AText Reference Guide

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Alias Limited,
1 Stuart Road, Manor Park
Runcorn, Cheshire
WA7 1TS
United Kingdom
Telephone: +44 (0) 1928 579311
Fax: +44 (0) 1928 579389
Email: info@alias.ltd.uk

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AText listed by category and number order:

Click on an AText to access its information.

The Isometric Drawing Area

-201 - **E**
-202 - **N**
-203 - **W**
-204 - **S**
-205 - **EL +**
-206 - **EL -**
-207 - **-?NS**
-208 - **CONN. TO**
-209 - **CONT. ON**
-210 - **F**
-211 - **G**
-212 - **B**
-213 - **SPINDLE**
-214 - **MM**
-215 - **REDUCING FLANGE**
-216 - **OFFSET**
-217 - **MITRE**
-218 - **-LOBSTER**
-219 - **REINFORCED**
-220 - **- LEFT LOOSE**
-221 - **FFW**
-222 - **FALL**
-223 -(Normally blank)
-224 - **-:**
-225 -(Normally blank)
-226 - **-GRAD**
-227 - **PER M**
-228 - **PER FT**
-229 - **SCREWED END**
-230 - **VENT**
-231 - **-BEND**
-232 - **SPEC**
-233 - **C**
-236 - **S**
-237 - **"**
-238 - **-'**

-239 - **DRAIN**
-240 -(Normally blank)
-241 -(Normally blank)
-242 -(Normally blank)
-243 -(Normally blank)
-244 - **UP**
-245 - **DOWN**
-246 - **NORTH**
-247 - **SOUTH**
-248 - **EAST**
-249 -**WEST**
-275 - **SWEPT TEE**
-276 - **CONT. FROM**
-277 - **ORIFICE FLANGE**
-278 - **DIAL FACE**
-279 - **L**
-280 - **TAPPING**
-281 - **TAIL**
-282 - **WINDOW**
-283 - **FLAT**
-284 - **TEE BEND**
-285 -**RATING FLANGE**
-286 -(Normally blank)
-287 -**ORIENTATION DIRECTION**
-288 - **PIPE**
-298 - **TEE ELBOW**
-337 - **D BEND RADIUS**
-338 - **BEND RADIUS**
-346 - **GEARBOX ORIENTATION**
-349 - **PP**
-350 - **REDUCING ELBOW**
-356 - **U**
-357 - **B**
-358 - **W**
-362 - **END$ONE**
-388 - **TANGENTIAL CONNECTION**
-389 - **-OFFSET CONNECTION**
-390 - **FROM ? ORIGIN**
-391 - (Normally Blank)
-392 - **MULTIPLE**
-394 -**TOT**
-425 - **SEAL WELD**
-433 -(Normally blank)
-434 - **STUB IN**
-437 -(Normally blank)
-450 -**B.O.P.**
-451 - **TAPPING CONNECTION**

-452 - **UNACCEPTABLE SPLIT**
-454 - **CONNECTION ORIENTATION**
-455 -(Normally blank)
-456 - **SEE DETAIL ?**
-457 - **MITRE ?**
-458 - (Normally Blank)
-459 - **-?THK**
-469 - **REFERENCE POINT**
-470 - **SUPPORT LOCATION**
-477 - **-CUT OUT ?**
-460 - **BEAM$?**
-461 - **-COLUMN$?**
-462 - **?$BUILDING CL**
-463 - **CL EQUIPMENT$?**
-464 - **-CL PIPELINE$?**
-465 - **-?$FLOOR LEVEL**
-466 - **?$WALL**
-467 - **GRID LINE$?**
-468 - **?**
-471 - **-LOCATION-POINT?**
-475 -(Normally blank)
-476 -(Normally blank)
-498 - **-(**Normally blank)
-499 - **SHOP TEST WELD**
-501 - **-(**Normally blank)
-502 - **SUPPORT**
-512 - **TACK WELD**
-533 - **FI**
-534 - **RL**
-535 - **SU**
-536 - **VL**
-539 - **-.**
-541 - **_N**
-542 - **-_S**
-543 -(Normally blank)
-544 -(Normally blank)
-545 - **-/**
-885 - **Delimiter**

Specification Change Indication

-289 - **-MATL**
-290 - **-INSUL**
-291 - **TRACE**
-292 - **-PAINT**
-293 -(Normally blank)

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-294 -(Normally blank)
-295 -(Normally blank)
-296 -(Normally blank)
-297 -(Normally blank)

The Title Block/Drawing Frame Areas

-250 - **DATE**
-251 - **PROJECT NO.**
-252 - **BATCH REF**
-253 - **-PIPING SPEC**
-254 - **ISS**
-255 - **DRG**
-256 - **OF**
-257 - **-SPL**
-258 - **-JAN**
-259 - **-FEB**
-260 - **MAR**
-261 - **-APR**
-262 - **MAY**
-263 - **-JUN**
-264 - **-JUL**
-265 - **AUG**
-266 - **-SEP**
-267 - **-OCT**
-268 - **NOV**
-269 - **-DEC**
-270 - **-THERMAL INSULATION SPEC**
-271 - **TRACING SPEC**
-272 - **PAINTING SPEC**
-436 - **JACKET SPEC**

The Plotted Material And Cut Pipe List Heading Texts

-274 -(Normally blank)
-300 - **FABRICATION MATERIALS**
-301 - **PT**
-302 - **NO**
-303 - **-COMPONENT DESCRIPTION**
-304 - **-N.S.**
-305 - **-ITEM CODE**
-306 - **-QTY**
-307 - **PIPE**
-308 - **-FITTINGS**
-309 - **-FLANGES**

-310 - **ERECTION MATERIALS**
-311 - **GASKETS**
-312 - **BOLTS**
-313 - **-VALVES / IN-LINE ITEMS**
-314 - **-INSTRUMENTS**
-315 - **-SUPPORTS**
-316 - **PIPE SPOOLS**
-319 - **-CUT PIPE LENGTH**
-320 - **-PIECE**
-321 - **NO**
-322 - **-CUT**
-323 - **LENGTH**
-324 - **REMARKS**
-325 -(Normally blank)
-326 - **PLD BEND**
-327 - **LOOSE FLG**
-328 - **FF WELD**
-329 - **M**
-330 - **INS**
-331 - **MM**
-334 - **S**
-335 - - - - - - - - - - - - **WITH SPECIAL RATING FLANGE(S) (SEE ISO)**
-339 - - - - - - - - - - - - - - - - - - **MISCELLANEOUS COMPONENTS**
-340 - **-INDUCTION BEND ID**
-341 - **EQUIPMENT TRIM MATERIALS**
-342 - **NOZZLE REF -**
-343 - **CONTINUED**
-344 - **END CONNECTORS**
-345 - **AND**
-347 -(Normally blank)
-348 -(Normally blank)
-351 - **-FABRICATED (PULLED) BEND**
-352 - **WEIGHT**
-353 - **KGS**
-354 - **-LBS**
-355 - **-TOTAL WEIGHT-THIS DRG**
-356 - **U**
-357 - **B**
-358 - **W**
-359 -(Normally blank)
-362 - **END$ONE**
-363 - **END$TWO**
-364 - **ITEM$CODE**
-365 -(Normally blank)
-366 - **-SQ.CUT**
-367 - **BEVEL**
-368 - **SCREWED**

-369 - **SHAPED**
-370 - **-MITRED**
-371 - **- OFFSHORE MATERIALS**
-372 - **REMARKS**
-373 - **REM**
-374 - **- ANGLE**
-375 - **- WELDS**
-376 - **-FAB**
-377 - **- EREC**
-378 - **-OFF**
-379 - **TOTAL FABRICATION WEIGHT**
-380 - **TOTAL ERECTION WEIGHT**
-381 - **- TOTAL OFFSHORE WEIGHT**
-382 - **-TOTAL WEIGHT UNLISTED ITEMS**
-383 - *****
-384 - **- TANGENT+**
-385 - **- CUT/WELD**
-426 - **GROOVED**
-427 - **FLARED**
-428 - **SCREWED**
-431 - **SOCKET**
-472 - **No.?**
-473 - **OF**
-474 - **- ABOVE**
-500 - **-SHOP TEST**
-503 - **-SPOOL ID**
-514 - **REINFPAD**
-515 - **REINFORCEMENT PAD FOR @**
-537 -(Normally blank)
-538 -(Normally blank)
-540 -(Normally blank)

The Line Summary Area

-400 - **- TRACED$PIPE**
-401 - **- LAGGED$PIPE**
-402 - **PIPE$SUPPORT**
-403 - **- COMPN$JOINT**
-404 - **SCREWED$JOINT**
-405 - **SOCKET$WELD**
-406 - **- FIELD$WELD**
-407 - **- SHOP$WELD**
-408 - - - - - - - - - - - - - (User specified text on Drawing Frame)
-409 - - - - - - - - - - - - - (User specified text on Drawing Frame)
-410 - **[1] DENOTES PIPE SPOOL NO$**
- **1 DENOTES PARTS LIST NO**

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-411 - **SITE$CONNECTION**
-317 - **PIPE NS**
-318 - **CL LENGTH**
-360 - **-FT**
-361 - **FT-INS**
-386 - (Normally Blank)
-387 - (Normally Blank)

The Printed Material List

-332 - **-PAGE**
-333 - **PIPELINE REF**
-336 - **-SYSTEM REF**

The Weld Box Summary

-412 -
-413 -
-414 - **S**
-415 - **F**
-416 - **O**
-417 - **BW**
-418 - **SW**
-419 - **MW**
-420 - **-LUG**
-421 - **-SOF**
-422 - **SOB**
-423 - **-LET**
-424 - **SLW**
-438 - **-SEAM**
-504 -(Normally blank)
-507 - **-RPD**
-508 - **-LF**
-509 - **-L4**
-510 -(Normally blank)
-511 - **-PAD**
-513 - **TW**
-516 - **-TRN**
-517 - **5**
-518 - **1**
-519 - **EB**
-520 - **RL**
-521 - **FW**
-522 -(Normally blank)
-523 -(Normally blank)

-524 -(Normally blank)
-525 -(Normally blank)
-526 -(Normally blank)
-527 -(Normally blank)
-528 -(Normally blank)
-529 -(Normally blank)
-530 -(Normally blank)
-531 -(Normally blank)
-532 -(Normally blank)

Flat Spools and Flange Rotation

-481 - **E**
-482 - **N**
-483 - **W**
-484 - **S**
-485 - **U**
-486 - **D**
-487 - **-*** REFERENCE FLAT *****
-488 - **-*** REFERENCE SPINDLE *****
-489 - ***** REFERENCE SUPPORT *****
-490 - **-*** REFERENCE BRANCH *****
-491 - ***** REFERENCE WINDOW *****
-492 - **-FLAT DIRECTION**
-493 - **-SPINDLE DIRECTION**
-494 - **SUPPORT DIRECTION**
-495 - **-BRANCH DIRECTION**
-496 - **WINDOW DIRECTION**
-497 - **FLANGE ROTATION ?**

The COMPIPE Material Control Links

-299 - **-/**
-453 - **-MM-**

SPOOLGEN (FFISYS) Screen Display

-800 - **-BEND**
-801 - **-ELBOW**
-802 - **OLET**
-803 - **-TEE**
-804 - **CROSS**
-805 - **REDUCER**
-806 - **- TEE REDUCER**
-807 - **REDUCING FLANGE**

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-808	TEE BEND/ELBOW
-809	ANGLE VALVE
-810	3 WAY VALVE
-811	4 WAY VALVE
-812	INSTRUMENT
-813	MISC COMPONENT
-814	PIPE (TUBE
-815	FIXED PIPE
-816	PIPE BLOCK
-817	FLANGE
-818	LJSE FLANGE
-819	BLIND FLANGE
-820	CONNECTOR
-821	BACKING NUT
-822	CLAMP
-823	MISC HYGENIC COMPONENT
-824	CAP
-825	COUPLING
-826	UNION
-827	VALVE
-828	TRAP
-829	VENT
-830	FILTER
-831	SUPPORT
-832	INSTRUMENT TEE
-833	WELD
-834	NONE
-835	(Not Used)
-836	(Not Used)
-837	(Not Used)
-838	(Not Used)
-839	(Not Used)
-840	Changed to Bend
-841	Flange set to Loose
-842	Detail Sketch ?
-843	Support changed to Fabrication
-844	Support changed to Erection
-845	Support changed to Offshore
-846	Tack Weld
-847	Support(s) added
-848	Automatic Weld
-849	Shop Test
-850	REDUCING-CONCENTRIC
-851	REDUCING ECCENTRIC
-852	STUB/BACKING PAIR
-853	SCREWED
-854	SLIP-ON J TYPE

-855 - **SLIP-ON**
-856 - **-SOCKET-WELD**
-857 - **WELD-NECK**
-858 - **SLIP-ON ORIFICE**
-859 - **WELD-NECK ORIFICE**
-860 - **- LAP-JOINT RING**
-861 - **- LAP-JOINT STUB END**
-862 - **- UNKNOWN**
-863 - **- Material added**
-864 - **- General Information Note - ?**
-865 - **-Specific Information Note - ?**
-866 - **- Weld deleted**
-867 - **- Support Weld(s) deleted**
-868 - **- Spool Name deleted**
-869 - **-Flow Arrow deleted**
-870 - **- Message deleted**
-871 - **- -Detail Sketch deleted**
-872 - **- Information Note deleted**
-873 - **-Additional Material deleted**
-874 - **- Loose Flange un-set**
-875 - **- -Location point added**
-876 - **- Location point deleted**
-877 - **FLOOR/WALL PENETRATION**
-878 - **- FLOW ARROW**
-879 - **- INSULATION SYMBOL**
-880 - **MESSAGE**
-881 - **Drawing Identifier deleted**
-882 - **Default Start**
-883 - **- Pipeline Start**
-884 - **Default Bypass Closure**
-885 - **--**
-886 - **Bypass Closure**
-887 - **Pipe Support added**
-888 - **-Pipe Support deleted**
-889 - **Properties changed**
-890 - **Coupling Added**
-891 - **-Coupling Deleted**
-892 - **- Pipe Support Changed**

Reference Plane System

-443 - **^ + ?**
-444 - **-^ - ?**
-445 - **^ + ?**
-446 - **-^ - ?**
-447 - **^ + ?**

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AText

What is AText?

AText is an abbreviation for Alternative Text, a powerful ISOGEN feature that enables **any** text on the isometric drawing to be easily changed or removed.

How It Works - The Basics

The feature operates by assigning a unique identification number to each standard text string, this number is then simply referred to whenever a change needs to be done to the text string that the number represents. By definition, a standard text string may either be a single character, a single word, or a group of words. Furthermore, some ATexts are, by default, set to an all blank word.

The total number of separate standard text strings held by the program in this way is in excess of 300.

What AText Can Be Used For

AText allows Users to substitute their own text terminology or language in place of the standard ISOGEN words on the isometric.

To effect a word change, you don't have to replace all the standard AText, as little as just one word may be changed if that's all is needed.

Although the AText feature has a considerable degree of built-in flexibility, users must exercise a certain amount of care when defining their own words, particularly in respect of word lengths. As a general rule, newly defined words or word strings should be about equal in length or shorter than the text that is being replaced. (Obvious exceptions to this are the cases of the single line headings in the Material List region). In this respect, the user takes full responsibility for word definition and ISOGEN will **not** warn you in cases where words are too long and hence cannot be accommodated in the standard space provided on the isometric.

Badly designed AText can lead to undesirable results such as over-writing or incorrectly positioned text.

Foreign Language Use

AText can be of particular benefit to foreign language Users who wish to produce isometrics containing text in their native tongue. However there are restrictions governing which characters are permissible. For details, see the following paragraph dealing with usable characters.

The Usable Character Set

There is a requirement that only standard English and certain special purpose characters, as listed here, are used in AText definitions,.

- Upper or lower case letters in the range A to Z.
- Numeric characters in the range 0 to 9 inclusive.
- A blank space character.
- The special purpose symbols * + - . , : [ ] ( ) # ' < > = | & %

Other foreign language characters as used in such alphabets as Cyrillic, Greek, or Chinese are excluded, as are specially accentuated characters, for example, à, á, â, etc. as used in certain European languages.

Special Characters

i) The Dollar sign ($)

This special character, that is used in ISOGEN to force a New Line in regular isometric Message Text can also be used with ATexts. The recommendation is that, when the $ character is used in ATexts, Users should accept full responsibility and carefully check the output results of each occurrence.

ii) The Question mark (?)

Has two different uses, as follows:-

- Can be used in AText's -210, -211 and -212 to suppress the plotting of the single characters normally associated with these AText's, without switching off their associated facility, as would normally happen when an AText is set to blank. For example, setting Atext **-210 ?** just causes the F that would normally be plotted to be suppressed. It does **not** completely suppress the plotting of the Flange Material List Part Number as would normally happen when an Atext item is set to blank. This can be particularly advantageous on Spool isometrics.
- The ? character is also used in some special AText's at points where the program dynamically edits in information. E.g. By default, AText -456 is set to **DETAIL ?**. With this AText the program edits in either a letter or a

number (depending upon which system the user has specified) at the position of the ? character.

iii) The 'at' sign (@)

- This character may be used to 'pad out' an AText string with trailing blanks. This would be done so that if required, other text, following the AText, would have a series a blanks between it and the AText.

AText And The Drawing Frame Symbols

The AText feature goes further than just controlling text characters. The standard symbols appearing in the Line Summary area across the bottom of the standard ISOGEN Drawing Frame, viz. for Shop Weld, Field Weld, etc. through to Traced Pipe, may all be suppressed when they are not required by setting their associated ATexts to blank.

Composite Text Messages

Composite text messages are made up from more than one text item and the composition is done by ISOGEN automatically. Such messages may be composed in either of the following two ways:-

- By combining two or more related ATexts, or
- By combining AText and an associated design database attribute value.

Generally, in those cases where AText operates together with design database attribute information to form a composite message, setting the AText part to blank to suppress the plotting of it causes suppression of the attribute text also.

For example, if the composite message **BATCH REF: 12/100A/C** in the Title Block area needs to be completely suppressed, then setting AText -252 which contains the words **BATCH REF** to blank will cause both this and the attribute part, **12/100A/C** not to be plotted.

Identification Number Format

Identification numbers are always negative and hence must be preceded by a minus sign, for example, the AText identification number -249 on **page 18** represents the default word WEST which is used in the main Isometric Drawing Area.

Grouping Of Text

All the AText listings are logically grouped into the following isometric drawing regions:-

- The Main Isometric Drawing Area.

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- Plotted Material List and Cut List.
- Specification Change indication.
- Title Block / Drawing Frame.
- Line Summary Area.
- Printed Material List.
- Weld Box Summary.
- Flat Spools and Flange Rotation text.
- Compipe Material Control link.
- SPOOLGEN (FFISYS) Screen Display.

To enable fast look-up, the following pages list all the ATexts (together with their associated identification numbers) sectionalised on the above grouping basis.

Examples

Some examples of standard AText are as follows:-

- The Material List heading **ERECTION MATERIALS.**
- The isometric Connection Messages **CONN. TO** and **CONT. ON** in the main drawing area.
- The Headings **BATCH REF** and **PIPING SPEC** in the Title Block Area.

All these are default AText words that are 'programmed in' by ISOGEN but which may be 're-programmed' by the user to change them if required in the way described below.

Example 1. ERECTION MATERIALS

This can be found on **page 27** as AText identification number -310. To change the heading ERECTION MATERIALS to CONSTRUCTION MATERIALS, the entry: **-310 CONSTRUCTION MATERIALS**

would have to appear in the appropriate data input file.

Example 2. CONN. TO

This is an example of a composite Message that is used at locations where pipelines are connected to Equipment Nozzles. The AText for it can be found on **page 16** against identification number -208.

To change the message CONN. TO to JOIN TO the entry: **-208 JOIN TO**

would have to appear in the appropriate data input file. Information regarding the 'joined to' component, that is, the Nozzle name as extracted from the design database, is automatically appended to the AText by ISOGEN to form a composite message. E.g. JOIN TO D45-NZ12.

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Example 3. BATCH REF

This is a another composite message example which can be found on **page 25** as AText identification number -252. The message is used to convey plant Zone or Area information in the Title Block area of the isometric where the contents of the BATCH (AREA) type record in the Pipeline Input Data File is automatically appended by ISOGEN. E.g. **BATCH REF : AR-A/TF/N12.**

To remove the Batch Reference entry from the isometric, set the AText entry in the IDF to blank, thus: **-252**

This would have the effect of removing the entire composite message from the isometric, that is, both the AText BATCH REF : part and the following design database attribute that holds the batch reference information.

The Isometric Drawing Area

-201	**E**	Denotes East at east co-ordinates.
-202	**N**	Denotes North at north co-ordinates.
-203	**W**	Denotes West at west co-ordinates.
-204	**S**	Denotes South at south co-ordinates.
-205	**EL +**	Denotes a positive Elevation at elevation co-ordinates.
-206	**EL -**	Denotes a negative Elevation at elevation co-ordinates.
-207	**?NS**	Denotes the pipe Nominal Size. By setting the AText to blank the nominal size message will be suppressed. Using a? symbol will determine the format used for outputting the nominal size message.
-208	**CONN. TO**	Denotes CONNected TO - where a Pipeline/Branch end is connected to a Nozzle.
-209	**CONT. ON**	Denotes 'CONTinued ON' - at the point where a Pipeline/Branch end is continued onto another Pipeline. It is used in conjunction with END-CONNECTION type record. Is also used with **AText -255** to create a 'CONT. ON DRG 2' type message when a pipeline is split into multiple drawings. (Isometric drawing area and Material List overflow).
-210	**F**	Denotes Flange, the letter used with the material list cross reference pointer for flanges.
-211	**G**	Denotes Gaskets, the letter used with the material list cross reference pointer for gaskets.
-212	**B**	Denotes Bolts, the letter used with the material list cross reference pointer for bolts.

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-213	**SPINDLE**	Is used to indicate the direction of an Operating Spindle on a Valve when it is **not** pointing in a primary direction.
-214	**MM**	Denotes Millimetres. Used with arrowed dimensions on Angle and Multi-way Valves to indicate leg length.
-215	**REDUCING FLANGE**	An Identification message that points at a Reducing Flange.
-216	**OFFSET**	This message is used where a dimensional offset occurs. E.g. Eccentric Reducer, Offset Reducing Flange, all forms of Offset Blocks. User can use a '?' symbol to determine format used for outputting the offset messages. By setting this AText to 'blank' the offset message will be suppressed.
-217	**MITRE**	This message is used on Mitred Bends. It is used in conjunction with **AText -231** 'BEND').
-218	**LOBSTER**	This message is used on Lobster Back Bends. (It is used in conjunction with **AText -231** 'BEND').
-219	**REINFORCED**	An identification message that points to a Reinforced Tee or Cross when the symbol key is TERF or CRRF and no Reinforcement Pad component is called for.
-220	**LEFT LOOSE**	A distinguishing message that points to a Flange where the LOOSE indicator is set.
-221	**FFW**	Distinguishing message that points to a Field Fit Weld.
-222	**FALL**	Used in conjunction with the Fall symbol to denote a FALLing line. User can use a '?' symbol to determine the format used for outputting the falling line messages By setting this AText to 'blank' the falling line message will now be suppressed but the fall indication symbol will still be shown.
-223	(Normally blank)	Produces a program generated degree symbol (°) which is output at all angle indicators requiring a degree symbol (bends, Falls, etc.).
-224	**:**	This symbol is used for Falling lines specified with a ratio. E.g. 1:10.
-225	(Normally blank)	Produces a program generated % symbol used on Falling pipelines specified with a percentage indication.
-226	**GRAD**	Is used where a Falling line is specified in Gradiens.
-227	**PER M**	Is used where a Falling line is specified as an incline in Metric units. (i.e. Millimetres per Metre).
-228	**PER FT**	Used where a Falling line is specified as an incline in Imperial units. (i.e. Inches per Foot).
-229	**SCREWED END**	The message points to a pipe end that has been set to

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		Screwed in the Pipeline Input Data File.
-230	**VENT**	The message points to a Vent position at any open ended pipe. It is used in conjunction with an END-POSITION-VENT type record.
-231	**BEND**	Used in conjunction with **AText -217** and **AText -218** to identify Mitre and Lobster back type Bends.
-232	**SPEC**	Identification message points to any place in the pipe where the Piping Specification changes. The name of the new Specification is automatically indicated.
-233	**C**	Identifies a Connector as part of a Material List cross reference. e.g. C13 in a box.
-236	**S**	Identifies a Support as part of a Material List cross reference. e.g. S22 in a box.
-237	**"**	Is the Inch sign indicator used in Imperial Dimensions, Co-ordinates and Nominal Size outputs.
-238	**'**	Is the Feet sign indicator used in Imperial Dimensions and Co-ordinates.
-239	**DRAIN**	The message points to a Drain position any Open ended pipe. It is used in conjunction with an END-POSITION-DRAIN type record
-240	(Normally blank)	This AText is blank by default but can be used to produce a message at any Open ended pipe. It is used in conjunction with an END-POSITION-OPEN type record.
-241	(Normally blank)	This AText is blank by default but can be used to produce a message at any Closed ended pipe. It is used in conjunction with an END-POSITION-CLOSED type record.
-242	(Normally blank)	This AText is blank by default but can be used to produce a message at any miscellaneous pipe end. It is used in conjunction with an END-POSITION-NULL type record.
-243	(Normally blank)	This AText has no default text but if it is set to a word (E.g. FLAT) by the user, then that text will act as a trigger to output the flat direction of eccentric reducers that have their flat side pointing in a primary direction. (Is used in conjunction with **ATexts -244** to **-249** inclusive).

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The following six ATexts are used to output directions in conjunction with other ATexts on items that carry a direction setting on the component record in the Pipeline Input Data File.

-244 **UP**
-245 **DOWN**
-246 **NORTH**
-247 **SOUTH**
-248 **EAST**
-249 **WEST**

Used in conjunction with Atexts **-243**, **-278**, **-280**, **-281** and **-282** to append a primary direction as part of a composite message.

-275 **SWEPT TEE** This message points to a Tee whose symbol key starts with the characters TS.

-276 **CONT. FROM** Denotes CONTinued FROM. This message is plotted when a pipeline is split onto two or more drawings. i.e. CONT. FROM DRG 1. (The text - DRG comes from **AText -255**).

-277 **ORIFICE FLANGE**

This text points to Orifice Flanges.

-278 **DIAL FACE** This text points to Instruments Dials whose symbol key starts with the characters ID and is followed by a relevant direction letter. See following note ++.

-279 **L** Denotes Lap Joint Stub End, the letter used with the Material List cross reference pointer for LJSE's.

-280 **TAPPING** This text points to Orifice Plates and is followed by a relevant direction letter. See following note ++.

-281 **TAIL** This text points to Spectacle Blinds and Slip Plates and is followed a by relevant direction letter. See following note ++.

-282 **WINDOW** This text points to a Site Glass and is followed by a relevant direction letter. See following note ++.

-283 **FLAT** Used to identify non primary flat directions on Eccentric Reducers. The contents of this AText will be output in front of the contents of a DIRECTION record containing the Flat skew direction

AText Numbers **-243**, **-278**, **-280**, **-281** and **-282**are only output if a primary direction is set in the component record in the Pipeline Input Data File.

The appropriate direction (as defined by ATexts -244 to -249) will be appended to the specific fitting text to make a composite message. (E.g. **DIAL FACE WEST**). Alternatively the content of any DIRECTION (Compound Directions) record could be appended.

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-284 **TEE BEND** This text is plotted at Bends that have an off-line leg.

-285 **RATING FLANGE** This text is a part of a facility that provides an extra message at a Flange that has a different pressure rating to standard. This is achieved by giving the mating Gasket a symbol key of the required rating (E.g. 300#) in the Intermediate Data File (IDF). The facility is only used on Fixed Length piping.

-286 (Normally blank) This AText is blank by default, but if set it will output the text as a message on screwed Erection (Construction) fittings.

-287 **ORIENTATION DIRECTION** Is used to identify the direction of skewed branches in cases where skew box indication has been suppressed. A program generated direction will be appended to this text to form a complete message.

-288 **PIPE** Is used on System Isometrics to denote the position(s) of a change in the Pipeline Reference.

-298 **TEE ELBOW** Is used to identify a Tee Elbow fitting.

-337 **D BEND RADIUS** Is used to output the text D BEND RADIUS on individual Pulled Bends where the bend radius is expressed in terms of a number of pipe diameters. The bend radius value is extracted from a BEND-RADIUS type record in the Pipeline Input Data File and used as a prefix to this AText.

-338 **BEND RADIUS** Is used to output the text BEND RADIUS on individual Pulled Bends where the bend radius is expressed in terms of the dimensional units in use. The bend radius value is extracted from a BEND-RADIUS type record in the Pipeline Input Data File and used as a prefix to this AText.

-346 **GEARBOX ORIENTATION** Is used in conjunction with directional information taken from a GEARBOX type record in the Pipeline Input Data File and which is appended to this AText.

-349 **PP** Is used to indicate Personal Protection type insulation on Insulation Indication symbols having the symbol key 'INPP'.

-350 **REDUCING ELBOW** Is used to indicate a REDUCING ELBOW on fittings having the symbol key ER**.

-356 **U** Special ATEXT used only to identify Special type Pulled Bends. Is used both on the isometric area and on the Material List.

-357 **B** Special ATEXT used only to identify Special type Erection Welds. Is used both on the isometric area and on the Material List.

-358 **W** Special ATEXT used only to identify Special type Fabrication Welds. Is used both on the isometric area

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and on the Material List.

-362 **END$ONE** Used in special circumstances when it is necessary to identify a specific end on a Spool isometric. (It also appears in the Cut Pipe List section for use as a Column Heading on the Cut Pipe List).

-388 **TANGENTIAL CONNECTION** Used to identify Tangential / Offset connections. In cases where the Tapping Point method is used, the existing TAPPING CONNECTION (AText No. -451) message will not be output.

-389 **OFFSET CONNECTION** Used to identify Tangential / Offset connections. In cases where the Tapping Point method is used, the existing TAPPING CONNECTION (AText No. -451) message will not be output.

-390 **FROM ? ORIGIN** Used to identify Tangential / Offset connections. In cases where the Tapping Point method is used, the existing TAPPING CONNECTION (AText No. -451) message will not be output.

-391 (Normally Blank) Used to identify Tangential / Offset connections. In cases where the Tapping Point method is used, the existing TAPPING CONNECTION (AText No. -451) message will not be output.

-392 **MULTIPLE** Used where multiple component attributes are present for a particular material entry.

-394 **TOT** Used to distinguish an accumulated pipe sub-total, from an individual pipe entry.

-425 **SEAL WELD** Used to indicate the weld type for Seal Welds on the isometric drawing.

-433 (Normally blank) Distinguishing message that points to a User positioned set on connections.

434 **STUB IN** Distinguishing message that points to a User positioned set in connections.

-243 (Normally blank) This AText has no default text but if it is set to a word (E.g. FLAT) by the user, then that text will act as a trigger to output the flat direction of eccentric reducers that have their flat side pointing in a primary direction. (Is used in conjunction with **ATexts -244** to **-249** nclusive).

-437 (Normally blank) Used to allow metric dimensions to have their dimensional units output on the isometric drawing.

-451 **TAPPING CONNECTION** Is output along with Co-ordinate values at the Tapping Point on a user defined fitting. Requires **Option Switch 122** to be set to 1 for Tapping Co-ordinates output on the isometric drawing.

-452 **UNACCEPTABLE SPLIT** Indicates that an unacceptable drawing split point has been found in Tube. When used, the

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message is output in the top LH corner of each affected drawing.

-454 **CONNECTION ORIENTATION** Used at un-developed Set-On Tees and Olets (which have no Branch leg and are indicated in dotted form on the pipeline) where the intended branch connection is in a skewed direction. A program generated direction word will be appended to this text to form a composite message.

-455 (Normally blank) Used at Flange positions in vertical pipe legs to optionally indicate the elevation co-ordinate of the flange connection face. The special characters ? and $ may be combined with this AText to allow the user to control the final form of the output text. ? is used to cause the insertion of elevation value and $ forces a new line of text. For example, a setting of ?$FLANGE FACE would produce:-
EL +22613 FLANGE FACE
Note that here, the EL characters are obtained by the program also using **AText -205** automatically.

-456 **SEE DETAIL ?** Used to provide a cross-reference message for Detail Sketches. This AText appears on the drawing part of the isometric. The Sketch identifying number or letter is edited in by the program at the ? position.

-457 **MITRE ?** Used to identify Mitre Welds. The program edits in the Mitre angle into the text string at the ? position which may be positioned anywhere in the string.

-458 (Normally Blank) Used to indicate the Nominal Size for Metric Bore Units e.g. if set to mm the output would be 32mm NS, if set to Blank, 32NS is output.

-459 **?THK** Used to show thickness of a Penetration Plate on the drawing.

-469 **REFERENCE POINT** Used to identify a Reference Dimension Item co- ordinates.

-470 **SUPPORT LOCATION** Used to identify Pipe Support co-ordinates.

-477 **CUT OUT ?** Used on the drawing to show the location of where material should be removed.

The following nine ATexts are all used for the identification of external Reference Items when using the Reference Dimension facility. Any associated text elements will be automatically pre-fixed or appended, as appropriate, to the specified AText element.

In all these ATexts, the $ character causes a new line to be plotted and a ? character is where the program edits in the element name (from any -37, 70, 71 or 72 type record) to derive the full text string.

-460 **BEAM$?** Identifies horizontal Steel-work element (SKEY HST*).

-461 **COLUMN$?** Identifies Vertical Steel-work element (SKEY VST*).

-462	**?$BUILDING CL**	Identifies centre-line of Building (SKEY BLD*).
-463	**CL EQUIPMENT$?**	Identifies centre-line of Equipment (SKEY EQU*).
-464	**CL PIPELINE$?**	Identifies centre-line of Pipeline (SKEY PIP*).
-465	**?$FLOOR LEVEL**	Identifies specified Floor Level (SKEY FLR*).
-466	**?$WALL**	Identifies specified Wall position (SKEY WAL*).
-467	**GRID LINE$?**	Identifies Project Grid Line (SKEY GRD*).
-468	**?**	Used for miscellaneous user defined elements (SKEY XXX*). The default ? character causes any identification name associated with the miscellaneous reference to be used when no other AText setting is made.
-471	**LOCATION-POINT?**	Is used to indicate a Location Point position on the plotted isometric. If more than one is included on any single isometric, a simple ID number is generated and output in the position indicated by the ?
-475	(Normally blank)	Used in SPOOLGEN - Probing module. If set will be used to indicate the position of any Location Points that are included in an incoming Pipeline Data File.
-476	(Normally blank)	Used in SPOOLGEN to trigger the indication of drawing identifiers.
-498	**(**Normally blank)	If set by User, the text points to a Site Weld.
-499	**SHOP TEST WELD**	Points to either a Site Weld or a Field Fit Weld that requires a Shop Test Weld to be performed at the same location. (That is, Welds with the Key WSST or WFST).
-501	**(**Normally blank)	Used to point to an Offshore Weld If Set By User.
-502	**SUPPORT**	Used to indicate the orientation of a Pipe Support. Content of associated DIRECTION record (containing compound directions for Skewed Support) is appended to AText.
-512	**TACK WELD**	Distinguishing message that points to a User positioned Tack Weld.
-533	**FI**	Used to identify Field Items on an Erection type isometric whenever a new style Operations Box is requested (**O.S. 53** Position 2 set to 2).
-534	**RL**	Used to identify a Random Length on an Erection type isometric whenever a new style Operations Box is requested (**O.S. 53** Position 2 set to 2).
-535	**SU**	Used to identify a Pipe Support on an Erection type isometric whenever a new style Operations Box is requested (**O.S. 53** Position 2 set to 2).
-536	**VL**	Used to identify a Valve on an Erection type isometric whenever a new style Operations Box is requested

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		(**O.S. 53** Position 2 set to 2).
-539	**.**	Used as a delimiter between the Material List Cross-Reference Identifier and the Suffix that is added as a unique Component Identifier in the new style of Identifier (i.e. 3.1, 3.2, 3.3 as opposed to 3).
-541	**_N**	Used as delimiter/identifier in General Note names.
-542	**_S**	Used as delimiter/identifier in General Note names.
-543	(Normally blank)	Used in SPOOLGEN Probing module. If set will be used to indicate the position of any Special Note names that are included in an incoming Pipeline Data File.
-544	(Normally blank)	Used in SPOOLGEN Probing module. If set will be used to indicate the position of any Additional Materials that are included in an incoming Pipeline Data File.
-545	***/***	Used as a separator between Part Numbers when outputting dual numbers for associated Additional Material identification on the plotted iso.
-885	**-**	FFISYS atext for FF isometric continuation message delimiter.

Specification Change Indication

The following ATexts are used for the indication of Specification Changes on the isometric drawing:-

-289	**MATL**	Used to indicate a Piping Material Specification. change. The content of the PIPING-SPEC type record in the Pipeline Input Data File is appended to the AText to form a composite message.
-290	**INSUL**	Used to indicate an Insulation Specification change. The content of the INSULATION-SPEC type record in the Pipeline Input Data File is appended to the AText to form a composite message.
-291	**TRACE**	Used to indicate a Tracing Specification change. The content of the TRACING-SPEC type record in the Pipeline Input Data File is appended to the AText to form a composite message.
-292	**PAINT**	Used to indicate a PAINTING Specification change. The content of the PAINTING-SPEC type record in the Pipeline Input Data File is appended to the AText to form a composite message.

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-293 (Normally blank) Reserved for User defined AText. The contents of a MISC-SPEC1 type record in the Pipeline Input Data File is appended to the AText to form a composite message.

-294 (Normally blank) Reserved for User defined AText. The contents of a MISC-SPEC2 type record in the Pipeline Input Data File is appended to the AText to form a composite message.

-295 (Normally blank) Reserved for User defined AText. The contents of a MISC-SPEC3 type record in the Pipeline Input Data File is appended to the AText to form a composite message.

-296 (Normally blank) Reserved for user defined AText. The contents of a MISC-SPEC4 type record in the Pipeline Input Data File is appended to the AText to form a composite message.

-297 (Normally blank) Reserved for user defined AText. The contents of a MISC-SPEC5 type record in the Pipeline Input Data File is appended to the AText to form a composite message.

The Title Block/Drawing Frame Areas

-250 **DATE** The Date is taken from the DATE type record in the Pipeline Input Data File and automatically appended in the required format (UK, EUR or USA) to the AText.

If the Date format is set to UK (see Option Switch 6 for details) this AText also uses ATexts **-258**, **-259**, **-260**, **-261**, **-262**, **-263**, **-264**, **-265**, **-266**, **-267**, **-268** and **-269** to form the month part of the date output text.

-251 **PROJECT NO.** This is used in the Title Block if the Project Number has been set in a PROJECT-IDENTIFIER type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

-252 **BATCH REF** This is used in the Title Block area if a Batch Reference has been set in a BATCH type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

-253 **PIPING SPEC** Used in the Title Block if a Piping Specification has been set in a PIPING-SPEC type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

-254 **ISS** Used in the Title Block if an Issue (also know as Revision) identifier has been set in a REVISION type record in the Pipeline Input Data File. The content of this

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record is appended to the AText to form a composite message.

-255 **DRG** Used in conjunction with **AText -256** to generate a drawing identifier of the form - DRG n OF n - in cases where a pipeline is split into multiple isometrics.

This AText is used in conjunction with **AText -209** and **AText -276** to form a composite message.

-256 **OF** Used in conjunction with **AText -255**.

-257 **SPL** Used on spool isometric drawings for the identification of individual spool pieces. A program generated Spool Number is appended to the AText to form a composite message. This AText is not used if either a Spool Prefix (SPOOL-PREFIX type record) or Spool Identifiers (SPOOL-IDENTIFIER type records) are included in the Pipeline Input Data File.

-258 **JAN** Used in conjunction with **AText -250**.

-259 **FEB** Used in conjunction with **AText -250**.

-260 **MAR** Used in conjunction with **AText -250**.

-261 **APR** Used in conjunction with **AText -250**.

-262 **MAY** Used in conjunction with **AText -250**.

-263 **JUN** Used in conjunction with **AText -250**.

-264 **JUL** Used in conjunction with **AText -250**.

-265 **AUG** Used in conjunction with **AText -250**.

-266 **SEP** Used in conjunction with **AText -250**.

-267 **OCT** Used in conjunction with **AText -250**.

-268 **NOV** Used in conjunction with **AText -250**.

-269 **DEC** Used in conjunction with **AText -250**.

-270 **THERMAL INSULATION SPEC** Used in the Title Block if an Insulation Specification identifier has been set in a INSULATION-SPEC record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

-271 **TRACING SPEC** Used in the title block if a Tracing Specification identifier has been set in a TRACING-SPEC type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

-272 **PAINTING SPEC** Used in the Title Block if a Painting Specification identifier has been set in a PAINTING-SPEC type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a

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composite message.

-436 **JACKET SPEC** Used in the Title Block if a Jacket Specification identifier has been set in a JACKET-SPEC type record in the Pipeline Input Data File. The content of this record is appended to the AText to form a composite message.

The Plotted Material And Cut Pipe List Heading Texts

-274 (Normally blank) If set will be used as a separator between the Pipeline Reference and the Spool Identifier in the Spool isometric drawing identifier.

-300 **FABRICATION MATERIALS** Is the category heading under which components required for 'SHOP' Fabrication are listed.

-301 **PT** Is the Part Number heading used in conjunction with **AText -302** to form a composite message.

-302 **NO** Used in conjunction with **AText -301** to form a composite message.

-303 **COMPONENT DESCRIPTION** Is the heading in the Material Listing under which Components are described according to their catalogue component description.

-304 **N.S.** Is the heading under which the Nominal Size of each item is listed. Is used in conjunction with **AText -330** or **AText -331** to form a composite message.

-305 **ITEM CODE** Is the heading under which Component Identification Codes are listed.

-306 **QTY** Is the heading under which the Required Quantities are listed.

-307 **PIPE** Is the group sub-heading under which Pipe is listed.

-308 **FITTINGS** Is the group sub-heading under which Pipe Fittings are listed. E.g. elbows, tees, etc.

-309 **FLANGES** Is the group sub-heading under which all Flanges are listed.

-310 **ERECTION MATERIALS** Is the category heading under which components required for 'SITE' Erection (i.e. Construction) are listed.

-311 **GASKETS** Is the group sub-heading under which all Gaskets are listed

-312 **BOLTS** Is the group sub-heading under which all Bolts are

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listed.

-313 **VALVES / IN-LINE ITEMS** Is the group sub-heading under which all Valves and In-line Items are listed.

-314 **INSTRUMENTS** Is the group sub-heading under which all Instruments are listed.

-315 **SUPPORTS** Is the group sub-heading under which all Supports are listed.

-316 **PIPE SPOOLS** Is the sub-heading under which all Spool Numbers are listed.

-319 **CUT PIPE LENGTH** Is the heading under which all the Cut Pipe Lengths are listed.

-320 **PIECE** Is the sub-heading to **AText -319** under which the Cut Pipe piece numbers are listed. This AText is used in conjunction with **AText -321** to form a composite heading.

-321 **NO** Used in conjunction with **AText -320** to form a composite heading.

-322 **CUT** Is the sub-heading to **AText -319** under which the actual Cut Pipe Lengths are listed. This AText is used in conjunction with **AText -323** to form a composite heading.

-323 **LENGTH** Used in conjunction with **AText -322** to form a composite heading.

-324 **REMARKS** Is the sub-heading to **AText -319** under which one of the ATexts **-326**, **-327**, **-328**, or **-500** if applicable, will be listed.

-325 (Normally blank) Used for Spool Number separator on the Material List.

-326 **PLD BEND** Used for a Pulled Bend remark which will be listed under **AText -324** if a Cut Pipe Length contains a Pulled Bend.

-327 **LOOSE FLG** Is a remark which will be listed under **AText -324** if a Cut Pipe Length has a Loose Flange requirement.

-328 **FF WELD** Is the Field Fit Weld remark which will be listed under **AText -324** if a Cut Pipe Length contains a Field Fit Weld.

-329 **M** Used to denote lengths of Pipe are in Metres. Also used to indicate unit type 'Metres' in Centre-Line Length Summary.

-330 **INS** Used to denote Nominal Sizes are in Inches. It is used in conjunction with **AText -304** and **AText -317**.

-331 **MM** Denotes the Nominal Sizes are in Millimetres. Also used to indicate unit type 'Millimetres' in Centre-Line Length Summary. It is used in conjunction with **AText -**

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304 and **AText -317**.

-334 **S** Is used only on Fixed Length Piping. The contents of this AText is appended to the item code to form a composite code when one or more ends of the Fixed Length spool has a special flange.

-335 **WITH SPECIAL RATING FLANGE(S) (SEE ISO)** Is used only on Fixed Length piping. The contents of the AText are appended to the item description to form a composite message. Is used whenever **AText -334** is used.

-339 **MISCELLANEOUS COMPONENTS** Is the group sub-heading under which all non-categorised components are listed.

-340 **INDUCTION BEND ID -** Used to identify pipe required in the fabrication of Induction Bends. The Induction Bend tag is appended to the AText to form a complete text string.

-341 **EQUIPMENT TRIM MATERIALS** Is the sub-heading under which all Equipment Trim materials are listed.

-342 **NOZZLE REF -** Is the sub-heading under which all materials associated with an individual Nozzle are listed. The content of the related NOZZLE-REFERENCE is appended to the AText to form a complete text string. Used on Equipment Trim Drawings only.

-343 **CONTINUED** Used with **AText -342** to identify situations where the listing of components for a Nozzle is being continued from a previous drawing. Used on Equipment Trim Drawings only.

-344 **END CONNECTORS** Is the group sub-heading under which all materials for End Connectors for hygienic type piping are listed (liners, nuts, clamps, etc.).

-345 **AND** Used with **AText -342** to form a sub-heading under which all components associated with interconnected Nozzles are output on the Material List for an Equipment Trim drawing. The resultant heading would be of the form:- NOZZLE REF - N22 AND N23.

-347 (Normally blank) This has no default AText but is available as an alternative to the AText used when generating a Material List overflow message at the bottom of the master drawing Material List (an **AText -209** and **AText -255** combination). Any AText set by the user will have a program generated cross reference drawing number appended to it to form a composite message.

-348 (Normally blank) This has no default AText but is available as an alternative to the AText used when generating a Material List overflow message at the top of overflow Material List drawings (**AText -276** and **AText -255** combination). Any AText set by the user will have a program generated cross reference drawing number appended.

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-351 **FABRICATED (PULLED) BEND** Used to identify Fabricated Bends when listed as separate items on the Material List.

-352 **WEIGHT** Column heading for Weight.

-353 **KGS** Units indicator for Kilogram weights. Used as part of Weight column heading and in pipeline Weight summary area at bottom of Material List.

-354 **LBS** Units indicator for Pound weights. Used as part of Weight column heading and in pipeline Weight summary area at bottom of Material List.

-355 **TOTAL WEIGHT-THIS DRG** Identification text for Total Pipeline Weight in Weight column and also in Weight summary area at bottom of Material List.

-356 **U** Special ATEXT used only to identify special type Pulled Bends. Is used both on the Material List and on the isometric area as a prefix to the Part Number.

-357 **B** Special ATEXT used only to identify special type Erection Welds. Is used both on the Material List and on the isometric area as a prefix to the Part Number.

-358 **W** Special ATEXT only to identify special type Fabrication Welds. Is used both on the Material List and on the isometric area as a prefix to the Part Number.

-359 (Normally blank) Used for bolt units sub-heading. ISOGEN outputs in **DIA x LENGTH** sequence.

-362 **END$ONE** Column heading on Cut Pipe List. (Also appears in the isometric drawing area section when it is necessary to identify a specific End of a Cut Piece).

-363 **END$TWO** Column heading on Cut Pipe List.

-364 **ITEM$CODE** Last column heading on Cut Pipe List when Item Code heading is required. (See also **AText -365**).

-365 (Normally blank) Alternative last column heading on Cut Pipe List. (See also **AText -364**). If Part Number is required on the Cut List instead of Item Code then **AText -364** should be set to blank and AText -365 set to the required alternative heading. E.g. PART$NO.

-366 **SQ.CUT** Used for Square Cut in End Condition columns on Cut Pipe List.

-367 **BEVEL** Used for Bevel in End Condition columns on Cut Pipe List.

-368 **SCREWED** Used for Screwed in End Condition columns on Cut Pipe List.

-369 **SHAPED** Used for Shaped in End Condition columns on Cut Pipe List.

-370 **MITRED** Used for Mitred in End Condition columns on Cut Pipe

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List.

-371 **OFFSHORE MATERIALS** Is the category heading under which components required for 'OFFSHORE' erection are listed.

-372 **REMARKS** Remarks region heading at bottom of Material List where Remarks text is collectively listed.

-373 **REM** Remarks Column heading in Material List. Remark Reference Numbers are listed in this column.

-374 **ANGLE** Used on special type Pulled Bends where angle information is appended to the item Description field on the Material List.

-375 **WELDS** Is the group sub-heading under which all Welds are listed.

-376 **FAB** Used to identify Fabrication material when Category is used as a data item on a Style 2 or 3 Material List.

-377 **EREC** Used to identify Erection material when Category is used as a data item on a Style 2 or 3 Material List.

-378 **OFF** Used to identify Offshore material when Category is used as a data item on a Style 2 or 3 Material List.

-379 **TOTAL FABRICATION WEIGHT** Identification text for Total Fabrication Weight in Weight column and also in Weight Summary area at bottom of Material List.

-380 **TOTAL ERECTION WEIGHT** Identification text for Total Erection Weight in Weight column and also in Weight Summary area at bottom of Material List.

-381 **TOTAL OFFSHORE WEIGHT** Identification text for Total Offshore Weight in Weight column and also in Weight Summary area at bottom of Material List.

-382 **TOTAL WEIGHT UNLISTED ITEMS** Identification text for the Total Weight of Unlisted Items in the Weight column and also in the Weight Summary Area at the bottom of the Material List.

-383 ***** Missing Weight indicator. The ***** is a special marker that is used on both Weight and C Of G outputs to indicate that component(s) with zero Weight were encountered.

-384 **TANGENT+** Used in the REMARKS column of the Cut List to indicate where extra material has been added to a Cut Piece Length in order to provide a minimum Tangent Length for either a start or finish Bend Leg.

-385 **CUT/WELD** Used in the Cut Piece Remarks section against cut pieces that have additional material added between adjacent bends.

-426 **GROOVED** Used to indicate grooved end preparation for Victaulic

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pipe connections on the cut pipe list / report.

-427 **FLARED** Used to indicate a flared end preparation on the cut pipe list / report.

-428 **SCREWED** Used to indicate a female screwed end preparation on the cut pipe list / report.

-431 **SOCKET** Used to indicate a female socket weld / compression / glued / push fit end preparation on the cut pipe list / report.

-472 **No.?** Used to output a Location Point ID number on the Drawing Frame. Will only be output when multiple Location Points are included on a single isometric.

-473 **OF** Used as part of a Location Point position on the Drawing Frame.

-474 **ABOVE** Used as part of a Location Point position on the Drawing Frame.

-500 **SHOP TEST** Used on the Cut List to identify Cut Pieces that need to have an additional Shop Test allowance. (That is, Welds with the SKEY WSST or WFST).

-503 **SPOOL ID** Used as either a Header or column identifier on the following Printed Output whenever Spool Identifiers are listed.i) Printed Material List (Style 1 or 2).
ii) Printed Material Control File.
iii) Printed Weld Summary.

-514 **REINFPAD** Used as the Item Code for a Reinforcement Pad whenever automatic Item Code generation is requested.

-515 **REINFORCEMENT PAD FOR @** Used as the first part of a Description for a Reinforcement Pad whenever automatic Description generation is requested. The second part of the Pad Description will be the Description of the Main pipeline Tube to which the Pad is welded.

-537 (Normally blank) If set, will be used as an alternative Units indication on any Length output on any style of Material List. (Over-rules any Length Units setting in **O.S. 24**).

-538 (Normally blank) If set, will be used to offer an alternative form of Bolt Diameter / Length output on any style of Material List.

-540 (Normally blank) If set, will be used as an optional Column Heading for Bolt Diameter where the Bolt units are different to the normal Pipeline units.

ALIAS

The Line Summary Area

The ATexts that are used in the Line Summary area along the bottom of the isometric drawing can either have their ATexts changed or made blank. If the AText is changed, then its' associated symbol will be drawn. If it is set to blank, then the symbol will not be drawn.

In these ATexts, the inclusion of a $ sign creates a forced line feed causing the text to be plotted over two lines.

-400 **TRACED$PIPE**

-401 **LAGGED$PIPE**

-402 **PIPE$SUPPORT**

-403 **COMPN$JOINT**

-404 **SCREWED$JOINT**

-405 **SOCKET$WELD**

-406 **FIELD$WELD**

-407 **SHOP$WELD**

-408 & -409 These two AText's have no default Text but may be used for any User specified general information on the Drawing Frame. A typical example would be:-
PULLED BEND RADIUS IS 3X NOMINAL PIPE BORE

-410 **[1] DENOTES PIPE SPOOL NO$**

1 DENOTES PARTS LIST NO This is a general note to signify how Spool Numbers and Material List Part Numbers are shown on the isometric.

If only the bottom line is required the records in the Pipeline Input Data File should be as shown below:-

-410 **$ 1 DENOTES PARTS LIST NO**

-411 **SITE$CONNECTION**

The following ATexts appear in the line summary area along the bottom of both the plotted and printed Material Lists.

-317 **PIPE NS** Is used in conjunction with **AText -318** to which the total Centre Line Length per bore is automatically computed and listed. Also uses **AText -330** or **AText -331** to indicate Units.

-318 **CL LENGTH** Is used in conjunction with **AText -317**. Also uses **AText -329** or **AText -331** or **AText -360** or **AText -361** depending on Units being used

-360 **FT** Used to indicate unit type 'Feet' in pipe Centre-Line Length region.

ALIAS

-361	**FT-INS**	Used to indicate unit type 'Feet-Inches' in pipe Centre-Line Length region.
-386		Blank is the default. Used to control output of insulation length.
-387		Blank is the default. Used to control output of heat trace length.

The Printed Material List

The ATexts listed below are used on the Printed Material List in addition to those ATexts listed for the Plotted Material and Cut Pipe Lists earlier.

-332	**PAGE**	This has a Page Number automatically appended.
-333	**PIPELINE REF**	This has the Pipeline Reference automatically appended.
-336	**SYSTEM REF**	This is used as an alternative to **AText -333** when producing Material List for System Isometrics. The contents of a SYSTEM-ISOMETRIC-REFERENCE record in the Pipeline Input Data File is automatically appended to the AText.

The Weld Box Summary

1) Standard Weld Summary Box.

Weld Box header details (line 1).

-412	**WELD**	**SHOP**	**WELD**	**WELDER**	**VISUAL**	**NDT**	**HARD**	**S.R**	**FAB.QA**

Continuation of Weld Box header details. (line 2)

-413	NO	/FLD	PROC	ID	ACCEPT	NO	NO		ACCEPT

The first column of this Weld Summary Box is used for the program generated Weld Number and optional prefix. The second column is for Weld category and contains the Shop / Field / Offshore indicators. This must be taken into account when making any changes to either of these two ATexts.

-414	**S**	Weld category identification - Shop.
-415	**F**	Weld category identification - Field.
-416	**O**	Weld category identification - Offshore.

One of the above characters is plotted in the Weld Category column (column 2), depending upon the type of Weld.

2) User Defined Weld Summary Box.

-417	**BW**	Used for Weld type identifier Butt Weld.
-418	**SW**	Used for Weld type identifier Socket Weld.
-419	**MW**	Used for Weld type identifier Mitre Weld.
-420	**LUG**	Used for Weld type identifier LUGG.
-421	**SOF**	Used for Weld type identifier Slip-On Flange.
-422	**SOB**	Used for Weld type identifier Set-On Branch.
-423	**LET**	Used for Weld type identifier 'LET' E.g. Olet, Latrolet, Half Coupling, etc.
-424	**SLW**	Used to indicate the weld type for Seal Welds in welding lists and reports.
-438	**SEAM**	Weld type identifier for a Seam Weld.
-504	(Normally blank)	Can be set by the User and used to identify Field Fit Welds only when the Weld Category attribute is Output.
-507	**RPD**	Used for Weld type identifier for a Basic Reinforcing Pad Weld - when one extra Weld Number is requested.
-508	**LF**	Used for Weld type identifier for a Reinforcing Pad to Main Pipeline Weld - when two extra Weld Numbers are requested. (Used together with **AText -509**).
-509	**L4**	Used for Weld type identifier for a Reinforcing Pad to Branch Weld - when two extra Weld Numbers are requested. (Used together with **AText -508**).
-510	(Normally blank)	If set, will be used as the delimiter between the two Material List Identifiers in the 'Location' column of the Operations Box.
-511	**PAD**	Used as a Part Identifier in the 'Location' column of the Operations Box in cases where a Reinforcement Pad has not been included on the Material List.
-513	**TW**	Weld type identifier for a Tack Weld.
-516	**TRN**	Weld type identifier for a Trunnion Weld. (i.e. The weld that connects the Trunnion to the Main Pipeline).
-517	**5**	Used for Weld Action Identification for a Manual Weld on the Operations List.
-518	**1**	Used for Weld Action Identification for an Automatic Weld on the Operations List.

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-519	**EB**	Used for Pulled Bend identification on the Operations List.
-520	**RL**	Used for Random Length identification on the Operations List.
-521	**FW**	Used for Weld type identifier for a Fillet Weld. (The Basic Weld used for connecting Pipe Supports to the Pipeline).
-522	(Normally blank)	If set, will be used as an alternative to **AText -422** to identify the Branch Connection Weld(s) for a Reinforced Tee or Cross.
-523	(Normally blank)	If set, will be used as an alternative to **AText -422** to identify the Branch Connection Weld(s) for an Angled (not 90°) Reinforced Tee or Cross.
-524	(Normally blank)	If set, will be used as an alternative to **AText -422** to identify the Branch Connection Weld(s) for an Angled (not 90°) Set-On Tee or Cross.
-525	(Normally blank)	If set, will be used for the Weld Type identifier for any Olet type component with an SKEY of HCSC or HCSW.
-526	(Normally blank)	If set, will be used for the Weld Type identifier for a Reinforcement Pad to Main Pipeline Weld on an Angled Branch - when two extra Weld numbers are requested. (Used together with **AText -527**).
-527	(Normally blank)	If set, will be used for the Weld Type identifier for a Reinforcement Pad to Branch Weld on an Angled Branch - when two extra Weld numbers are requested. (Used together with **AText -526**).
-528	(Normally blank)	If set, will be used for the Weld Type identifier for a Trunnion to Elbow / Bend connection.
-529	(Normally blank)	If set, will be used for the Weld Type identifier for a 90° Non-Reinforced Trunnion to Main Pipeline Weld.
-530	(Normally blank)	If set, will be used for the Weld Type identifier for an Angled Non-Reinforced Trunnion to Main Pipeline Weld.
-531	(Normally blank)	If set, will be used for the Weld Type identifier for a 90° Reinforced Trunnion to Main Pipeline Weld.
-532	(Normally blank)	If set, will be used for the Weld Type identifier for an Angled Reinforced Trunnion to Main Pipeline Weld.

Flat Spools and Flange Rotation

The following six ATexts are used in DIRECTION records in the Pipeline Input Data File when indicating compound directions for certain components in Skewed

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Pipelines. Also used when ISOGEN is generating ORIENTATION and CONNECTION DIRECTION Messages on Flat Spools.

-481 **E** Denotes East.

-482 **N** Denotes North.

-483 **W** Denotes West.

-484 **S** Denotes South.

-485 **U** Denotes Up.

-486 **D** Denotes Down.

-487 ***** REFERENCE FLAT ***** Used to identify which Eccentric Reducer Flat Direction is used as a reference for a given flange rotation.

-488 ***** REFERENCE SPINDLE ***** Used to identify which Spindle is used as a reference for a given flange rotation.

-489 ***** REFERENCE SUPPORT ***** Used to identify which Support is used as a reference for a given flange rotation.

-490 ***** REFERENCE BRANCH ***** Used to identify which Branch is used as a reference for a given flange rotation.

-491 ***** REFERENCE WINDOW ***** Used to identify which Window is used as a reference for a given flange rotation.

-492 **FLAT DIRECTION**Used to point to 2D and 3D Skew enclosure triangles at Eccentric Reducers to indicate a Flat Direction on Flat Spools.

-493 **SPINDLE DIRECTION** Used to point to 2D and 3D Skew enclosure triangles located at Spindles on Flat Spools.

-494 **SUPPORT DIRECTION** Used to point to 2D and 3D Skew enclosure triangles located at Supports on Flat Spools.

-495 **BRANCH DIRECTION** Used to point to 2D and 3D Skew enclosure triangles located at undeveloped Set-On Branches or single Olets on Flat Spools.

-496 **WINDOW DIRECTION** Used to point to 2D and 3D Skew enclosure triangles located at Sight Glasses on Flat Spools.

-497 **FLANGE ROTATION ?** Used to identify Flange Rotations on Flat Spools. (The calculated angle is edited in by the program at the position of the ? character).

The COMPIPE Material Control Links

-299 ***/*** Single character delimiter used between the three data items that are required to be in each ITEM-CODE

ALIAS

record when using the COMPIPE link facility.

-453 **MM-** Used to separate Nominal Size and Pipeline Reference when ISOGEN generates a drawing number for use in the COMPIPE.MTO file.

SPOOLGEN (FFISYS) Screen Display

The following 800 series ATexts are used in SPOOLGEN probing and the FFISYS.

-800 **BEND**

Identification of BEND when Probing.

-801 **ELBOW**

Identification of ELBOW when Probing.

-802 **OLET**

Identification of OLET when Probing.

-803 **TEE**

Identification of TEE when Probing.

-804 **CROSS**

Identification of CROSS when Probing.

-805 **REDUCER**

Identification of REDUCER when Probing.

-806 **TEE REDUCER**

Identification of TEE REDUCER when Probing.

-807 **REDUCING FLANGE**

Identification of REDUCING FLANGE when Probing.

-808 **TEE BEND/ELBOW**

Identification of TEE BEND/ELBOW when Probing.

-809 **ANGLE VALVE**

Identification of ANGLE VALVE when Probing.

-810 **3 WAY VALVE**

Identification of 3 WAY VALVE when Probing.

-811 **4 WAY VALVE**

Identification of 4 WAY VALVE when Probing.

-812 **INSTRUMENT**

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Identification of INSTRUMENT when Probing.

-813 **MISC COMPONENT**

Identification of MISC COMPONENT when Probing.

-814 **PIPE (TUBE**

Identification of PIPE (TUBE) when Probing.

-815 **FIXED PIPE**

Identification of FIXED PIPE when Probing.

-816 **PIPE BLOCK**

Identification of PIPE BLOCK when Probing.

-817 **FLANGE**

Identification of FLANGE when Probing.

-818 **LJSE FLANGE**

Identification of LJSE FLANGE when Probing.

-819 **BLIND FLANGE**

Identification of BLIND FLANGE when Probing.

-820 **CONNECTOR**

Identification of CONNECTOR when Probing.

-821 **BACKING NUT**

Identification of BACKING NUT when Probing.

-822 **CLAMP**

Identification of CLAMP when Probing.

-823 **MISC HYGENIC COMPONENT**

Identification of MISC HYGENIC COMPONENT when Probing.

-824 **CAP**

Identification of CAP when Probing.

-825 **COUPLING**

Identification of COUPLING when Probing.

-826 **UNION**

Identification of UNION when Probing.

-827 **VALVE**

Identification of VALVE when Probing.

-828 **TRAP**

Identification of TRAP when Probing.

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-829 **VENT**

Identification of VENT when Probing.

-830 **FILTER**

Identification of FILTER when Probing.

-831 **SUPPORT**

Identification of SUPPORT when Probing.

-832 **INSTRUMENT TEE**

Identification of INSTRUMENT TEE when Probing.

-833 **WELD**

Identification of WELD when Probing.

-834 **NONE**

Indication that NO component was located successfully when Probing.

-835 (Not Used)

Unused atext.

-836 (Not Used)

Unused atext.

-837 (Not Used)

Unused atext.

-838 (Not Used)

Unused atext.

-839 (Not Used)

Unused atext.

-840 **Changed to Bend**

'Probing Action' Message - Elbow changed to Bend.

-841 **Flange set to Loose**

'Probing Action' Message - Flange set to loose.

-842 **Detail Sketch ?**

'Probing Action' Message - Detail Sketch added.

-843 **Support changed to Fabrication**

'Probing Action' Message - Support changed to fabrication.

-844 **Support changed to Erection**

'Probing Action' Message - Support changed to Erection.

-845 **Support changed to Offshore**

ALIAS

'Probing Action' Message - Support changed to Offshore.

-846 **Tack Weld**

'Probing Action' Message - Tack Weld added.

-847 **Support(s) added**

'Probing Action' Message - Support Welds added.

-848 **Automatic Weld**

'Probing Action' Message - Automatic Weld added.

-849 **Shop Test**

'Probing Action' Message - Shop Test Weld added.

-850 **REDUCING-CONCENTRIC**

Flange type REDUCING-CONCENTRIC selected when Probing.

-851 **REDUCING ECCENTRIC**

Flange type REDUCING-ECCENTRIC selected when Probing.

-852 **STUB/BACKING PAIR**

Flange type STUB/BACKING PAIR selected when Probing.

-853 **SCREWED**

Flange type SCREWED selected when Probing.

-854 **SLIP-ON J TYPE**

Flange type SLIP-ON J TYPE selected when Probing.

-855 **SLIP-ON**

Flange type SLIP-ON selected when Probing.

-856 **SOCKET-WELD**

Flange type SOCKET-WELD selected when Probing.

-857 **WELD-NECK**

Flange type WELD-NECK selected when Probing.

-858 **SLIP-ON ORIFICE**

Flange type SLIP-ON ORIFICE selected when Probing.

-859 **WELD-NECK ORIFICE**

Flange type WELD-NECK ORIFICE selected when Probing.

-860 **LAP-JOINT RING**

Flange type LAP-JOINT RING selected when Probing.

-861 **LAP-JOINT STUB END**

Flange type LAP-JOINT STUB END selected when Probing.

ALIAS

-862 **UNKNOWN**

Flange type UNKNOWN selected when Probing.

-863 **Material added**

'Probing Action' Message - Indication of Additional Materials added to pipeline.

-864 **General Information Note - ?**

'Probing Action' Message - General Information Note added.

-865 **Specific Information Note - ?**

'Probing Action' Message - Specific Information Note added.

-866 **Weld deleted**

'Probing Action' Message - Weld deleted.

-867 **Support Weld(s) deleted**

'Probing Action' Message - Support Welds deleted.

-868 **Spool Name deleted**

'Probing Action' Message - Spool Name deleted.

-869 **Flow Arrow deleted**

'Probing Action' Message - Flow Arrow deleted.

-870 **Message deleted**

'Probing Action' Message - Message deleted.

-871 **Detail Sketch deleted**

'Probing Action' Message - Detail Sketch deleted.

-872 **Information Note deleted**

'Probing Action' Message - Information Note deleted.

-873 **Additional Material deleted**

'Probing Action' Message - Additional Material deleted.

-874 **Loose Flange un-set**

'Probing Action' Message - Loose Flange un-set.

-875 **Location point added**

'Probing Action' Message - Location point added.

-876 **Location point deleted**

'Probing Action' Message - Location point deleted.

-877 **FLOOR/WALL PENETRATION**

'Probing Action' Message - Identification of FLOOR/WALL PENETRATION when Probing.

ALIAS

-878 **FLOW ARROW**

'Probing Action' Message - Identification of FLOW ARROW when Probing.

-879 **INSULATION SYMBOL**

'Probing Action' Message - Identification of INSULATION SYMBOL when Probing.

-880 **MESSAGE**

'Probing Action' Message - Identification of MESSAGE when Probing.

-881 **Drawing Identifier deleted**

'Probing Action' Message - Identification of Drawing Identifier deleted.

-882 **Default Start**

'Probing Action' Message - Identification of Default Start positioned.

-883 **Pipeline Start**

In Probing - Indication of Default Pipeline Start Point.

-884 **Default Bypass Closure**

In Probing - Indication of Default Bypass Closure Point.

-886 **Bypass Closure**

'Probing Action' Message - Redefined Bypass Closure Point.

-887 **Pipe Support added**

'Probing Action' Message - Pipe Support added.

-888 **Pipe Support deleted**

'Probing Action' Message - Pipe Support deleted.

-889 **Properties Changed**

'Probing Action' Message - Category change for Gaskets and Bolts.

-890 **Coupling Added**

'Probing Action' Message - Label showing where a Coupling has been added.

-891 **Coupling Deleted**

'Probing Action' Message - Label showing where an existing Coupling has been removed.

-892 **Pipe Support Changed**

'Probing Action' Message - Label showing where an existing Pipe Support has been chnaged.

ALIAS

Reference Plane System

The following ATexts are used to output the relative directions associated with Reference Planes.

^ is substituted with the Reference Plane name.

? is substituted with the distance from the Reference Plane.

-443	**^ + ?**	Used for positive relative position in e/w plane.
-444	**^ - ?**	Used for negative relative position in e/w plane.
-445	**^ + ?**	Used for positive relative position in n/s plane.
-446	**^ - ?**	Used for negative relative position in n/s plane.
-447	**^ + ?**	Used for positive relative position in u/d plane.
-448	**^ - ?**	Used for negative relative position in u/d plane.
-449	**^ + ?**	Set to ‘blank’ - only outputs the Relative Position.

Versions

Atext	AText Editor Version Number	ISOGEN Development Number	ISOGEN Version Number	SPOOLGEN / FFISYS Development Number
-458	V 2.3.0	DEV. NO. 74C	V7.16.0	PDR1654
-885	V 2.3.0	DEV. NO. 76	V 7.16.2	FFISYS-PDRF020
-849	V 2.3.0	DEV. NO. 77	V 7.17.0	SPOOLGEN 010
-884	V 2.3.0	DEV. NO. 78A	V 7.17.0	SPOOLGEN 008
-886	V 2.3.0	DEV. NO. 78A	V 7.17.0	SPOOLGEN 008
-207	V 2.3.0	Release Notes	V 8.2.0	
-385	V 2.3.0	DEV. NO. 82	V 8.2.0	
-459	V 2.3.0	DEV. NO. 81	V 8.2.0	
-477	V 2.3.0	DEV. NO. 82	V 8.2.0	
-889	V 2.3.0	DEV. NO. 80A	V 8.2.0	SPOOLGEN 015
-469	V 2.3.0	DEV. NO. 83D	V 8.3.0	
-470	V 2.3.0	DEV. NO. 83E	V 8.3.0	
-887	V 2.3.0	DEV. NO. 80B	V 8.3.0	SPOOLGEN 008
-888	V 2.3.0	DEV. NO. 80B	V 8.3.0	SPOOLGEN 008
-890	V 2.3.0	DEV. NO. 86B	V 8.5.0	SPOOLGEN 009
-891	V 2.3.0	DEV. NO. 86B	V 8.5.0	SPOOLGEN 009
-386	V 2.3.0	DEV. NO. 86J	V 8.7.0	
-387	V 2.3.0	DEV. NO. 86J	V 8.7.0	
-388	V 2.3.0	DEV. NO. 73B	V 8.8.0	
-389	V 2.3.0	DEV. NO. 73B	V 8.8.0	
-390	V 2.3.0	DEV. NO. 73B	V 8.8.0	
-391	V 2.3.0	DEV. NO. 88C	V 8.8.0	
-392	V 2.3.0	DEV. NO. 89A	V 8.9.0	
-424	v 2.3.0	DEV. NO. 89E	V 8.10.0	
-425	v 2.3.0	DEV. NO. 89E	V 8.10.0	
-426	v 2.3.0	DEV. NO. 89E	V 8.10.0	

ALIAS

Atext	AText Editor Version Number	ISOGEN Development Number	ISOGEN Version Number	SPOOLGEN / FFISYS Development Number
-427	v 2.3.0	DEV. NO. 89E	V 8.10.0	
-428	v 2.3.0	DEV. NO. 89E	V 8.10.0	
-431	v 2.3.0	DEV. NO. 89E	V 8.10.0	
-892	v 2.3.0	DEV. NO. 89F	V 8.10.0	
-436	v 2.3.0	DEV. NO. 89D	V 8.11.0	
-438	v 2.3.0	DEV. NO. 89D	V 8.11.0	
-433	v 2.3.0	DEV. NO. 89J	V 8.11.0	
-434	v 2.3.0	DEV. NO. 89J	V 8.11.0	
-437	v 2.3.0	Release Notes	V 8.11.0	
-443		DEV. NO. 91G	V 8.11.7	
-444		DEV. NO. 91G	V 8.11.7	
-445		DEV. NO. 91G	V 8.11.7	
-446		DEV. NO. 91G	V 8.11.7	
-447		DEV. NO. 91G	V 8.11.7	
-448		DEV. NO. 91G	V 8.11.7	
-449		DEV. NO. 91G	V 8.11.7	
-394		Release Notes	V 8.11.9	

Switches by number
Switches by name
ALIAS