THOR -NT Drawing Package Specifications

DRAWING FILE NAMING SYSTEM:

AABBCNNN

AA - The first set of letters are used as the name given to the crash test dummy and will remain consistent through-out the entire package of drawing.

T1 = THOR 50th percentile male dummy.

BB - The second set of letters refers to the body area of the dummy. The two letter descriptor tags can be found in the chart labeled Two Letter Descriptor Tags For Body Areas.

C - A single letter noting the type of drawing.

M	Mechanical Drawing	S	Skins
E	Electrical Drawing	T	Assembly Tools
W	Welding Drawing	C	Connector Wire
P	Purchased Dummy Part	A	Drawing Arrangement
I	Instrument Wire	X	Drawing Index
F	Fabric Pattern	B	Bill of Materials

NNN - The last three digits are a numbering scheme for the different levels of drawings such as an assembly drawing, subassembly drawing, and part or detail drawing. In general, the examples given below applies to the majority of the drawings but due to the complexity of some of the parts in the dummy these may vary slightly.

000	Denotes an assembly drawing.
100, 200, ... 900	Denotes a subassembly drawing.
010, 011, ... 099 110, 111, ... 199 210, 211, ... 299 ..... 910, 911, ... 999	Denotes a part drawing.

2 LETTER DESCRIPTOR TAGS FOR BODY AREAS

AREA	2 LETTER TAG
FULL DUMMY ASSEMBLY	FD
ANKLE	AK
ARMS	AM
CRUX	CX
DGSP	DP
FACE	FC
FEMUR	FM
FOOT	FT
HEAD	HD
INSTRUMENTATION	IN
JACKET	JK
KNEE	KN
LOWER ABDOMEN	LA
THOR-LX	LX
LOWER LEG	LL
MID-STERNUM	MS
NECK	NK
PELVIS	PL
SHOULDER	SH
SPINE	SP
THORAX	TX
UPPER ABDOMEN	UA
CALIBRATION EQUIPMENT	CE
MOLDING EQUIPMENT	ME
TEXT DOCUMENT	TD

REVISIONS:

The denotation of revisions to drawings are indicated within the title block located in the lower left-hand corner of a drawing. The latest revision number will be indicated in the designated area labeled “revision”. If there is no revision number or the abbreviation N/C (No Change) is shown, it means that no modification has been done to the drawing and is considered to be revision “0". If a revision has been made it will be listed as one of the following types.

Revision X0-99... Describes an experimental revision level. This revision level is used when a component is in the prototype or redesign stage. Each revision during the prototype or redesign stage is given a successive experimental revision number. Once the component has been thoroughly tested and the design is final it will be given a ‘R’ revision level. The ‘R’ revision description may include; THE PART SUPERCEDES AND IS IDENTICAL TO XXX-X2 (for example).

Revision R0-99.... Describes minor revisions to a component which doesn’t require the part to be replaced, ie the part can be modified to comply with the new revision level. Implied RA0-99..... ‘A’ is the base design revision level.

Revision RB0-99... Describes a major revision to a component which requires the part to be replaced, ie the part at rev level RA cannot be modified to comply with the current revision level RB. Revision RC, RD..... etc correspond with each successive major design revision.

Notes:

1. If a part is redesigned and given a new unique part number it does not need a RB0 revision level it simply begins at R0.

2. Design level revision designators (RB,C,....) do not apply to assembly drawings unless they are used to manufacture a component, ie an assembly drawing which describes a procedure to bond together parts which make up a single component.

A description of modifications made to a drawing will be listed under the revisions section located in the top right hand corner of a drawing. The category under revisions labeled “zone” identifies the location of the major modification done to a drawing. The zone will be identified by a letter corresponding to one of the letters listed along the sides of the border of a drawing and a number corresponding to one of the numbers listed along the top or bottom of the border of a drawing. For example, a change made to a drawing at a “zone” of “D3", the letter “D” would be read from the side of the border and the number “3" would be read from top/bottom of the border. The imaginary intersection that the letter/number combination makes is the location of the modification made to a drawing.

VENDOR ABBREVIATIONS:

For convenience, the names of vendors were abbreviated. The abbreviation of the vendor is followed by the part number.

AGS	AMERICAN GROUND SYSTEMS 1541 CRITESER LOOP ROAD TOLEDO, OREGON 97391 PHONE # (541) 336-2426 ; FAX # (541) 336-2427
AOS	ADVANCED ORIENTATION SYSTEMS 1901 EAST LINDEN AVENUE, UNIT # 22 LINDEN, NJ 07036-1110 PHONE # (908) 474-9595 ; FAX # (908) 474-9090
AST	APPLIED SAFETY TECHNOLOGY 10313 MILAN ROAD MILAN, OHIO 44846 PHONE # (419) 625 - 5200 ; FAX # (419) 625-5335
BD	BEARINGS AND DRIVES 35 WEST BROAD STREET WEST HAZELTON, PA 18201 PHONE # (717) 459-0333, FAX # (717) 459-1977
BEL	BELDEN INC. 2500 BRAGA DRIVE BROADVIEW, IL 60153 PHONE # (708) 344-4600 ; FAX # (708) 344-0245
BO	BOKER'S INC. 3104 SNELLING AVE. SOUTH MINNEAPOLIS, MN 55406-1937 PHONE # (612) 729-9365 ; FAX # (612) 729-8910
CG	CIBA-GEIGY CORPORATION - FORMULATED MATERIALS 4917 DAWN AVE. EAST LANSING, MI 48823 (517) 351 - 5900
CH	COLD HEADERS 5514 NORTH ELSTON AVENUE CHICAGO, IL 60630-1380 PHONE # (773)775-7900 ; FAX # (773)775-0779

CON	CONTELEC (NOVOTECHNIK U.S. INC.) 237 CEDAR HILL STREET MARLBORO, MA 01752 PHONE # (508) 485-2244 ; FAX # (508)485-2430
CU	CONAP URETHANE 1405 BUFFALO ST. OLEAN, NY 14760-1139 PHONE # (716) 372-9650 ; FAX # (716) 372-1594
CZ	CUSTOM ZIPS PO BOX 1200 SOUTH NORWALK, CT 06856 PHONE # (203) 866-1540
DA	DANKO ARLINGTON, INC. 4800 EAST WABASH AVE. BALTIMORE, MD 21215-5583 PHONE # (410) 664 - 8930 ; FAX # (410) 664 - 0891
DK	DIGI - KEY 701 BROOKS AVENUE SOUTH P.O. BOX 677 THIEF RIVER FALLS, MN 56701-0677 PHONE # (800) 344-4539 ; (218) 681-3380
DNA	DENTON ATD 10317 US HWY. 250 N. MILAN, OH 44846-9570 PHONE # (419) 625-5200; FAX # (419) 625-5335
DN	DENTON 2967 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309 PHONE # (248) 852-5100 ; FAX # (248) 852-6060
DTC	DYNAMATION TRANSDUCERS CORPORATION 348 MARSHALL ST. HOLLISTON, MA 01746 PHONE # (508) 429 - 8440; FAX # (508) 429 - 1317

EAR	EAR SPECIALITY COMPOSITES 7911 ZIONSVILLE RD. INDIANAPOLIS, IN 46268 PHONE # (317) 692-3000 ; FAX # (317) 692-3112
EN	ENTRAN 10 WASHINGTON AVE. FAIRFIELD, NJ 07004-3877 PHONE # (201) 227-1002 ; FAX # (201) 227-6865
END	ENDEVCO 198 WEST STREET ANNAPOLIS, MD 21401 PHONE # (410) 269-8800; FAX # (410) 268-5676
FG	FIBRE-GLAST DEVELOPMENTS CORP. 95 MOSIER PARKWAY BROOKVILLE, OH 45309 PHONE # (800) 821-3283 ; FAX # (937) 833-6555
FTSS	FIRST TECHNOLOGY SAFETY SYSTEMS 47460 GALLEON DRIVE PLYMOUTH, MICHIGAN 48170 PHONE # (313)451-7878 ; FAX # (313)451-9549
FX	FOAMEX 1641 BORDER AVE. TORRANCE, CA 905901-2810 PHONE # (310) 328-1332
GN	GEON, INC. (FORMERLY BF GOODRICH) 6100-T OAKTREE BLVD. INDEPENDENCE, OHIO 44131 PHONE # (216) 447-6000
IBC	INDUSTRIAL BRAKE AND SUPPLY 1608 ELMORE STREET CINCINNATI, OH 45223 PHONE # (800) 543 - 1906 ; FAX # (513) 542 - 1507

LZ	LENZIP MANUFACTURING CORP. WWW.LENZIP.COM 1900 W. KINZIE STREET CHICAGO, ILLINOIS 60622-6243 PHONE # (312) 829-1865 ; FAX # (312) 829-1515
MCM	MCMASTER CARR 473 RIDGE ROAD DAYTON, NEW JERSEY 08810-0317 PHONE # (908)329-3200 ; FAX # (908) 329-3772
MG	MOUNTAIN GEAR 730 N HAMILTON SPOKANE, WA 99202 PHONE # (800)829-2009;
MW	MERRYWEATHER FOAMS 11 BROWN ST. BARBERTON, OH 44203-2300 PHONE # (330) 753-0353 ; FAX # (330) 753-1127
MWE	MID-WEST EXPRESS 8 GREENWOOD AVE. ROMEOVILLE, IL 60441-1399 PHONE # (815) 886-7812 ; FAX # (815) 886-1510
PB	PACIFIC BEARING P.O. BOX 6980 ROCKFORD, IL 61125-6980 PHONE # (800) 962-8979 ; FAX # (815) 962-3818
PG	PARA-GEAR EQUIPMENT COMPANY 3839 W. OAKTON ST. SKOKIE, IL 60076-3438 PHONE # (847) 679 - 5905 ; FAX # (847) 679 - 8644
PIC	PRECISION INDUSTRIAL COMPONENTS CORP. 86 BENSON RD. P.O. BOX 1004 MIDDLEBURY, CT 06762-1004 PHONE # (800) 243 - 6125

RHM	RHM TECHNOLOGIES ONE MAIN ST. YAPHANK, NY 11980 PHONE # (516) 924-2455 ; FAX # (516) 924-2619
RS	RADIO SHACK FOR NEAREST LOCATION CALL 1-800-THE-SHACK
SAC	SPACE AGE CONTROLS 38850 20TH STREET EAST PALMDALE, CA 93550 PHONE # (805) 273-3000 ; FAX # (805)273-4240
SB	SPEC-BARNES ASSOCIATED SPRING - RAYMOND BARNES GROUP PO BOX 77152 DETROIT, MI 48277 PHONE # (800) 872-7732 ; FAX # (419) 891 - 9192
SI	STERLING INSTRUMENTS 2101 JERICHO TURNPIKE BOX 5416 NEW HYDEPARK, NY 11042-5416 PHONE # (516) 328-3300 ; FAX # (516)326-8827
TT	TRANSDUCER TECHNIQUES 43178 BUSINESS PARK DR. TEMECULA, CA 92590 PHONE # (909) 676-3965 ; FAX # (909) 676-1200
VS	VISHAY SFERNICE VISHAY AMERICAS ONE GREENWICH PLACE SHELTON, CT 06484 PHONE # (402) 563-6866 ; FAX # (402) 563-6296
YKK	YKK U.S.A., INC. SOUTHEAST MANUFACTURING B 1306 COBB INDUSTRIAL DRV. P.O. BOX 6729 MARIETTA, GA 30062

SCREW ABBREVIATIONS:

F.H.S.C.S.	FLAT HEAD SOCKET CAP SCREW
B.H.S.C.S.	BUTTON HEAD SOCKET CAP SCREW
S.H.C.S.	SOCKET HEAD CAP SCREW
S.S.S	SOCKET SET SCREW

MATERIAL ABBREVIATIONS:

CRS	COLD ROLLED STEEL
SS	STAINLESS STEEL
AL	ALUMINUM

BILL OF MATERIALS - PART TYPE ABBREVIATIONS:

A	ASSEMBLY
C	CUT FOAM OR PLASTIC
Q	CAST METAL PART
F	FABRIC OR SEWN PATTERN
I	PURCHASED INSTRUMENT
M	MACHINED PART
O	MOLDED PART
P	PURCHASED
S	SKIN
W	WELDED ASSEMBLY

ADDITIONAL ABBREVIATIONS:

N/C	NO CHANGE
UL	UPPER LEFT
UR	UPPER RIGHT
LL	LOWER LEFT
LR	LOWER RIGHT
DGSP	DOUBLE GIMBALLED STRING POTENTIOMETER
CRUX	COMPACT ROTARY UNIT
B.C.	BOLT CIRCLE

BORDER SIZES:

The border sizes are as follows:

Border A = 10.5" x 8"
Border B = 16.5" x 10.5"
Border C = 21.5" x 16.5"
Border D = 33.5" x 21.5"
Border E = 43.5" x 33.5"

PART FINISHES:

POWDER COATING: 0.005-0.006 thickness. Alternative finishes of equal or lesser thickness and equal or greater corrosion resistance may be used.

TEFLON COATING: 0.0008"-0.002" thickness Alternative finishes of equal or lesser thickness and equal or greater corrosion resistance may be used.

CLEAR ANODIZE: The aluminum object is immersed as the anode in an acid electrolyte, and a direct current is applied. Oxidation of the surface occurs, producing a thickened, hard, porous film of aluminum oxide 0.0002 to 0.0007 thousandths of an inch thick.

HARDCOAT ANODIZE: Hard coat anodize, commonly referred to as Type III anodizing, is formed by using an electrolytic solution of sulfuric acid at approximately 32° F and a current density of 23 to 37 Amps per square foot. The process will run for 20 to 120 minutes depending on the alloy used and desired coating thickness. This will produce a generally gray coating 0.0005 to 0.0045 thick with 50% buildup and 50% penetration.

IRRIDITE: A chemical conversion coating which is applied to aluminum to seal and protect the surface. It produces an oxide coating which prevents further oxidation of the surface, much as an anodize does, but at much lower cost. Yellow irridite is the standard finish since it provides visual proof of its presence. It is difficult in a batch-dip process like irriditing to have uniformity of color piece-to-piece. For that reason, some prefer clear irridite which only shows the color of the bare aluminum below. Anodizing, either clear or in colors, is much harder and more uniform than irridite but at greater cost.

BLACK OXIDE: Room temperature blackening method is used. Provides coating for parts that can't tolerate a build up. This coating provides minimal corrosion protection.