

LORD CORPORATION
MECHANICAL PRODUCTS DIVISION
ERIE, PENNSYLVANIA

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TITLE: SUMMARY OF ABBREVIATIONS, ACRONYMS AND TERMINOLOGY
FOR PRODUCT DRAWINGS, TOOL DRAWINGS AND SPECIFICATIONS

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1. SCOPE

This specification is to establish a listing of frequently used abbreviations, acronyms and terminology for product drawings, tool drawings and specifications.

2. INTENDED USE

The information contained in this specification can be used for identifying abbreviations and acronyms when preparing new and revised drawings and specifications.

3. ADVANTAGES

Benefits will include:


- a. consistency of meaning and interpretation.
- b. all acronyms and abbreviations contained in one document for easy reference.
- c. the identification of different abbreviations with similar application.

4. LISTING OF ABBREVIATIONS, ACRONYMS AND TERMINOLOGY FOR PRODUCT DRAWINGS, TOOL DRAWINGS AND SPECIFICATIONS

LORD MECHANICAL PRODUCTS' PRODUCT or TOOL DRAWING or SPECIFICATION
 ABBREVIATIONS, TERMINOLOGY & ACRONYMS

Item	*Abbreviation, Terminology or Acronym	Meaning or Interpretation	Application
Product Drawing Sheet 1A (through 1--):			
1	CAGE	US Government Code assigned to Lord	Sheet 1 of Lord products drawings.
2	SHT	Sheet	First sheet of Lord product drawings (Contains Bill of Material, Process Specs & Notes. Revision letter will always be the same for each sheet of Sheet 1A, 1B, 1C, etc AND must always be >= to other Sheets, 2 & higher (summarized in "DWG SHT NO. REV. STATUS:" at top right of Product Drawing - Sheet 1.
3	DWG. NUMBER	Drawing Number	Product drawing title block for part number. Note: Drawing number and part number are not always identical.
4	DWG. REV.	Revision	Product drawing title block for part number revision letter (Letters progress consecutively, but skip "I". After the letter "Z", revision letters start with "AA", "AB", "AC", - - - - - "AZ", then "BA", "BB" - - - - -.
5	SHT NO.	Sheet Number	Product Drawings. First sheet or sheets (numbered "1A" thru "_A") contains: <i>Revision status for ALL sheets (summarized in "DWG. SHT NO REV. STATUS:");</i> <i>Material requirements, Bill of Material information, Process specifications, Test requirements, Marking requirements, Responsibility for Control (Lord or Customer) of "Design (Form, Fit & Function)",</i> <i>"Material" and "Process (es)" and all Notes.</i> Sheets (numbered "2" through "_") contain part geometry with references back to SHT 1A through - A.
6	CPR	Customer Print Record	Indicates to Lord personnel level of Approvals required for changes.
7	PCN	Product Change Notice	Form used for revising Lord drawings. Details (previous vs revised changes), causes, requestor, effectivity, etc are summarized on this form.
8	REV.	Revision	Identifies changes to various parts, specifications, notes, etc.
9	Spec	Specification	Drawings and specifications.
10	QTY	Quantity	Indicates the number of times and operation is performed or how parts needed in an assembly ("X" indicates none; it is the highest level of the assembly).
11	AL	Aluminum	Metallic material designation.
12	ST	Steel	Metallic material designation.
13	TI	Titanium	Metallic material designation.
14	SS or SST	Stainless steel	Metallic material designation.
15	IR	Industrial rubber	Non metallic (elastomeric or rubber like) material used in a product.
16	NR	Natural rubber	Non metallic (elastomeric or rubber like) material used in a product.
17	BTR™ or BTRTM __	Broad Temperature Range elastomer	Non metallic (elastomeric or rubber like of Lord) material used in a product.
18	SPE™ or SPETM __	Special performance Elastomer	Non metallic (elastomeric or rubber like of Lord) material used in a product.
19	NYL	Nylon	Non metallic (plastic) material used in a product.
20	"	Inches	Unit of measure (English units).
21	°	Degrees	Unit of rotational deflection (English units).
22	LBS.	Pounds	Used for specifying Weight or a Force (in English units).
23	IN.	Inches	Used for specifying a deflection or a unit of length (English units)
24	LBS/IN	Pounds per inch	Unit of translational stiffness (number of Pounds required to deflect a unit of 1 inch).
25	IN-LBS/DEG	Inch-Pounds/Degree	Unit of rotational stiffness (number of Inch Pounds of torque required to rotate 1 degree).


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26	K	Static stiffness	Specifies stiffness - units of Lbs/in, In-Lbs/Degree at slow rates (~ 1 cpm) of loading.
27	K*	Complex Dynamic Stiffness	Specifies stiffness - units of Lbs/in, In-Lbs/Degree at slow rates (~ 1 cpm) of loading.
28	K'	Dynamic Elastic Stiffness	Specifies stiffness - units of Lbs/in, In-Lbs/Degree at rates >> 1 cpm of loading.
29	K''	Dynamic Damping Stiffness	Specifies damping stiffness - units of Lbs/in, In-Lbs/Degree at rates >> 1 cpm of loading.
30	F _N	Natural Frequency	Product drawings - defines a dynamic characteristic of an isolator.
31	T or TRANS	Transmissibility	Product drawings - defines a dynamic characteristic of an isolator at resonance.
32	K''/K' or Tan Delta	Loss Factor or Tan Delta	Indicates the amount (Increasing K''/K' indicates more) damping in a part.
33	NA or N.A.	Not Applicable	Used to indicate that the call out (or lack of one) is not necessary or appropriate.
34	Hz	Hertz	Frequency of oscillation in cycles per second.
35	CPM	Cycles per Minute	Frequency of oscillation in cycles per minute.
Product Drawing Sheet 2 (through 20 or higher):			
36	()	Information (<u>within</u> parentheses) to be put on part - NO parentheses are included in marking.	Drawings. Mark ONLY info - for example, a letter or number. Do not include "()". In some cases a "()" around a dimension indicates it is a Reference.
37	ALUM	Aluminum	Drawings. An abbreviation.
38	ANSI	American National Standards Institute	Drawings and specifications.
39	ASME	American Society of Mechanical Engineers	Drawings or specifications. An abbreviation.
40	AVG DIA	Average Diameter	Drawings. Where noted (for non rigid parts), allows a diameter to be out of round greater than max & min diameters: controlled by Cylindricity requirement of the diameter. See ANSI Y14.5.
41	BAC	Boeing Aircraft Corporation	Drawings or specifications. An abbreviation.
42	Bsc or BSC	Basic	Used for dimensioning True Position features on drawings (Theoretically perfect dimension).
43	©	Copyrighted (for Trademarks)	Drawings. Defines Lord intellectual property covered by a registered copyright.
44	C or 	Centerline	Drawings. An indication of symmetry.
45	CAGE	US Government Code assigned to Lord	Sheet 1 of Lord products drawings.
46	C'BORE	Counterbore	Drawings. One non through bore concentric to another bore.
47	CENT	Centering	Tool drawings. An abbreviation for specifying the centering (symmetry) of a feature.
48	COND	Condition	Drawings or specifications. An abbreviation.
49	CPR or CPRC	Customer Print Record Card	Drawings or specifications. Provide Lord with a cross reference to Customer requirements.
50	CRITICAL PART	_____	Specifies special manufacturing controls required on parts for Bell, Sikorsky, Boeing and the U.S. Government (applicable requirements noted on Sheet 1 of drawing).
51	CRS	Cold Rolled Steel	Tool drawings. An abbreviation.
52	CSK or C'SINK	Countersink	Drawings. A conical depression machined concentric into an existing hole.
53	DAC	Douglas Aircraft Company	Drawings or specifications. An abbreviation.
54	DIA	Diameter	Drawings. Tolerance of a diameter specified with a maximum & minimum size.





LORD MECHANICAL PRODUCTS' PRODUCT or TOOL DRAWING or SPECIFICATION
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Item	*Abbreviation, Terminology or Acronym	Meaning or Interpretation	Application
55	DIM.	Dimension	Drawings. Used to refer to a specific dimensional feature.
56	DP	Deep	Drawings and specifications.
57	DP	Deep or Depth	Drawings or specifications. An abbreviation.
58	DPF	Diameter - Press Fit	Tool drawings. Two diameters that are interference fitted at room temperature (22° C or 72° F).
59	DR	Drill	Tool drawings. An abbreviation.
60	DSF	Diameter - Slip Fit	Tool drawings. Two diameters that can be slip fitted at room temperature (22° C or 72° F).
61	Electropolish	A process to be performed.	A chemical electrolytic process to control size &/or surface finish or corrosion resistance.
62	EQ	Equally	Drawings. An abbreviation used to indicate a uniformly spaced features.
63	EXT or EXT'L	External	Drawings. An abbreviation.
64	FAA	(U.S.) Federal Aviation Administration	Drawings and specifications.
65	FHCS	Flat Head Socket Screw	Tool drawings. An abbreviation for a type of internal wrenching head bolt.
66	FLIGHT SAFETY PART	_____	Specifies special manufacturing controls required on parts for Bell, Boeing, Sikorsky and the U.S. government (applicable requirements noted on Sheet 1 of drawing) .
67	FMP	For Manufacturing Purposes	Necessary for subsequent functions or operations by Lord. Deviations must be approved by Lord Manufacturing engineers.
68	FREE MACH	Free Machining	Tool drawings. An abbreviation for an easy machining steel.
69	H & G	Harden and Grind	Tool drawings. An abbreviation for specifying a thermal treatment of the ferrous material.
70	HRS	Hot Rolled Steel	Tool drawings. An abbreviation.
71	HT	Heat Treat	Tool drawings. An abbreviation for specifying a thermal treatment of the material.
72	ID	Inside Diameter	Drawings. An abbreviation used to refer to an inside cylindrical feature.
73	INT or INT'L	Internal	Drawings. An abbreviation.
74	JAR	(European) Joint Aviation Regulations	Drawings and specifications.
75	KEY	A Key Characteristic	Feature must be controlled using Statistical Process Control methods per Lord spec _____.
76	L	Lord	Drawings. An abbreviation used to refer to the Company "Lord".
77	L/D or L-D	Load Deflection	Drawings. Designates a load vs deflection test or load vs deflection fixture.
78	LG	Long	Tool drawings. An abbreviation for specifying length.
79	LK	Prefix for a serial number (previously Lord Kinematics)	Drawings. A prefix used with serial numbers (usually employed for S/Ns of final assemblies).
80	MAT'L or MAT.	Material	Drawings or specifications. An abbreviation.
81	MAX	Maximum	Drawings. An abbreviation used to indicate the most (maximum) features.
82	MAX	Maximum	Drawings or specifications. An abbreviation.
83	Mil - _ - _	Military Specification (US Government)	Drawings and specifications.
84	MIN	Minimum	Drawings. An abbreviation used to indicate the least (minimum) features.
85	MON or MO	Month	Drawings. Month of manufacture (2 digits - i.e., 03).
86	N.A.	Not Applicable	Drawings and specifications.
87	OD	Outside Diameter	Drawings. An abbreviation used to refer to an outside cylindrical feature.
88	P. F. or PF	Press Fit	Two diameters that are interference fitted at Room Temperature.

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89	P.D.	Pitch Diameter	Drawings and specifications (for thread call outs).
90	P/N	Part number	Drawings or specifications. An abbreviation.
91	PF	Press Fit	Tool drawings. Interference fit at room temperature (22° C or 72° F) unless otherwise specified.
92	PH	Precipitation Hardening	Reference to Precipitation Hardening stainless (13-8, 15-5, 17-4, 17-4) steels' heat treatment.
93	ph	Level of Acid vs Basic of a material	Material or Process Specifications.
94	PLCS	Places	Drawings. An abbreviation used to indicate a repetition/duplication of identical features.
95	PLC'S or PLCS	Places	Drawings (number of times a feature is repeated).
96	PMA	Parts Manufacturing Authority	Drawings or specifications (Controls changes).
97	PPM	Part Per Million	Drawings or specifications. Defines per SPC, the calculated number of parts discrepant per million parts based on data analyzed (lower is better).
98	PT	Point	Drawings. An abbreviation. Specifies a position in space.
99	PURCH	Purchase	Drawings. Indicates an item is to be obtained from someone else - a catalog item.
100	QA	Quality Assurance	Drawings. An abbreviation used to indicate a inspection or quality requirement.
101	QQ - _ - _	Military Specification (US Government)	Drawings and specifications.
102	QTR	Quarter	Drawings or specifications. An abbreviation normally used with specifying date of manufacture.
103	QTY	Quantity	Drawings and specifications.
104	R	Radius	Drawings.
105	R 	Registered (for Trademarks)	Drawings. Defines Lord intellectual property covered by a registered trademark.
106	R _A	Rockwell Hardness on "A" scale	Drawings/specifications for call out of material hardness.
107	R _B	Rockwell Hardness on "B" scale	Drawings/specifications for call out of material hardness.
108	R _C	Rockwell Hardness on "C" scale	Drawings/specifications for call out of material hardness.
109	REF	Reference	Drawings (tolerance not to be measured; controlled by other dimensions or by functional GO or No Go, gaging).
110	REF	Reference	Drawings. Dimension is provided for information purposes only. Other dimensions are used to control the feature, thus a Reference dimension is not inspected directly.
111	REQ'D or REQ.	Required	Drawings or specifications. An abbreviation.
112	REQUIREMENT	Requirement	Drawings or specifications. An abbreviation.
113	S/N or SN	Serial Number	Drawings. Used as a prefix in front of distinct numbers assigned to a part (Serial number could also be prefixed with LK or just numeric characters). Numbers for purchased parts provided via Lord Purchase Order.
114	SECT	Section	Drawings or specifications. An abbreviation. Specifies a cutting plane to show details.
115	SECT.	Section	Drawings. An abbreviation used to indicate a cutting plane of a part.
116	SF	Slip Fit	Tool drawings. Parts can be slip fitted at room temperature (22° C or 72° F).
117	SHCS	Socket Head Cap Screw	Tool drawings. An abbreviation for a type of internal wrenching head bolt.
118	SHT	Sheet	Sheet 2 & beyond covers a parts geometry with some references back to Sheet 1 notes. Revision letter must always be <= to other Sheet 1 (summarized in "DWG SHT NO. REV. STATUS:" at top right of product drawing - Sheet 1A, 1B, 1C, etc).

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119	SPC	Statistical Process Control	Drawings or Specifications. A statistical statistical technique used to analyze parts and processes to determine if the manufacturing steps used to produce an end result (feature tolerance, coating thickness, weight, stiffness, etc) is "In Control" and "Capable".
120	SPH	Spherical	Drawings (3 dimensional surface control) .
121	SQ	Square	Tool drawings. An abbreviation for specifying a feature is square (all sides are same length) .
122	SR	Supplier Request	Lord Purchase Orders (Used by Lord Suppliers to request Changes or Deviations).
123	STI	Special Thread Insert	Modified thread form (for use with thread inserts) requiring special thread form dimensions.
124	STK	Stock	Tool drawings. An alternate word for "material" that something is made from.
125	SYM	Symmetry	Drawings (specifies that 2 features are identical; mirror images) .
126	T.I.R.	Total Indicated Runout	Drawings. Controls relationship of one cylindrical (or surface) feature to another feature. Total movement of an Indicator when performing the specific measurement of Runout.
127	TH'd	Thread	Drawings. Designates an internal or external threaded fastener geometry.
128	THD or Th'd	Thread	Specifies a thread requirement (Metric: M_ or English UNF or UNJF).
129	THRU	Through	Drawings or specifications. An abbreviation.
130	TOL.	Tolerance	Drawings. Used to refer to a specific dimensional feature's allowable deviation from nominal.
131	TR	Trimester	Drawings. An abbreviation used to indicate a timeframe of 4 months (used to identify a manufacturing time period - usually for elastomeric/rubber parts).
132	TS-002	Technical Standard (Lord)	Drawings. Specifies quality of elastomeric portion of a product.
133	Typ or TYP	Typical	Used on drawings to identify features that are repeated in multiple locations.
134	UNC-3A	Internal (course) thread callout	Must meet requirements of Mil-S-7742 Thread Form Specification.
135	UNC-3B	External (course) thread callout	Must meet requirements of Mil-S-7742 Thread Form Specification.
136	UNF-3A	Internal thread callout	Must meet requirements of Mil-S-7742 Thread Form Specification.
137	UNF-3B	External thread callout	Must meet requirements of Mil-S-7742 Thread Form Specification.
138	UNJF-3A	Internal thread form to mate with UNJF-3B	Must meet requirements of Mil-S-8879 Thread Form Specification.
139	UNJF-3B	External thread form to mate with UNJF-3A	Must meet requirements of Mil-S-8879 Thread Form Specification. Drawing may require rolling (formed via cold working process) of the thread form.
140	UNJS	Very fine external thread	Must meet requirements of Mil-S-8879 Thread Form as called out on drawing.
141	VITAL PART		Specifies special manufacturing controls required on parts for Agusta, Eurocopter and GKN Westland Helicopter (applicable requirements noted on Sheet 1 of drawing) .
142	YR	Year	Drawings. Year of manufacture (2 digits - i.e. 98).
143		Reference is made to a Note on Sheet 1	See Note (number in Box) on Sheets, starting with #1.
144		Revision Block	Tool drawings. A letter (A thru Z) for reference to a specific drawing change .
145		Surface finish of number specified	Drawings. Specifies maximum (No tool marks allowed) surface finish (63, 125 & 250 are typical) in English units.

* Abbreviation, Terminology, or Acronym may be shown using all capital (Block) or lower case letters or combinations. Periods (.) may or not be used.