

NORSOK STANDARD

CAD SYMBOL LIBRARIES

Z-004
Rev. 1, July 1998

This NORSOK standard is developed by NTS with broad industry participation. Please note that whilst every effort has been made to ensure the accuracy of this standard, neither OLF nor TBL or any of their members will assume liability for any use thereof. NTS is responsible for the administration and publication of this standard.

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FOREWORD

NORSOK (The competitive standing of the Norwegian offshore sector) is the industry initiative to add value, reduce cost and lead time and eliminate unnecessary activities in offshore field developments and operations.

The NORSOK standards are developed by the Norwegian petroleum industry as a part of the NORSOK initiative and supported by OLF (The Norwegian Oil Industry Association) and TBL (Federation of Norwegian Engineering Industries). NORSOK standards are administered and issued by NTS (Norwegian Technology Standards Institution).

The purpose of NORSOK standards is to contribute to meet the NORSOK goals, e.g. by replacing individual oil company specifications and other industry guidelines and documents for use in existing and future petroleum industry developments.

The NORSOK standards make extensive references to international standards. Where relevant, the contents of a NORSOK standard will be used to provide input to the international standardisation process. Subject to implementation into international standards, the NORSOK standard will be withdrawn.

Annexes are normative.

INTRODUCTION

The various CAD environments in the petroleum industry are evolving rapidly and have often been using different CAD symbol libraries. Considerable cost reductions have been identified by standardization of CAD symbol libraries. NORSOK organized a work group to recommend a standard for CAD symbol libraries, thus making it more efficient to read, edit and manage drawings for all involved parties through the lifespan of a drawing.

The symbols in this standard are intended to be in compliance with ISO and other standards where possible, with additions of symbols that are unique to the offshore industry. This symbol library may not be optimal for all working environments but aims at the main goal of creating one common standard that is aimed at being suitable for the majority of needs.

In addition to setting a standard, the fact that the symbols are available as digital files for downloading from NTS/NORSOK Internet site <http://www.nts.no/norsok>, ready for use in CAD drawing production, saves the users the work of making their own symbols and digital files.

1 SCOPE

The purpose of this standard is to define and provide drawing symbol libraries for offshore engineering disciplines that utilise CAD in drawing production.

2 NORMATIVE REFERENCES

The following standards include provisions which, through reference in this text, constitute provisions of this NORSOK standard. Latest issue of the references shall be used unless otherwise agreed. Other recognized standards may be used provided it can be shown that they meet or exceed the requirements of the standards referenced below.

NORSOK Z-DP-002 Coding System (will be renumbered Z-002)
NORSOK Z-005 2D-CAD drawing standard

3 DEFINITIONS AND ABBREVIATIONS

CAD	Computer aided design
DGN	MicroStation file format designation (Intergraph IGDS)
DWG	AutoCad file format designation
DXF	AutoDesk Data eXchange file format designation
HTML	HyperText Markup Language
NEK	Norsk Elektrisk Komite (the national Norwegian committee working with IEC)
IEC	International Electrotechnical Commission
ISO	International Standardization Organization
NS	Norsk Standard

4 SYMBOL ORGANIZATION AND DOCUMENTATION

4.1 Organisation

Symbol libraries are organized per discipline. For each discipline there is an Annex in this standard with a graphic representation and a description of all the symbols provided.

4.2 Digital files

NTS/NORSOK provides digital files available for downloading from Internet (<http://www.nts.no/norsok>) with all the symbols in this standard.

For MicroStation users each discipline is stored in a cell library named after this convention:
NORSOK standard number_discipline code (according to NORSOK standard Z-DP-002)

Example: Z004_A.cel

The symbol names contain 6 characters.

Example: L V 0 0 5 A

				-----	revision number
				-----	sequence number
				-----	subgroup
				-----	discipline code (ref. NORSOK Z-DP-002)

For AutoCad users there is a drawing file for each symbol. Example: LV005A.dwg

4.3 Symbol design

For symbols containing text the MicroStation 'enter-Datafield' is used to fill in wanted text string. For AutoCad symbols containing text 'attribute fields' is used to fill in wanted text string.

All schematic symbols are drawn on grid with a resolution of one millimeter. Origo and connection point are on grid. For filled areas, commando 'area-fill' is used, not hatching. Nested symbols are not used.

Symbols for Structural drawings are in scale 1:1, and all sections of beams are drawn in correct scale, ref. NORSOK Z-005 section 5.2.

4.4 Layer usage

All graphic and text for the separate symbols are placed on one layer. Layers 24 - 28 are used, depending on symbol type. Ref. NORSOK Z-005 Annex C.

5 SPECIAL LINES

Special lines covered in Annex J, are stored in resource MicroStation file 'Z004_LS.RSC' and AutoCad file 'Z004_LS.LIN'. These special lines are in accordance with International Standards that are representative for the disciplines.

All line types shall be drawn in accordance with NORSOK standard Z-005.

6 SYMBOLS

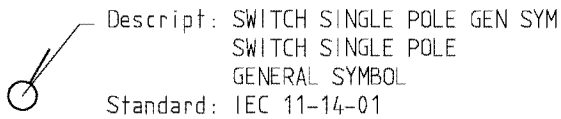
Symbols shall be drawn as found in Annex A-I and special lines as found in Annex J.

7 INFORMATIVE REFERENCES

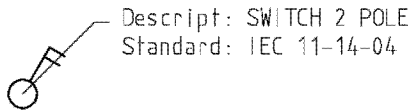
The NORSOK standard CAD symbol libraries have attempted to make use of national and international standards as far as practical and conforming with current industry practise. The following standards have been references:

- NS 1422 Fluid power systems and components. Graphic symbols
- NS 1710 Drawing symbols for piping systems.
- NS 1421 Welds Symbolic representation on drawing
- IEC International Electrotechnical Commission

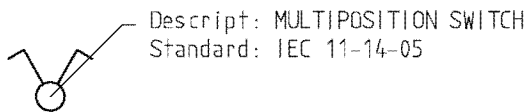
ANNEX A ELECTRICAL (NORMATIVE)



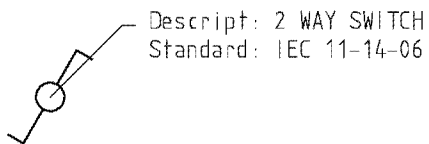
E1001A
SWITCH SINGLE POLE GEN SYM



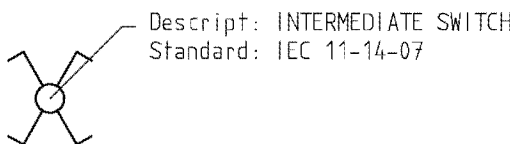
E1002A
SWITCH 2 POLE



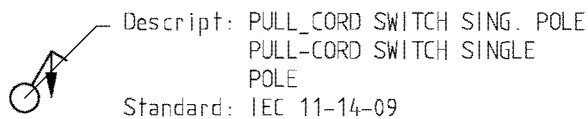
E1003A
MULTIPosition SWITCH



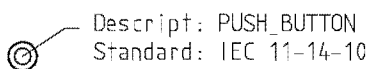
E1004A
2 WAY SWITCH



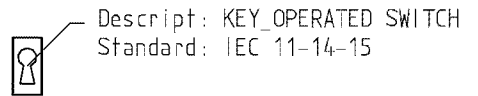
E1005A
INTERMEDIATE SWITCH



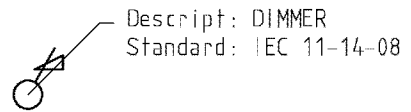
E1006A
PULL_CORD SWITCH SING. POLE



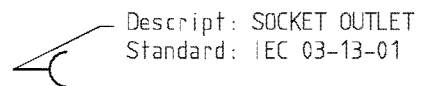
E1007A
PUSH_BUTTON



E1008A
KEY_OPERATED SWITCH



E1009A
DIMMER



E1010A
SOCKET OUTLET



Descript: SOCKET OUTLET W EARTH
Standard: IEC 11-13-04

EI011A
SOCKET OUTLET W EARTH



Descript: SOCKET OUTL. SING. SWITCH
SOCKET OUTLET
SINGLE POLE SWITCH
Standard: IEC 11-13-06

EI012A
SOCKET OUTL. SING. SWITCH



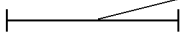
Descript: SOCKET OUTL. ISOL. TRANSF.
SOCKET OUTLET
ISOLATING TRANSFORMER
Standard: IEC 11-13-08

EI013A
SOCKET OUTL. ISOL. TRANSF.



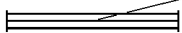
Descript: PROJECTOR
Standard: IEC 11-15-07

EI014A
PROJECTOR



Descript: LUM. FLUORESCANT LAMP 1 TUBE
LUMINAIRE FLUORESCANT LAMP
ONE TUBE
Standard: IEC 11-15-04

EI015A
LUM. FLUORESCANT LAMP 1 TUBE



Descript: LUM. FLUORESCANT LAMP 3 TUBE
LUMINAIRE FLUORESCANT LAMP
THREE TUBES
Standard: IEC 11-15-05

EI016A
LUM. FLUORESCANT LAMP 3 TUBE

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX A - ELECTRO

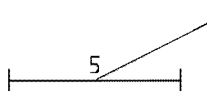
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Documents

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 Descript: LUM. FLUORESANT LAMP 5 TUBE
LUMINAIRE FLUORESANT LAMP
FIVE TUBES
Standard: IEC 11-15-06

EI017A
LUM. FLUORESANT LAMP 5 TUBE

 Descript: MAINS BATTERY EMERGENCY
Standard: IEC 11-15-12

EI018A
MAINS BATTERY EMERGENCY

 Descript: LAMP SIGNAL LAMP
Standard: IEC 08-10-01

EI019A
LAMP SIGNAL LAMP

 Descript: JUNCTIONS\$ CONN. OR BRANCH
JUNCTION, CONNECTION OR
BRANCHING
Standard: IEC 03-02-01

EI020A
JUNCTIONS\$ CONN. OR BRANCH

 Descript: EARTH
Standard: IEC 02-15-01

EI021A
EARTH

 Descript: FRAME OR CHASSIS
Standard: IEC 02-15-04

EI022A
FRAME OR CHASSIS

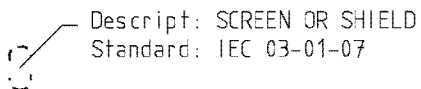
 Descript: CABLE
Standard: IEC 03-01-09

EI023A
CABLE

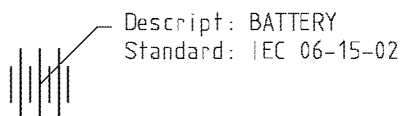
NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX A - ELECTRO

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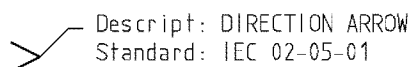
PAGE 3 OF 17



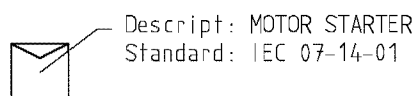
E1024A
SCREEN OR SHIELD



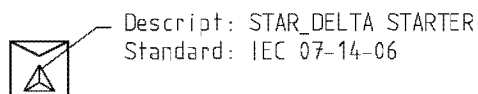
E1025A
BATTERY



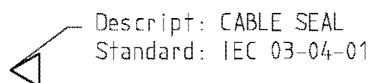
E1026A
DIRECTION ARROW



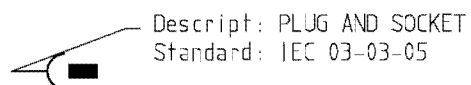
E1027A
MOTOR STARTER



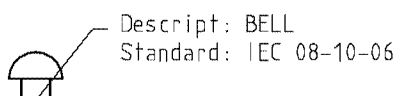
E1028A
STAR_DELTA STARTER



E1029A
CABLE SEAL



E1030A
PLUG AND SOCKET



E1031A
BELL

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX A - ELECTRO

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 Descript: MANUALLY OP. CONTROL
MAUALLY OPERATED CONTROL
Standard: NEK 144 25302 63
IEC 02-13-01

ES001A
MANUALLY OP. CONTROL

 Descript: OPERATED BY PULLING
Standard: NEK 144 25303 63
IEC 02-13-03

ES002A
OPERATED BY PULLING

 Descript: OPERATED BY PUSHING
Standard: NEK 144 25304 63
IEC 02-13-05

ES003A
OPERATED BY PUSHING

 Descript: OPERATED BY TURNING
Standard: NEK 144 25305 63
IEC 02-13-04

ES004A
OPERATED BY TURNING

 Descript: MANUALLY OPERATED
CONTROL WITH
RESTRICTED ACCESS
Standard: NEK 144 25306
IEC 02-13-02

ES005A
MAN OPERATED CONTROL

 Descript: EMERGENCY OPERATION
Standard: NEK 144 25307
IEC 02-13-08

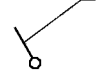
ES006A
EMERGENCY OPERATION

 Descript: OPERATED BY HANDWHEEL
Standard: NEK 144 25308
IEC 02-13-09

ES007A
OPERATED BY HANDWHEEL

 Descript: OPERATED BY PEDAL
Standard: NEK 144 25309
IEC 02-13-10

ES008A
OPERATED BY PEDAL

 Descript: OPERATED BY LEVEL
Standard: NEK 144 25310
IEC 02-13-11

ES009A
OPERATED BY LEVEL

 Descript: OPERATED BY CRANK
Standard: NEK 144 25311
IEC 02-13-14

ES010A
OPERATED BY CRANK

 Descript: OPERATED BY
REMOVABLE
HANDLE
Standard: NEK 144 25312
IEC 02-13-12

ES011A
OPERATED BY REM. HANDLE

 Descript: OPERATED BY KEY
Standard: NEK 144 25313
IEC 02-13-13

ES012A
OPERATED BY KEY



Descript: OPERATED BY LIN. VELIORITY
OPERATED BY LINEAR
VELIORITY (FLOW SPEED)
Standard: NEK 144 25413 26

ES013A
OPERATED BY LIN. VELIORITY



Descript: OPERATED BY ROT. FREQ.
OPERATED BY ROTATIONAL
FREQUENCY (SPEED)
Standard: NEK 144 25408 26

ES014A
OPERATED BY ROT. FREQ.



Descript: OPERATED BY PRESSURE
Standard: NEK 144 26119

ES015A
OPERATED BY PRESSURE



Descript: OPERATED BY TEMPERATURE
Standard: NEK 144 25403 26

ES016A
OPERATED BY TEMPERATURE



Descript: OPERATED BY FLUID LEVEL
Standard: NEK 144 25409

ES017A
OPERATED BY FLUID LEVEL



Descript: OP. BY HYDR. OR PNEU ACTU.
OPERATED BY HYRAULIC OR
PNEUMATIC ACTUATOR
Standard: NEK 144 25502

ES018A
OPERATED BY NUM. OF EVEN.



Descript: OPERATED BY LIGHT
Standard: NEK 144 25404 27

ES019A
OPERATED BY LIGHT

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ANNEX A - ELECTRO

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Descript: OPERATED BY EL. MOTOR
OPERATED BY ELECTRICAL
MOTOR
Standard: NEK 144 25504
IEC 02-13-26

ES020A
OPERATED BY EL. MOTOR



Descript: OPERATED BY CAM
OPERATED BY CAM
Standard: NEK 144 25506
IEC 02-13-16

ES021A
OPERATED BY CAM



Descript: OPERATED BY THERM. ACT.
OPERATED BY THERMAL
ACTUATOR
Standard: NEK 144 25505
IEC 02-13-25

ES022A
OPERATED BY THERM. ACT.



Descript: GEN. SYMB USERS CHOICE
GENERAL SYMBOL AND
USERS CHOICE
Standard: NEK 144 25402
IEC 02-01-01

ES023A
GEN. SYMB USERS CHOICE



Descript: POSITION INDICATOR 2 POS
POSITION INDICATOR
(2 POSITIONS)
Standard: NEK 144 633114

ES024A
POSITION INDICATOR 2 POS



Descript: ORD. LINK FOR ACT MAKE CON
ORDINARY LINK FOR ACTUATOR/
MAKE CONTACT COMBINATIONS
Standard: NEK 144 22001
IEC 02-12-01

ES025A
ORD. LINK FOR ACT MAKE CON

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX A - ELECTRO

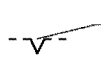
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Documents

Document Sharing Hub


 Descript: LINK W NON.AUT RETURN
 LINK W/NON-AUTOMATIC RETURN
 (DETENT) FOR ACTUATOR/MAKE
 CONTACT COMBINATION
 Standard: NEK 144 25102
 IEC 02-12-08

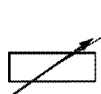
ES026A
 LINK W NON.AUT RETURN


 Descript: RESTISTOR
 Standard: IEC 04-01-01

ES027A
 RESTISTOR


 Descript: HEATING ELEMENT
 Standard: IEC 04-01-12

ES028A
 HEATING ELEMENT


 Descript: VARIABLE RESISTOR
 Standard: IEC 04-01-03

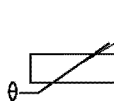
ES029A
 VARIABLE RESISTOR


 Descript: POTENTIOMETER
 Standard: IEC 04-01-07

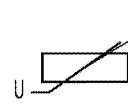
ES030A
 POTENTIOMETER


 Descript: CAPACITOR
 Standard: IEC 04-02-01

ES031A
 CAPACITOR


 Descript: THERMISTOR

ES032A
 THERMISTOR


 Descript: VARISTOR
 Standard: IEC 04-01-04
ES033A
 VARISTOR


 Descript: DIODE
 Standard: IEC 05-03-01

ES034A
 DIODE


 Descript: THYRISTOR
 Standard: IEC 05-04-04

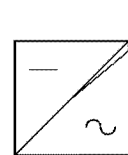
ES035A
 THYRISTOR


 Descript: PNP TRANSISTOR
 Standard: IEC 05-05-01

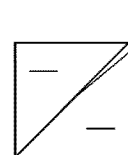
ES036A
 PNP TRANSISTOR


 Descript: NPN TRANSISTOR
 Standard: IEC 05-05-02

ES037A
 NPN TRANSISTOR


 Descript: INVERTER
 Standard: IEC 06-14-05

ES039A
 INVERTER


 Descript: DC CONVERTER
 Standard: IEC 06-14-02

ES040A
 DC CONVERTER



Descript: FUSE GENERAL SYMBOL
Standard: NEK 144 68001 / IEC 07-21-01

ES041A
FUSE GENERAL SYMBOL



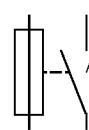
Descript: FUSE W IND. SUPP. SIDE
FUSE W/INDICATOR OF THE
SUPPLY SIDE
Standard: NEK 144 68002 / IEC 07-21-02

ES042A
FUSE W IND. SUPP. SIDE



Descript: FUSE WITH ALARM CONTACT
Standard: NEK 144 68005 / IEC 07-21-04

ES043A
FUSE WITH ALARM CONTACT



Descript: FUSE W SEP. ALARM CONT.
FUSE W/SEPARATE ALARM
CONTACT
Standard: NEK 144 68006 / IEC 07-21-05

ES044A
FUSE W SEP. ALARM CONT.



Descript: INDUCTOR
Standard: NEK 144 51202 / IEC 06-03-01/02/03

ES045A
INDUCTOR



Descript: TRANSF.2 WINDINGS WIR. D
TRANSFORMER WITH
2 WINDINGS (WIRING D)
Standard: NEK 144 51209 / IEC 06-09-02

ES046A
TRANSF.2 WINDINGS WIR. D

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ANNEX A - ELECTRO

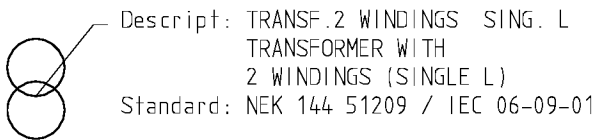
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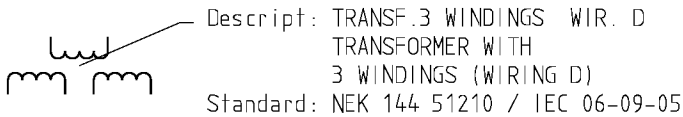


Documents

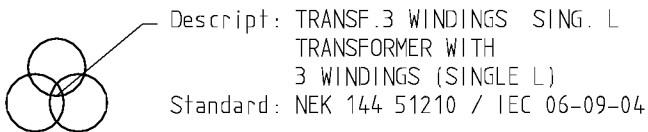
Document Sharing Hub



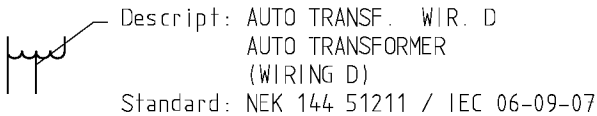
ES047A
TRANSF.2 WINDINGS SING. L



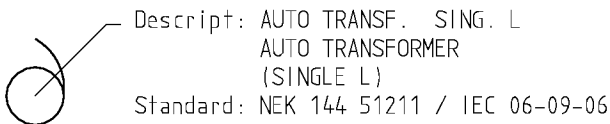
ES048A
TRANSF.3 WINDINGS WIR. D



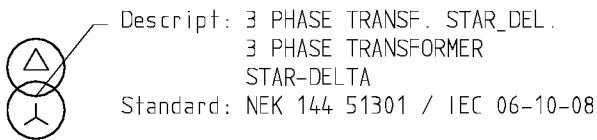
ES049A
TRANSF.3 WINDINGS SING. L



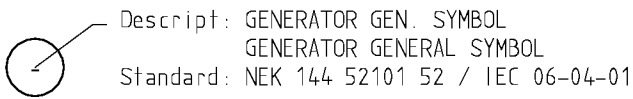
ES050A
AUTO TRANSF. WIR. D



ES051A
AUTO TRANSF. SING. L



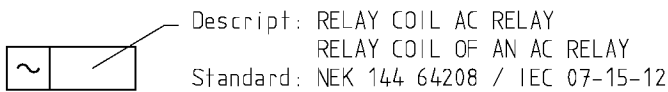
ES052A
3 PHASE TRANSF. STAR_DEL.



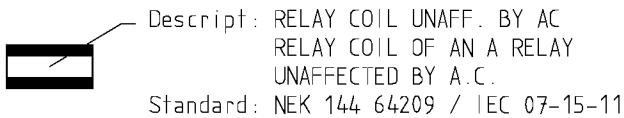
ES053A
GENERATOR GEN. SYMBOL



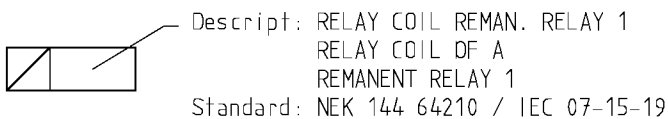
ES054A
GENERAL RELAY COIL



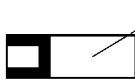
ES055A
RELAY COIL AC RELAY



ES056A
RELAY COIL UNAFF. BY AC



ES057A
RELAY COIL REMAN. RELAY 1



Descript: RELAY COIL POLAR. RELAY
RELAY COIL OF A POLARIZED
RELAY
Standard: NEK 144 64212 / IEC 07-15-15

ES058A
RELAY COIL POLAR. RELAY



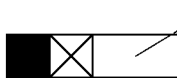
Descript: RELAY COIL SLOW_RELEASE.
RELAY COIL OF A POLARIZED
SLOW-RELEASING RELAY
Standard: NEK 144 64402 / IEC 07-15-07

ES059A
RELAY COIL CLOW_RELEASE



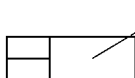
Descript: RELAY COIL SLOW_OPERATING
RELAY COIL OF A
SLOW-OPERATED RELAY
Standard: NEK 144 64403 / IEC 07-15-08

ES060A
RELAY COIL SLOW_OPERATING



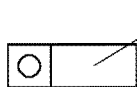
Descript: RELAY COIL SL_OP SL_REL.
RELAY COIL OF A
SLOW-OPERATING AND
SLOW-RELEASING RELAY
Standard: NEK 144 64404 / IEC 07-15-09

ES061A
RELAY COIL SL_OP SL_REL.



Descript: RELAY COIL HIGH_SPEED
RELAY COIL OF A
HIGH-SPEED RELAY
Standard: NEK 144 64405 / IEC 07-15-10

ES062A
RELAY COIL HIGH_SPEED



Descript: PULSE METER
Standard: NEK 144 65002 / IEC 08-05-02

ES063A
PULSE METER



Descript: CIRCUIT
BREAKER
Standard: IEC 07-13-05

ES071A
CIRCUIT BREAKER



Descript: SWITCH AND MAKE CONTACT
Standard: IEC 07-02-01

ES066A
SWITCH AND MAKE CONTACT



Descript: BREAKER
CONTACT
Standard: IEC 07-02-03

ES072A
BREAKER CONTACT



Descript: FUSE SWITCH
Standard: IEC 07-21-07

ES067A
FUSE SWITCH



Descript: DISCONNECTOR
Standard: IEC 07-13-04

ES068A
DISCONNECTOR



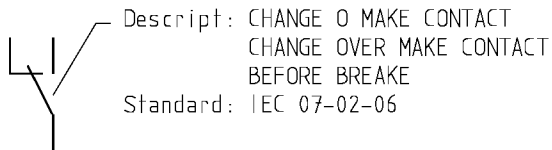
Descript: FUSE DISCONNECTOR
Standard: IEC 07-14-08

ES069A
FUSE DISCONNECTOR

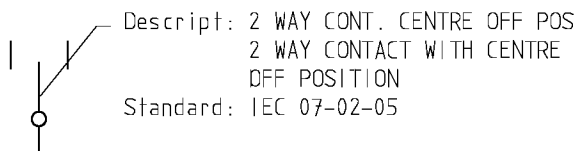


Descript: SWITCH DISCONNECTOR
Standard: IEC 07-13-08

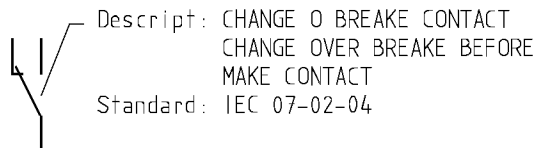
ES070A
SWITCH DISCONNECTOR



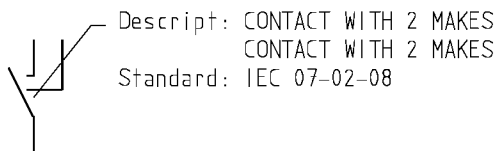
ES073A
CHANGE O MAKE CONTACT



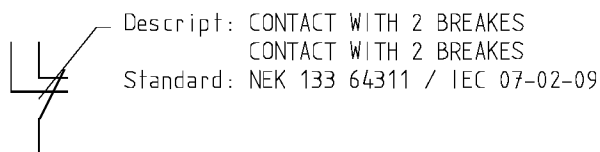
ES074A
2 WAY CONT. CENTRE OFF POS



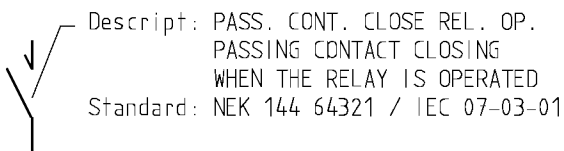
ES075A
CHANGE O BREAK CONTACT



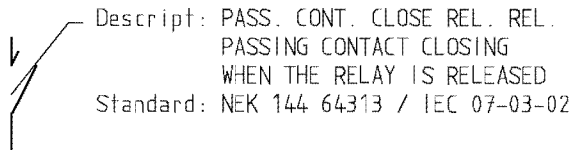
ES076A
CONTACT WITH 2 MAKES



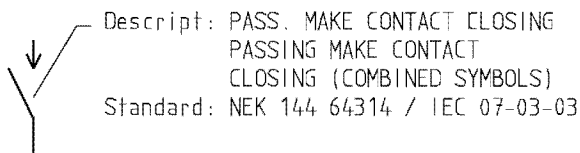
ES077A
CONTACT WITH 2 BREAKS



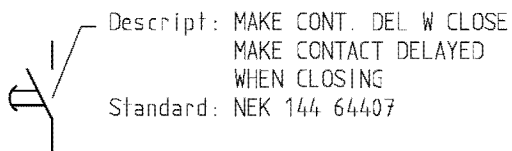
ES078A
PASS CONT. CLOSE REL. OP.



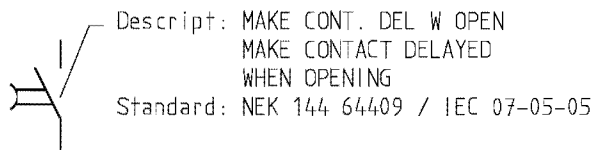
ES079A
PASS. CONT. CLOSE REL. REL.



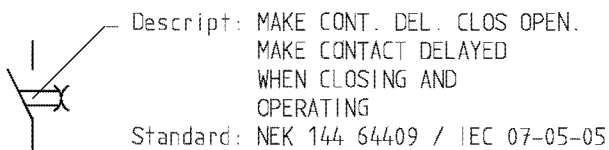
ES080A
PASS. MAKE CONTACT CLOSING



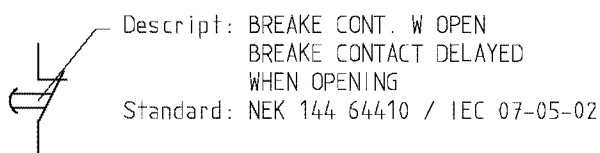
ES081A
MAKE CONT. DEL W CLOSE



ES082A
MAKE CONT. DEL W OPEN



ES083A
MAKE CONT. DEL. CLOS OPEN.



ES084A
BREAKE CONT. W OPEN

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ANNEX A - ELECTRO

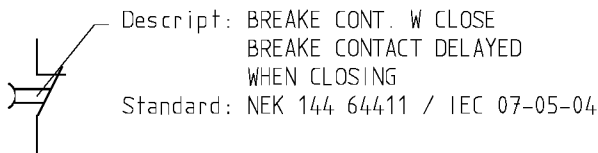
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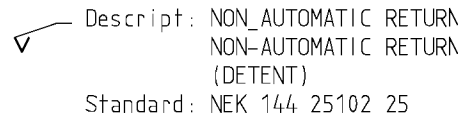
Documents

Document Sharing Hub



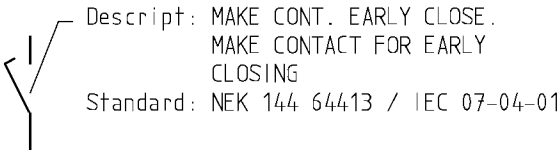
Descript: BREAKER CONT. W CLOSE
BREAKER CONTACT DELAYED
WHEN CLOSING
Standard: NEK 144 64411 / IEC 07-05-04

ES085A
BREAKER CONT. W CLOSE



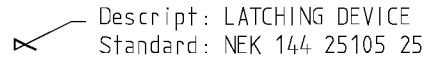
Descript: NON_AUTOMATIC RETURN
NON-AUTOMATIC RETURN
(DETENT)
Standard: NEK 144 25102 25

ES091A
NON_AUTOMATIC RETURN



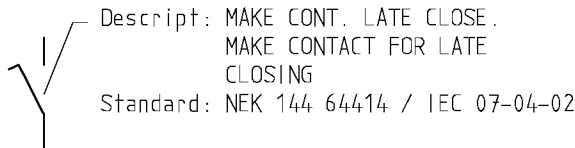
Descript: MAKE CONT. EARLY CLOSE.
MAKE CONTACT FOR EARLY
CLOSING
Standard: NEK 144 64413 / IEC 07-04-01

ES086A
MAKE CONT. EARLY CLOSE.



Descript: LATCHING DEVICE
Standard: NEK 144 25105 25

ES092A
LATCHING DEVICE



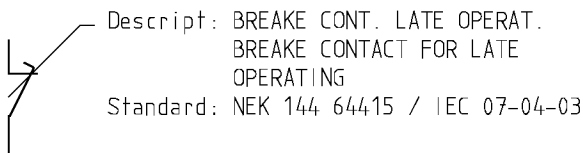
Descript: MAKE CONT. LATE CLOSE.
MAKE CONTACT FOR LATE
CLOSING
Standard: NEK 144 64414 / IEC 07-04-02

ES087A
MAKE CONT. LATE CLOSE.



Descript: MECHANICAL INTERLOCK
Standard: NEK 144 25108

ES093A
MECHANICAL INTERLOCK



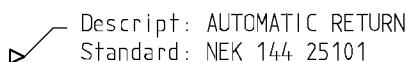
Descript: BREAKER CONT. LATE OPERAT.
BREAKER CONTACT FOR LATE
OPERATING
Standard: NEK 144 64415 / IEC 07-04-03

ES088A
BREAKER CONT. LATE OPERAT.



Descript: BREAKER CONT. EARLY OPEN.
BREAKER CONTACT FOR EARLY
OPENING
Standard: NEK 144 64416 / IEC 07-04-04

ES089A
BREAKER CONT. EARLY OPEN



Descript: AUTOMATIC RETURN
Standard: NEK 144 25101

ES090A
AUTOMATIC RETURN

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ANNEX A - ELECTRO

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 Descript: MECHANICAL COUPLING ENG.
MECHANICAL COUPLING
(CLUTCH ENGAGED POS)
Standard: NEK 144 25109

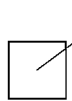
ES094A
MECHANICAL COUPLING ENG.

 Descript: MECHANICAL COUPLING DISENG.
MECHANICAL COUPLING
(CLUTCH DISENGAGED POS)
Standard: NEK 144 25109

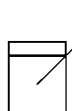
ES095A
MECHANICAL COUPLING DISENG.

 Descript: INDICATING INSTR. GEN SYMB
INDICATOR INSTRUMENT
GENERAL SYMBOL
Standard: NEK 144 81003 / IEC 08-01-01

ES096A
INDICATING INSTR. GEN SYMB

 Descript: RECORDING INSTR. GEN SYMB
RECORDING INSTRUMENT
GENERAL SYMBOL
Standard: NEK 144 81004 / IEC 08-01-02

ES097A
RECORDING INSTR. GEN SYMB

 Descript: INTERGRATING INSTR. GEN SYM
INTERGRATING INSTRUMENT
GENERAL SYMBOL
Standard: NEK 144 81005 / IEC 08-01-03

ES098A
INTERGRATING INSTR. GEN SYM

 Descript: THERMOMETER PYROMETER
THERMOMETER PYROMETER
Standard: NEK 144 81012

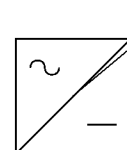
ES099A
THERMOMETER PYROMETER

 Descript: SYNCHRONOSCOPE
Standard: NEK 144 81017

ES100A
SYNCHRONOSCOPE

 Descript: SYNCHRONIZIER
Standard: NEK 144 81001

ES101A
SYNCHRONIZIER

 Descript: RECTIFIER
Standard: IEC 06-14-03

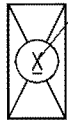
ES102A
RECTIFIER

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX A - ELECTRO

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ANNEX B HVAC (NORMATIVE)



Descript: EL. HEATER OR COOLER
+ =Heat
- =Cool

HE001A
EL. HEATER OR COOLER



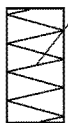
Descript: CENTRIFUGAL FAN

HM001A
CENTRIFUGAL FAN



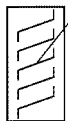
Descript: DAMPER HEATER OR COOLER
S=damper (Shut off)
P=damper (Pressure controll)
V=damper (const Volum)
N=damper (None return)
+=Heater
-=Cooler
+=Heater
-=Cooler

HE002A
DAMPER HEATER OR COOLER



Descript: AIR FILTER

HE003A
AIR FILTER



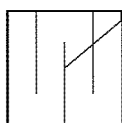
Descript: WEATHER LOUVRE

HE004A
WEATHER LOUVRE



Descript: COALESCHER

HE005A
COALESCHER



Descript: SOUND ATTENUATOR

HE006A
SOUND ATTENUATOR

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX B - HVAC

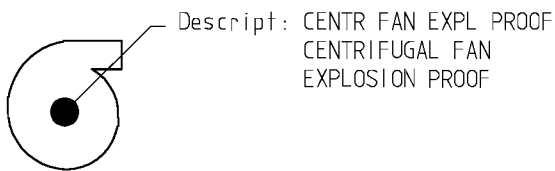
REV. 1 JULY 98

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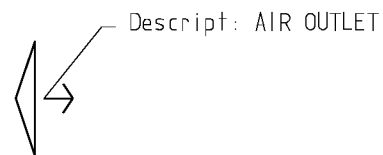


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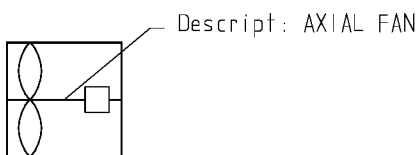
Document Sharing Hub



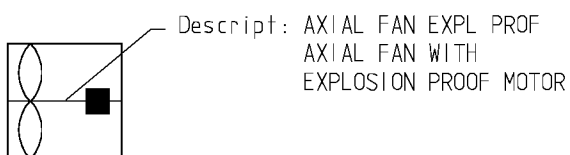
HM002A
CENTR FAN EXPL PROOF



HP005A
AIR OUTLET



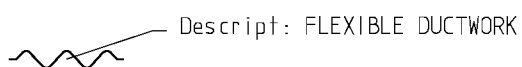
HM003A
AXIAL FAN



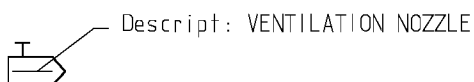
HM004A
AXIAL FAN EXPL PROOF



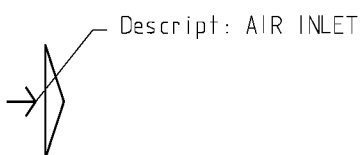
HP001A
FLEXIBLE CONECTION



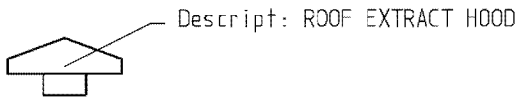
HP002A
FLEXIBLE DUCTWORK



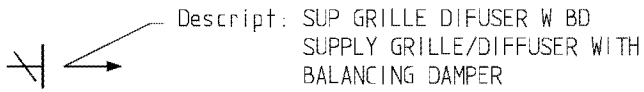
HP003A
VENTILATION NOZZLE



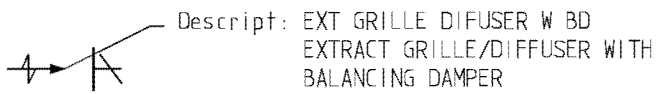
HP004A
AIR INLET



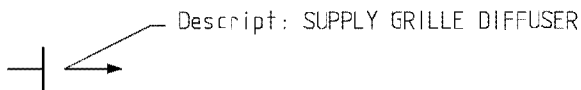
HP006A
ROOF EXTRACT HOOD



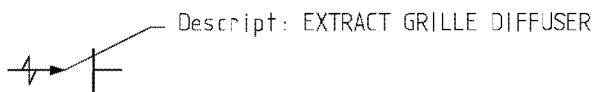
HP007A
SUP GRILLE DIFUSER W BD



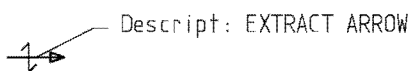
HP008A
EXT GRILLE DIFUSER W BD



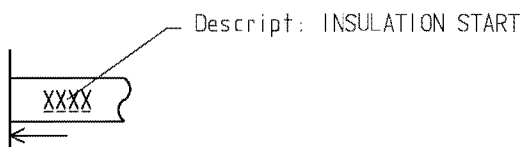
HP009A
SUPPLY GRILLE DIFFUSER



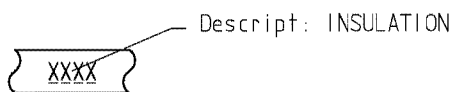
HP010A
EXTRACT GRILLE DIFFUSER



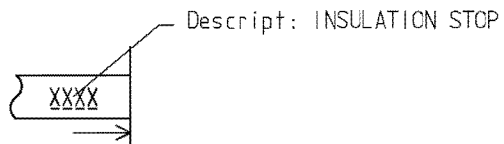
HP011A
EXTRACT ARROW



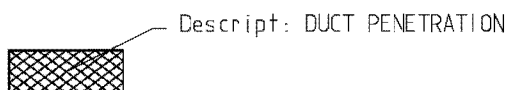
HP012A
INSULATION START



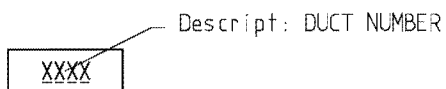
HP013A
INSULATION



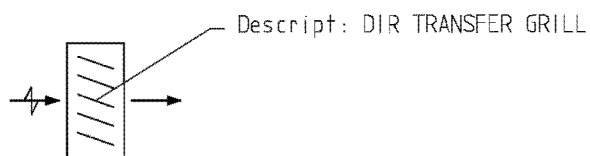
HP014A
INSULATION STOP



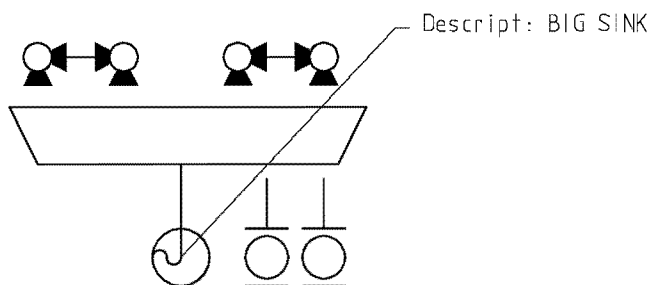
HP015A
DUCT PENETRATION



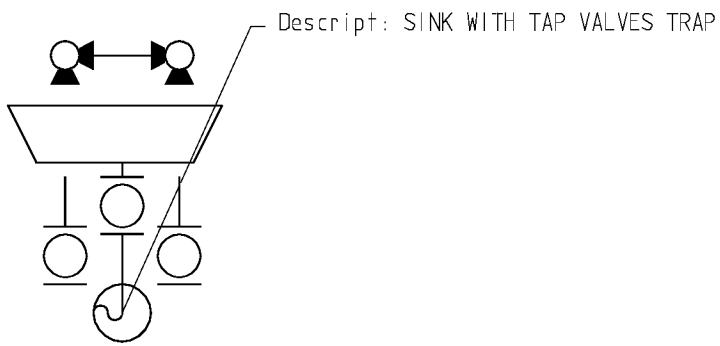
HP016A
DUCT NUMBER



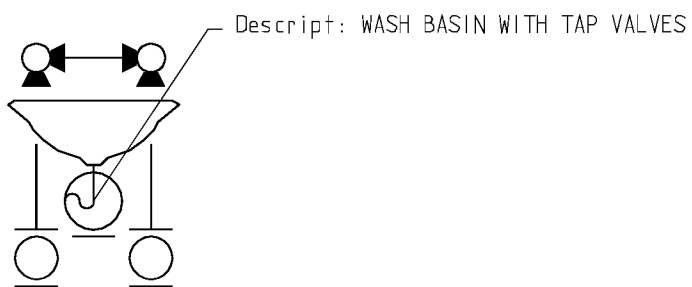
HP017A
DIR TRANSFER GRILL



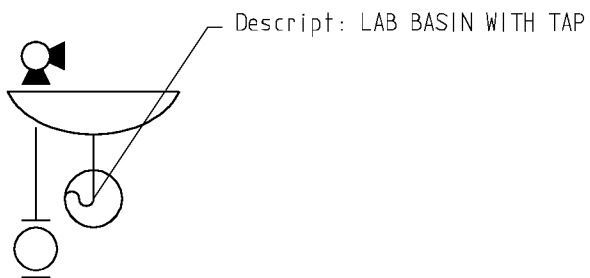
HV001A
BIG SINK



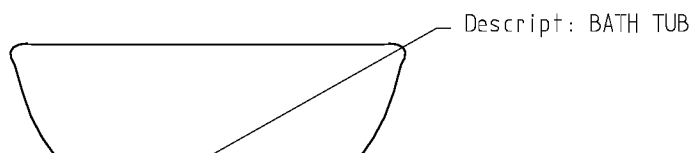
HV002A
SINK WITH TAP VALVES TRAP



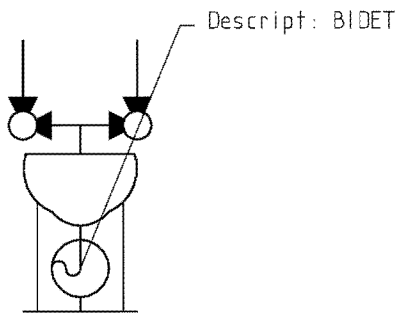
HV003A
WASH BASIN WITH TAP VALVES



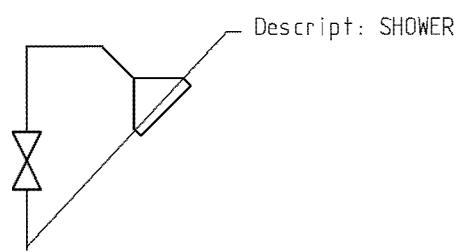
HV004A
LAB BASIN WITH TAP



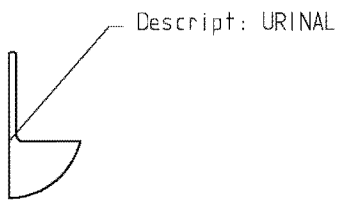
HV005A
BATH TUB



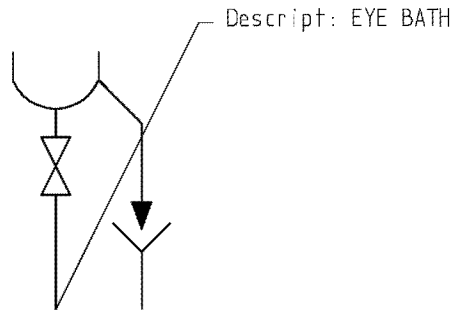
HV006A
BIDET



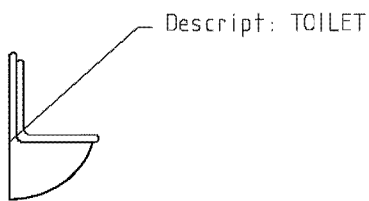
HV012A
SHOWER



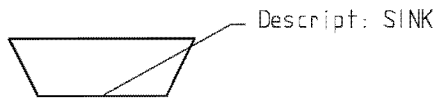
HV007A
URINAL



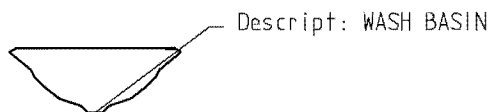
HV013A
EYE BATH



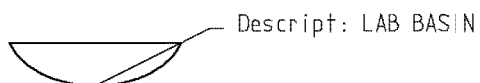
HV008A
TOILET



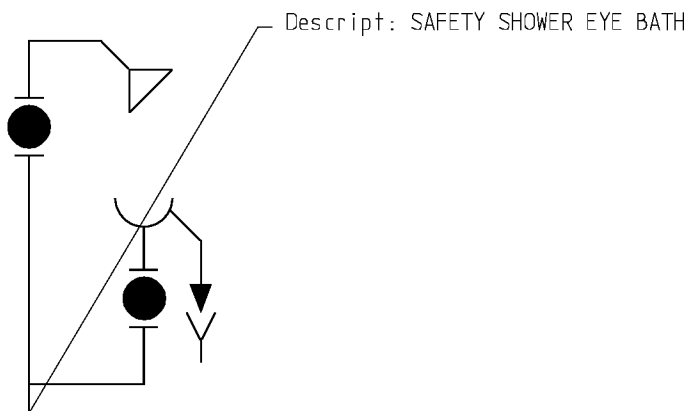
HV009A
SINK



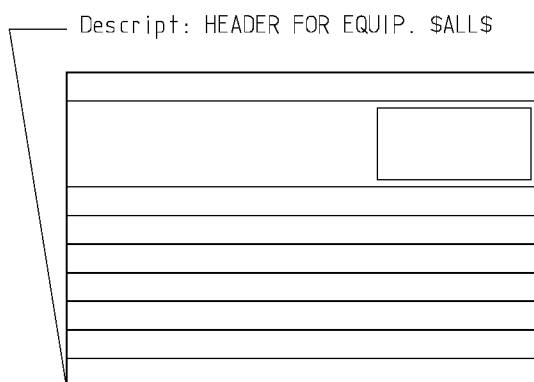
HV010A
WASH BASIN



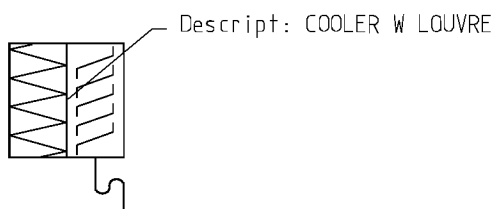
HV011A
LAB BASIN



HV014A
SAFETY SHOWER EYE BATH



HZ001A
HEADER FOR EQUIP. SALLS

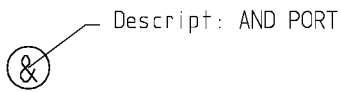


HZ002A
COOLER W LOUVRE

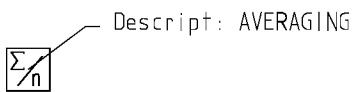
ANNEX C INSTRUMENT (NORMATIVE)



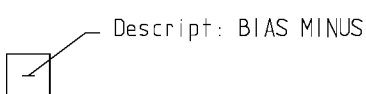
IF001A
AMPLIFIER



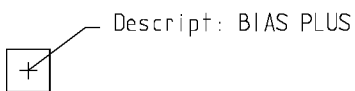
IF002A
AND PORT



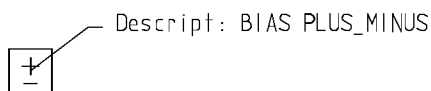
IF003A
AVERAGING



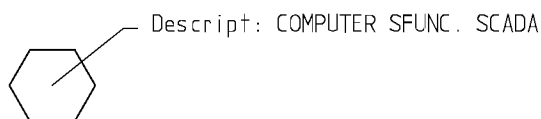
IF004A
BIAS MINUS



IF005A
BIAS PLUS



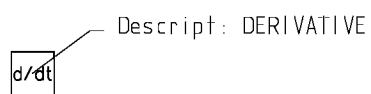
IF006A
BIAS PLUS_MINUS



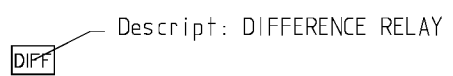
IF007A
COMPUTER SFUNC. SCADA



IF008A
CURRENT TO PNEUMATIC



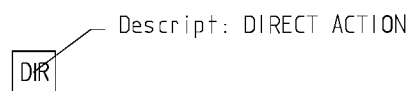
IF009A
DERIVATIVE



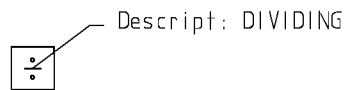
IF010A
DIFFERENCE RELAY



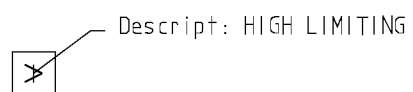
IF011A
DIGITAL TO DIGITAL



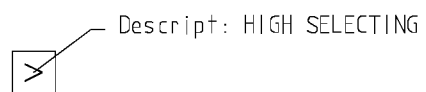
IF012A
DIRECT ACTION



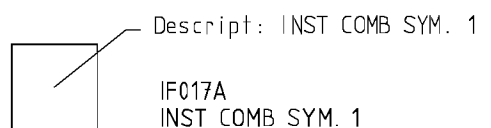
IF013A
DIVIDING



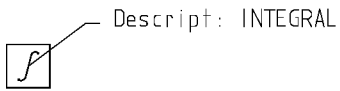
IF014A
HIGH LIMITING



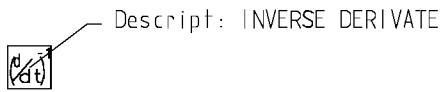
IF015A
HIGH SELECTING



IF017A
INST COMB SYM. 1
NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX C - INSTRUMENT



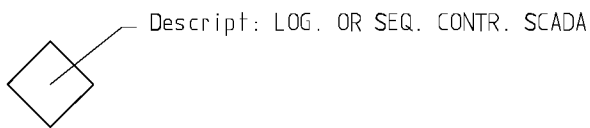
IF019A
INTEGRAL



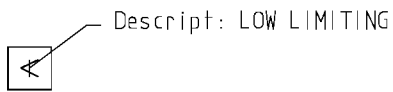
IF020A
INVERSE DERIVATE



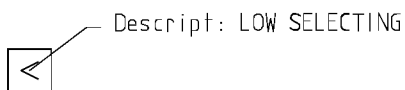
IF021A
INVERTER



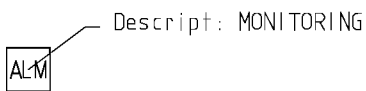
IF022A
LOG. OR SEQ. CONTR. SCADA



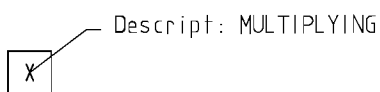
IF023A
LOW LIMITING



IF024A
LOW SELECTING



IF025A
MONITORING

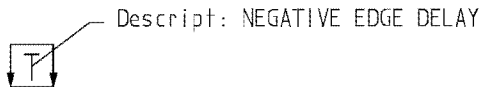


IF026A
MULTIPLYING

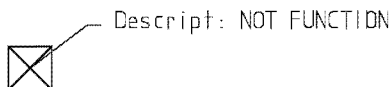
NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX C – INSTRUMENT

REV. 1 JULY 98

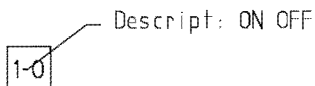
PAGE 2 OF 9



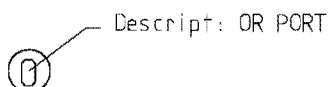
IF027A
NEGATIVE EDGE DELAY



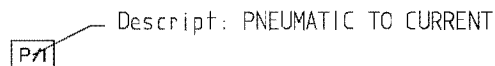
IF028A
NOT FUNCTION



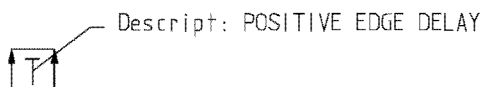
IF029A
ON OFF



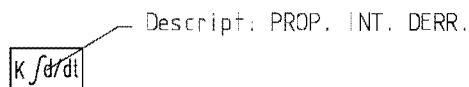
IF030A
OR PORT



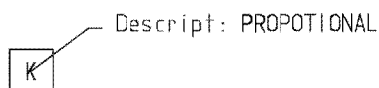
IF031A
PNEUMATIC TO CURRENT



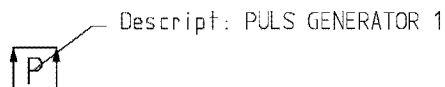
IF032A
POSITIVE EDGE DELAY



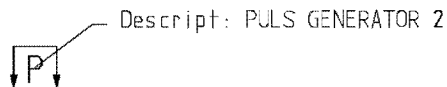
IF033A
PROP. INT. DERR.



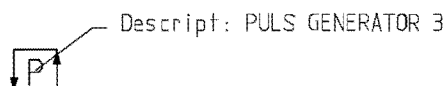
IF034A
PROPOTIONAL



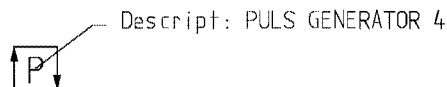
IF035A
PULS GENERATOR 1



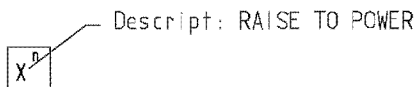
IF036A
PULS GENERATOR 2



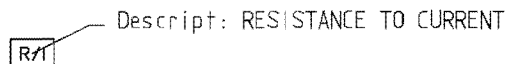
IF037A
PULS GENERATOR 3



IF038A
PULS GENERATOR 4



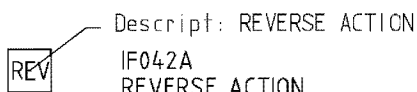
IF039A
RAISE TO POWER



IF040A
RESISTANCE TO CURRENT



IF041A
RESITANCE TO PNEUMATIC



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ANNEX C – INSTRUMENT

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Descript: REVERSE PROPORTIONAL

IF043A
REVERSE PROPORTIONAL



Descript: TIMER UP

IF052A
TIMER UP



Descript: ROOT EXTRACT

IF044A
ROOT EXTRACT



Descript: VEL LIMITER

IF053A
VEL LIMITER



Descript: SPLITT PORT

IF046A
SPLITT PORT



Descript: VOLTAGE TO CURRENT

IF054A
VOLTAGE TO CURRENT



Descript: SQUARE ROOT

IF047A
SQUARE ROOT



Descript: VOLTAGE TO PNEUMATIC

IF055A
VOLTAGE TO PNEUMATIC



Descript: SUBTRACTING

IF048A
SUBTRACTING



Descript: SUMMING

IF049A
SLIMMING



Descript: TIME

IF050A
TIME



Descript: TIMER DOWN

IF051A
TIMER DOWN

NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX C – INSTRUMENT

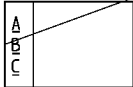
REV. 1 JULY 98

PAGE 4 OF 9



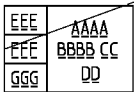
Documents

Document Sharing Hub



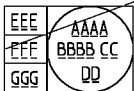
Descript: COBINATED SYMBOL
 COMBINE SYMOL FOR INDICATION
 OF FUNCTION IN
 DEDICATED COMPUTER SYSTEM
 A
 B
 C
 B
 C

IM001A
COBINATED SYMBOL



Descript: CONTROL ELEMENT
 AAAA
 BBBB
 CC
 DD
 EEE
 FFF
 EEE
 FFF
 GGG

IM003A
CONTROL ELEMENT



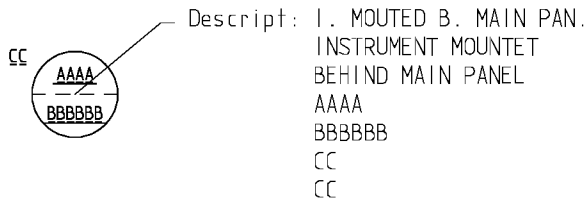
Descript: CONTROL ELEMENT
 AAAA
 BBBB
 CC
 DD
 EEE
 FFF
 EEE
 FFF
 GGG

IM004A
CONTROL ELEMENT

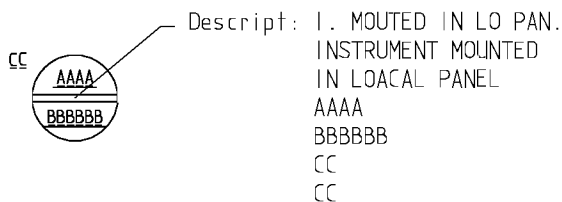


Descript: FIELD M INSTR OR TAG BALOON
 AAAA
 BBBBBB
 CC

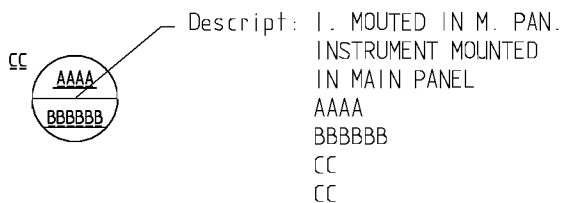
IM005A
FIELD M INSTR OR TAG BALOON



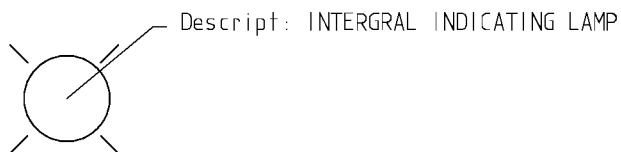
IM006A
I. MOUTED B. MAIN PAN.



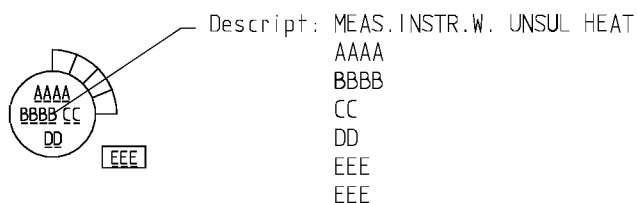
IM007A
I. MOUTED IN LO PAN.



IM008A
I. MOUTED IN M. PAN.

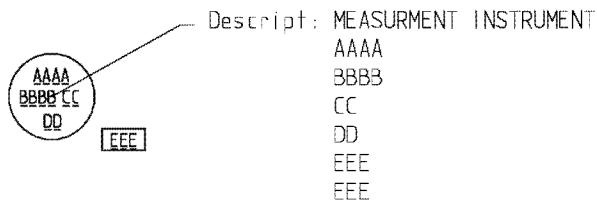


IM009A
INTERGRAL INDICATING LAMP

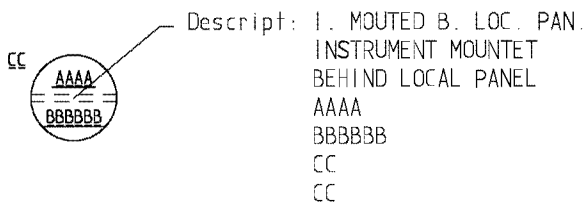


IM010A
MEAS.INSTR.W. UNSUL HEAT

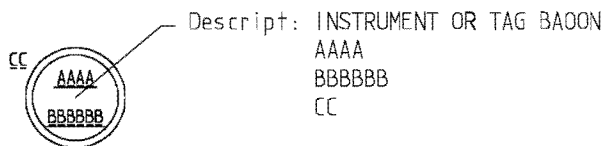
NORSOK STANDARD Z-004 CAD SYMBOL LIBRARY
ANNEX C - INSTRUMENT REV. 1 JULY 98



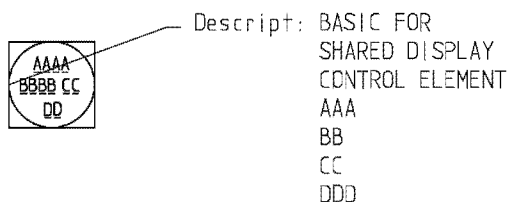
IM011A
MEASUREMENT INSTRUMENT



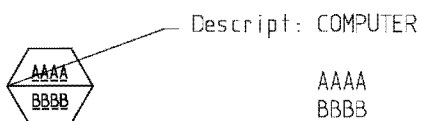
IM012A
I. MOUNTED B. LOC. PAN.



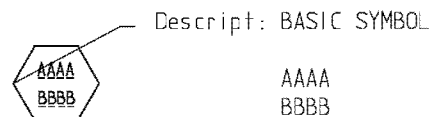
IM013A
INSTRUMENT OR TAG BAOON



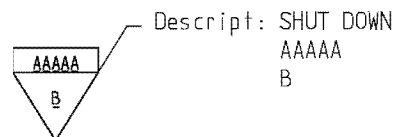
IM014A
SHARED DISPL. CONTROL ELEM.



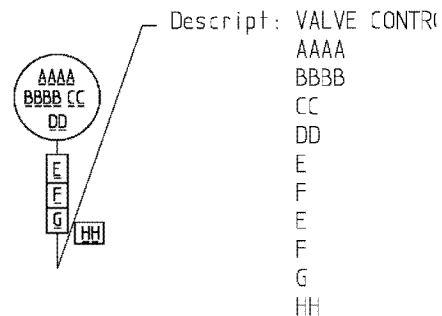
IM015A
COMPUTER BASED OPERATER



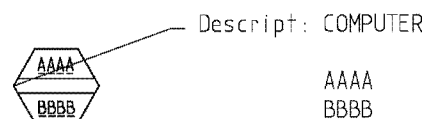
IM016A
BASIC COMPUTER BASED



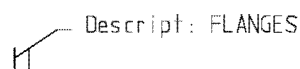
IM017A
SHUT DOWN



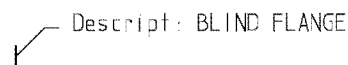
IM018A
VALVE CONTROL



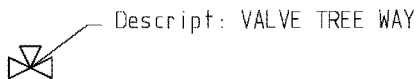
IM019A
COMPUTER CONTROL ROOM



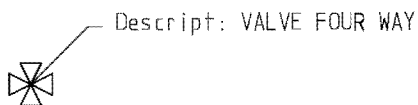
IV001A
FLANGES



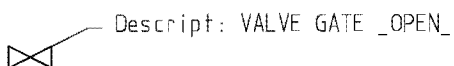
IV002A
BLIND FLANGE



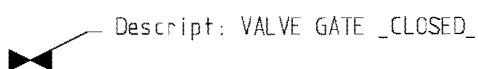
IV003A
VALVE TREE WAY



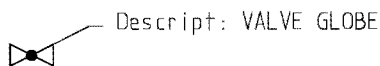
IV004A
VALVE FOUR WAY



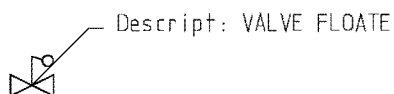
IV005A
VALVE GATE _OPEN_



IV006A
VALVE GATE _CLOSED_



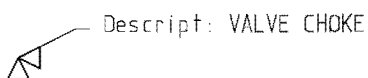
IV007A
VALVE GLOBE



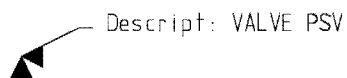
IV008A
VALVE FLOATE



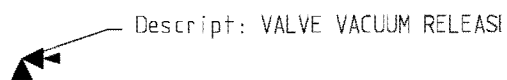
IV009A
VALVE MIN FLOW AND CHECK



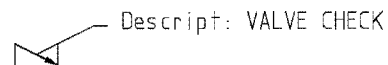
IV010A
VALVE CHOKE



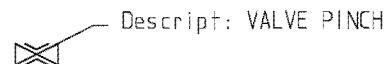
IV011A
VALVE PSV



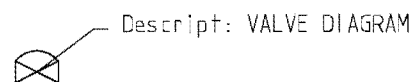
IV012A
VALVE VACUUM RELEASE



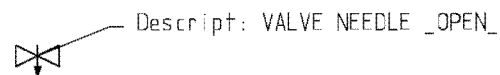
IV013A
VALVE CHECK



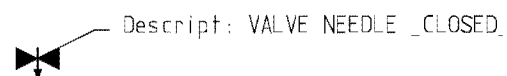
IV014A
VALVE PINCH



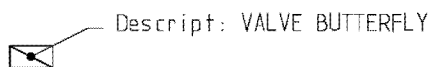
IV015A
VALVE DIAGRAM



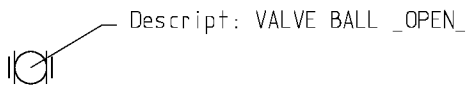
IV016A
VALVE NEEDLE _OPEN_



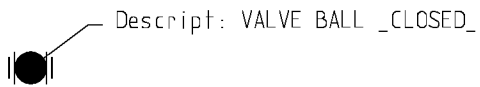
IV017A
VALVE NEEDLE _CLOSED_



IV018A
VALVE BUTTERFLY



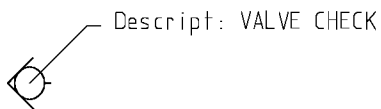
IV019A
VALVE BALL _OPEN_



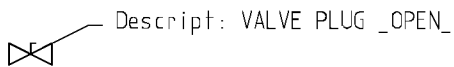
IV020A
VALVE BALL _CLOSED_



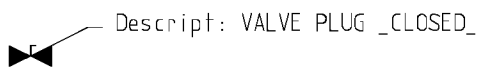
IV021A
VALVE BLOCK\$BLEND _INSTR_



IV022A
VALVE CHECK

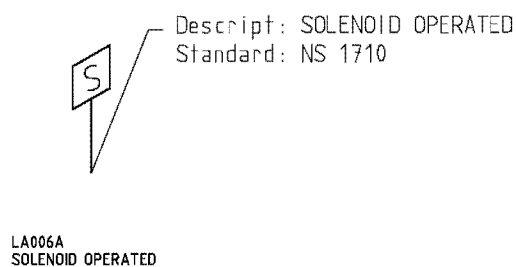
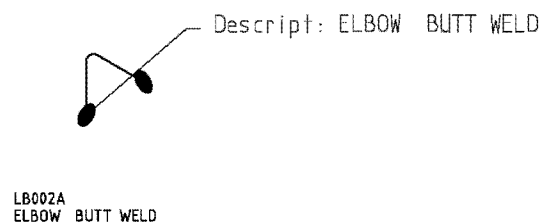
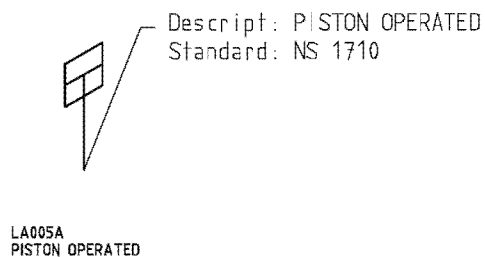
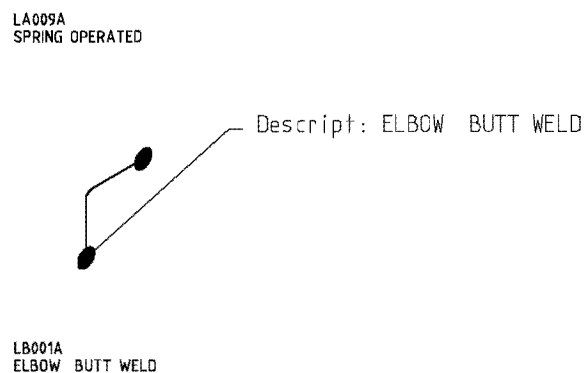
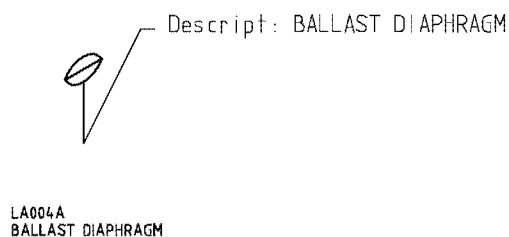
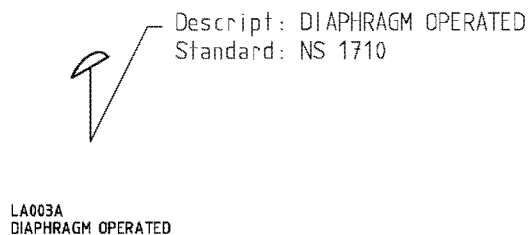
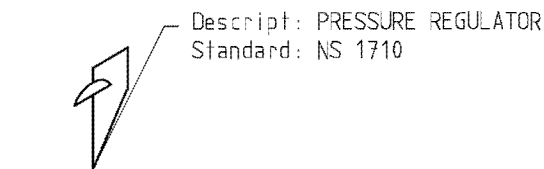
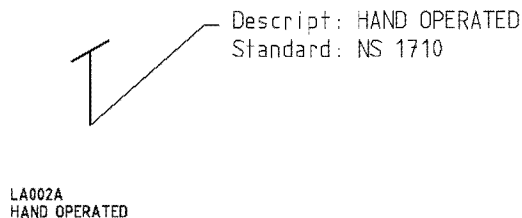
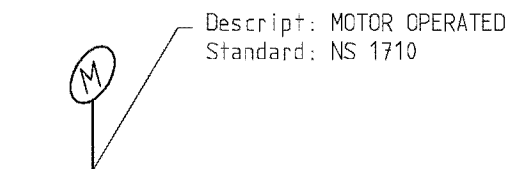
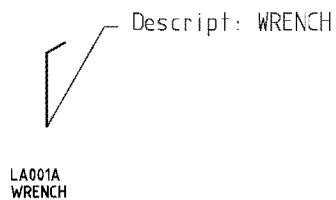


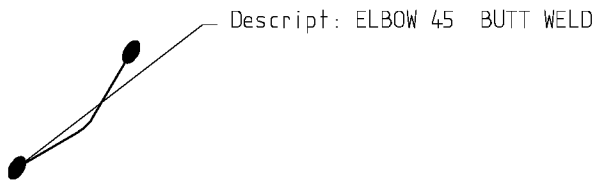
IV023A
VALVE PLUG _OPEN_



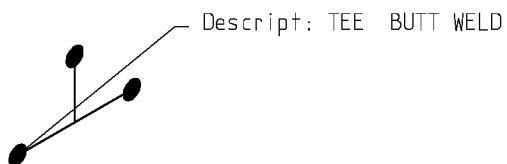
IV024A
VALVE PLUG _CLOSED_

ANNEX D PIPING ISOMETRIC (NORMATIVE)

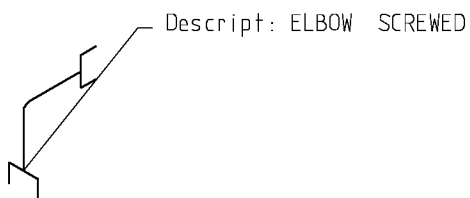




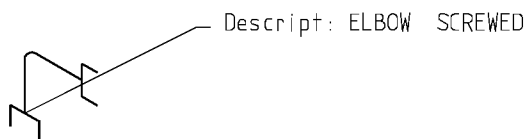
LB003A
ELBOW 45 BUTT WELD



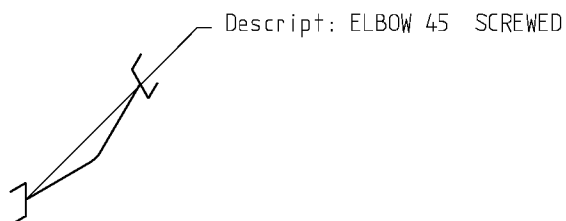
LB004A
TEE BUTT WELD



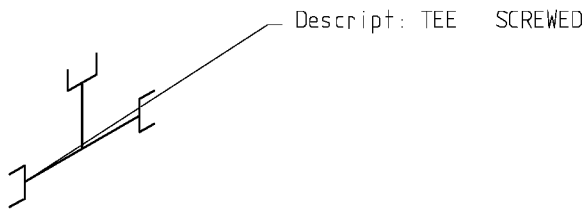
LB005A
ELBOW SCREWED



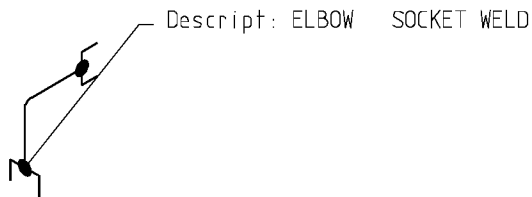
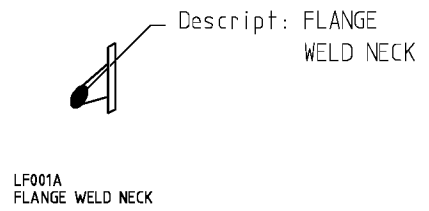
LB006A
ELBOW SCREWED



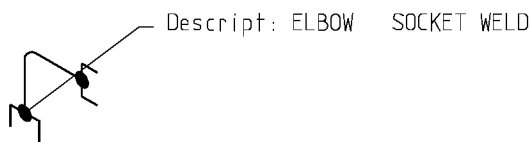
LB007A
ELBOW 45 SCREWED



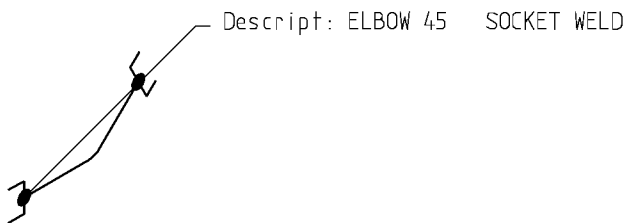
LB008A
TEE SCREWED



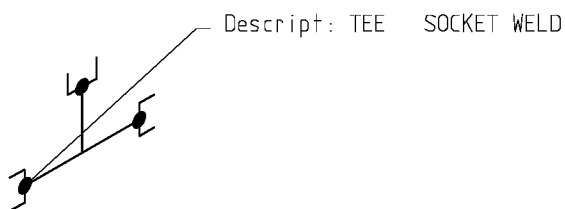
LB009A
ELBOW SOCKET WELD



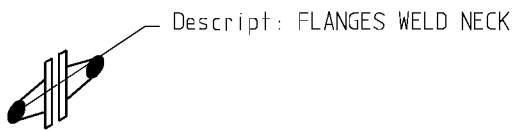
LB010A
ELBOW SOCKET WELD



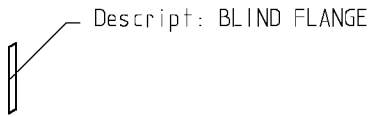
LB011A
ELBOW 45 SOCKET WELD



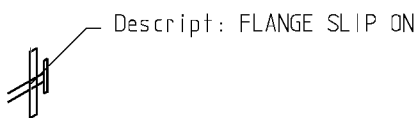
LB012A
TEE SOCKET WELD



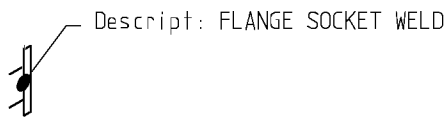
LF002A
FLANGES WELD NECK



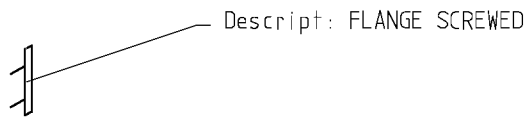
LF003A
BLIND FLANGE



LF004A
FLANGE SLIP ON



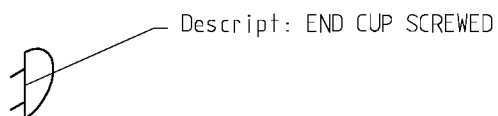
LF005A
FLANGE SOCKET WELD



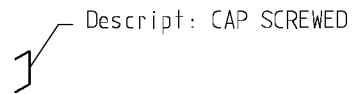
LF006A
FLANGE SCREWED



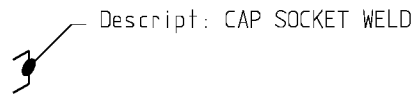
LF007A
END CUP WELD



LF008A
END CUP SCREWED



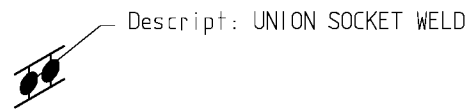
LF009A
CAP SCREWED



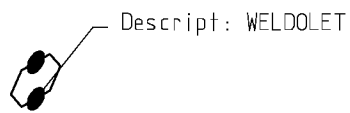
LF010A
CAP SOCKET WELD



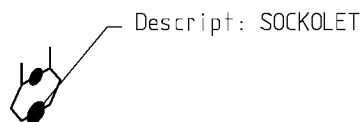
LF011A
UNION SCREWED



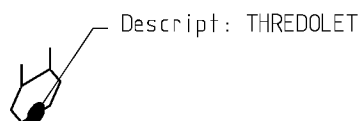
LF012A
UNION SOCKET WELD



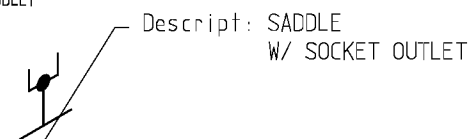
L0001A
WELDOLET



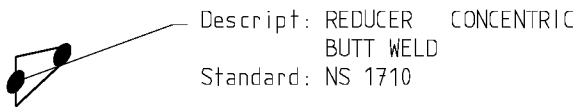
L0002A
SOCKETLET



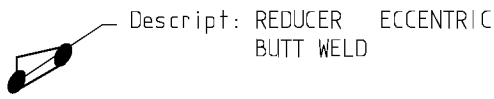
L0003A
THREDOLET



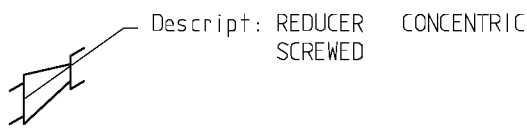
L0004A
SADDLE



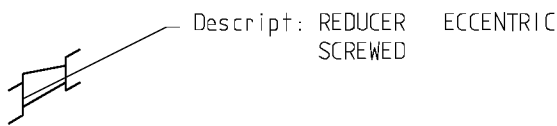
LR001A
REDUCER CONCENTRIC



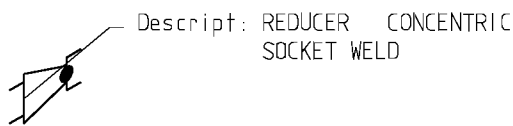
LR002A
REDUCER ECCENTRIC



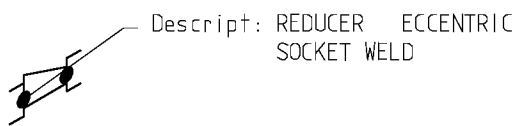
LR003A
REDUCER CONCENTRIC



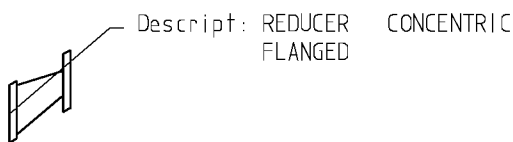
LR004A
REDUCER ECCENTRIC



LR005A
REDUCER CONCENTRIC



LR006A
REDUCER ECCENTRIC



LR007A
REDUCER CONCENTRIC