-topping gear hob	
2478	トッピングホブ	TOPPINGU HOB	the gear hob having the topping tooth profile (see JIS B 4350)	topping gear hob	
2479	修整歯形ホブ	SYŪSEI HAGATA HOB	the gear hob having the modified tooth profile (see JIS B 4350)	modified tooth profile gear hob	
2480	特殊歯形ホブ	TOKUSYU HAGATA HOB	the gear hob for gear cutting of special tooth profile NOTE : There are gear hobs for semi-circle key-way, for non-circular type gear, for face gear, for rotor, etc.	gear hob for particular profile	
2481	サイクロイドホブ	SAIKUROIDO HOB	the gear hob having cycloid tooth profile	cycloid gear hob	
2482	シングルポジションホブ	SINGURU POZISYON HOB	the gear hob for gear cutting at the particular attaching position	single position hob	
2483	チャンファリングホブ	TYANHARINGU HOB	the gear hob for chamfering the end face of the tooth profile	chamfering hob	
2484	ラチェットホブ	RATYETTO HOB	the gear hob for gear cutting the gear having ratchet tooth profile NOTE : Generally, in order to secure the roundness of tooth space bottom of gear and fillet diameter, the single position hob is preferred.	ratchet hob	

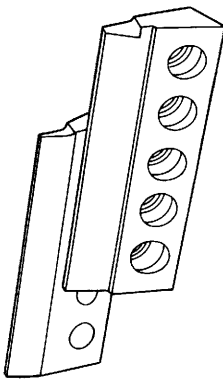
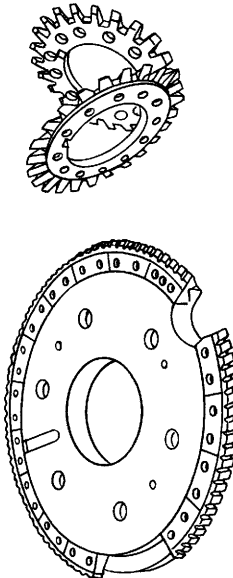


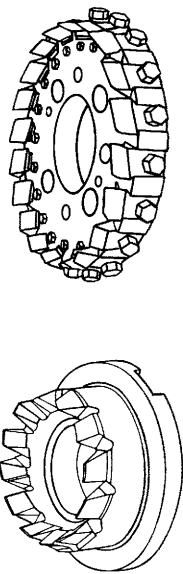
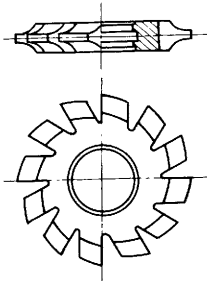
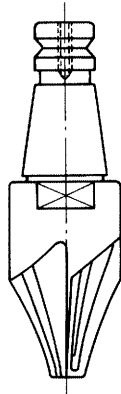
No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2485	サインカーブホブ	SAIN KĀBU HOB	the gear hob for gear cutting the gear having sine curve tooth profile	sine curve hob	
2486	内歯車用ホブ	UTI HAGURUMA YÔ HOB	the gear hob for gear cutting the internal gear	gear hob for internal gear	
2501	ずぐばラックカッタ	SUGUBA RAKKU KATTA	the rack type cutter of the straight teeth for spur gear and helical gear NOTE : Generally the rack type cutter for the involute spur gear and helical gear is simply called the rack type cutter . 	rack type cutter for spur and helical gear	
2502	はすばラックカッタ	HASUBA RAKKU KATTA	the rack type cutter of helical rack type to be used for gear cutting of the helical gear 	helical rack type cutter	
2503	荒加工用ラックカッタ	ARA KAKÔ YÔ RAKKU KATTA	the rack type cutter having the roughing tooth profile (see JIS B 4350)	roughing rack type cutter	
2504	仕上げ用ラックカッタ	SIAGE YÔ RAKKU KATTA	the rack type cutter having the finishing tooth profile (see JIS B 4350)	finishing rack type cutter	

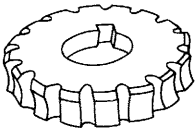
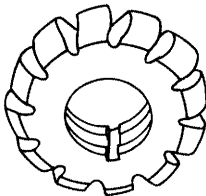
No.	Term (Japanese characters)	Reading	Definition	(Information)
				English equivalent
2505	プリグライインデイングラックカッタ	PURIGURAINDENGU RAKKU KATTA	the rack type cutter for pre-working of grinding gear (see JIS B 4350)	pre-grinding rack type cutter
2506	プリシェーピングラックカッタ	PURISYÊBINGU RAKKU KATTA	the rack type cutter for pre-working of the gear to be processed with shaving (see JIS B 4350)	pre-shaving rack type cutter
2507	セミトッピング付きラックカッタ	SEMITOPPINNGU TUKI RAKKU KATTA	the rack type cutter having the semi-topping tooth profile (see JIS B 4350)	semi-topping rack type cutter
2508	スプラインラックカッタ	SUPURAIN RAKKU KATTA	the rack type cutter for gear cutting the spline (see JIS B 4350) NOTE : According to the tooth profiles of the splines, there are the involute spline rack type cutter, parallel spline rack type cutter, trapezoidal spline rack type cutter, etc.	spline rack type cutter
2509	スプロケットラックカッタ	SUPUROKETTO RAKKU KATTA	the rack type cutter for gear cutting of the sprocket NOTE : According to the types of sprockets, there are the roller chain sprocket rack type cutter, silent chain sprocket rack type cutter, block chain sprocket rack type cutter, etc.	sprocket rack type cutter
2510	特殊歯形ラックカッタ	TOKUSYU HAGATA RAKKU KATTA	the rack type cutter for gear cutting of special tooth profile	rack type cutter for particular profile
2511	特殊形状ラックカッタ	TOKUSYU KEIZYÔ RAKKU KATTA	the rack type cutter of special shape	rack type cutter of particular form
2551	シェーピングラックカッタ	SYÊBINGU KATTA	the gear cutter for shave-finishing the tooth flank of the gear (see JIS B 4357)	shaving cutter



No.	Term (Japanese characters)	Reading	Definition	(Information) English equivalent
2552	特殊セレーションシェービング カッタ	TOKUSYU SERÊSYON SYÊBINGU KATTA	the shaving cutter having special serration shape It is mainly used for shaving finish of small pitch gear. 	shaving cutter for particular serration
2553	リード修整用シェービング カッタ	RÎDO SYÛSEI YÔ SYÊBINGU KATTA	the shaving cutter provided with serration on only a single tooth flank for modifying the lead of the gear to be cut 	shaving cutter for lead modification
2601	すぐばかさ歯車用カッタ	SUGUBA KASA HAGURUMA YÔ KATTA	the cutter for gear cutting the straight bevel gear	straight bevel gear cutter

No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2602	すぐばかさ歯車用 G 形刃物	SUGUBA KASA HAGURUMA YÔ ZÎ GATA HAMONO	the straight bevel gear cutter of plate shape, used by being mounted on the straight bevel gear cutting machine An upper tool and a lower tool form a pair (see JIS B 4351). NOTE : According to the sizes of machine to be used, there are distinctions of types of 75, 150, 300 and so on. 	straight bevel gear generating cutter type G	
2603	荒加工用すぐばかさ歯車用 G 形刃物	ARAKAKÔ YÔ SUGUBA KASA HAGURUMA YÔ ZÎ GATA HAMONO	the straight bevel gear generating cutter type G having roughing tooth profile	straight bevel gear generating cutter for roughing type G	
2604	すぐばかさ歯車用ロータリカッタ	SUGUBA KASA HAGURUMA YÔ RÔTARI KATTA	the rotary type cutter for gear cutting the straight level gear 	rotary cutter for straight bevel gear generating	

No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2605	まがりばかさ歯車用カッタ	MAGARIBA KASA HAGURUMA YÔ KATTA	the cutter for gear cutting the spiral bevel gear 	spiral bevel gear cutter	
2651	インボリユートフライス	INBORYÛTO HURAI SU	the form-relieved milling cutter for gear cutting the involute spur gear and helical gear (see JIS B 4232) 	involute gear milling cutter	
2652	かさ歯車用インボリユートフライス	KASA HAGURUMA YÔ INBORYÛTO HURAI SU	the form-relieved milling cutter for gear cutting the straight bevel gear 	involute milling cutter for straight bevel gear	
2653	歯切りエンドミル	HAGIRI ENDO MIRU	the end mill having the tooth-profiled cutting edge on peripheral surface NOTE : It is mainly used for gear cutting of large size gear.	gear cutting end mill	

No.	Term (Japanese characters)	Reading	Definition	(Information)	
				English equivalent	
2654	スプラインフライス	SUPURAIN HURAI SU	the form-relieved milling cutter for gear cutting the spline NOTE : According to the tooth profiles of splines, there are the involute spline milling cutter, parallel spline milling cutter, trapezoidal spline milling cutter, etc. 	spline milling cutter	
2655	スプロケットフライス	SUPUROKETTO HURAI SU	the form-relieved milling cutter for gear cutting the sprocket NOTE : According to the types of sprocket, there are the roller chain sprocket milling cutter, silent chain sprocket milling cutter, etc. 	sprocket milling cutter	
2656	セレーションフライス	SERÊSYON HURAI SU	the form-relieved milling cutter for gear cutting of the serration shaft NOTE : According to the tooth profiles of shaft, there are the involute (or angle type) serration milling cutter, etc.	serration milling cutter	
2657	ウォームフライス	UÔMU HURAI SU	the form-relieved milling cutter to be used for gear cutting of the worm	worm milling cutter	
2701	内歯車用ブローチ	UTI HAGURUMA YÔ BURÔTI	the broach to be used for gear cutting of the internal gear of involute tooth profile NOTE : There is also the helical involute broach for helical internal gear.	involute broach	