INTERNATIONAL STANDARD

ISO 561

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Coal preparation plant — Graphical symbols

Appareils utilisés dans la préparation des charbons — Symboles graphiques

Reference number
ISO 561 : 1989 (E)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 561 was prepared by Technical Committee ISO/TC 27, *Solid mineral fuels.*

This second edition cancels and replaces the first edition (ISO 561 : 1974), of which it constitutes a minor technical revision.

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Introduction

The symbols included in this International Standard have been selected in accordance with the following principles:

a) the items of plant listed should be widely used for coal preparation purposes and should be identified on flowsheets;

b) the symbols should be easy to draw and readily distinguishable from one another;

c) the symbols should preferably give some indication of the principle of the operation involved, but should not represent the appearance of any particular type of machine;

d) where a single symbol represents a group of items for which separate symbols are standardized nationally, it is preferable that the ISO symbols are readily distinguishable from any one of the national symbols.

It is expected that the general adoption of the basic symbols in this standard will simplify the exchange of information between those concerned with the design, construction and operation of coal preparation plant.

Coal preparation plant — Graphical symbols

1 Scope

This International Standard specifies basic symbols for use in flowsheets (see ISO 924) and other diagrams relating to coal preparation plant.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 924 : 1975, *Coal preparation plant — Principles and conventions for flowsheets.*

ISO 3511-1 : 1977, *Process measurement control functions and instrumentation — Symbolic representation — Part 1: Basic requirements.*

ISO 3511-2 : 1984, *Process measurement control functions and instrumentation — Symbolic representation — Part 2: Extension of basic requirements.*

ISO 3511-3 : 1984, *Process measurement control functions and instrumentation — Symbolic representation — Part 3: Detailed symbols for instrument interconnection diagrams.*

3 Convention for drawing of symbols

The following conventions shall be adopted for drawing the standard symbols:

a) the plant symbols shall be shown by thick lines and the product flow by fine lines;

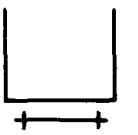
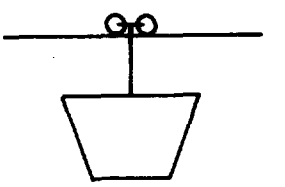
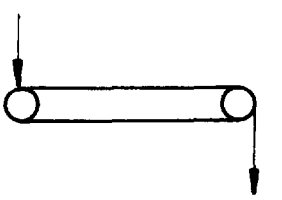
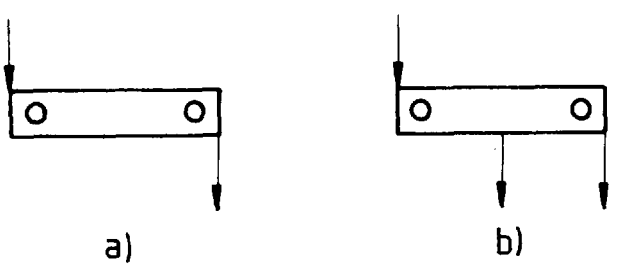
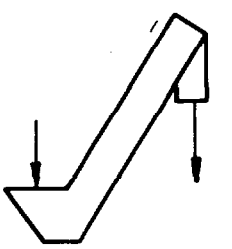
b) in general, the flowlines shall enter the symbol from above or from the left and shall leave the symbol downwards or to the right;

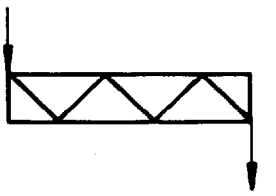
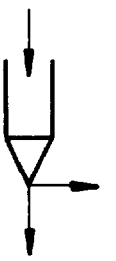
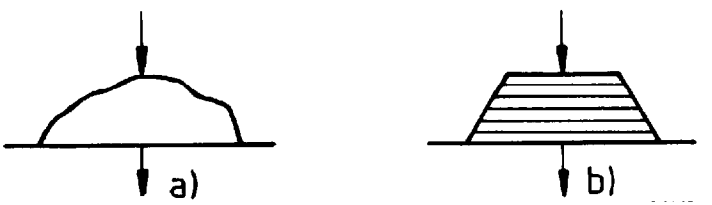
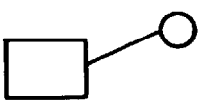
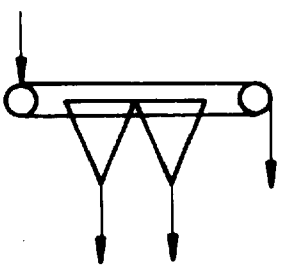
c) where more than one product enters or leaves an item of plant, the number of entry and exit arrows shall be varied accordingly.

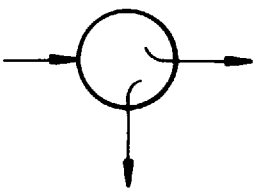
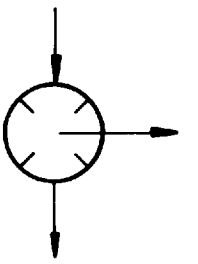
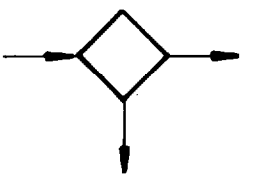
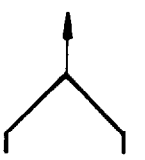
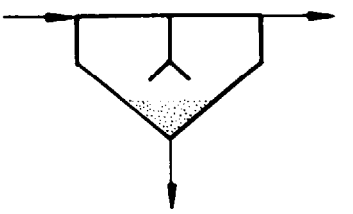
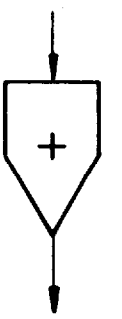
NOTE — Symbols relating to process controls can be obtained from relevant International Standards. See for example ISO 3511-1, ISO 3511-2 and ISO 3511-3.

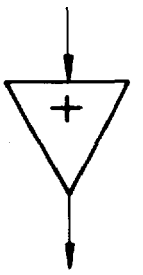
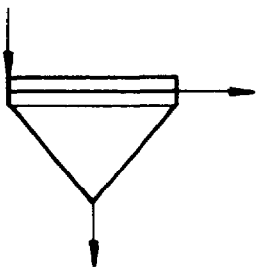
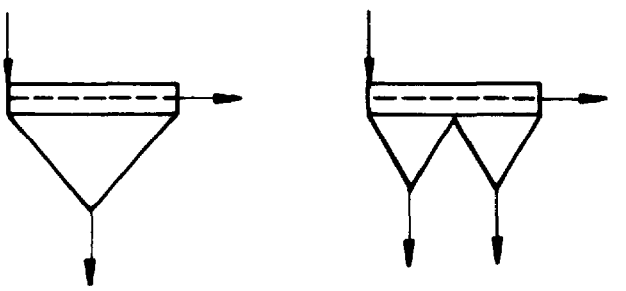
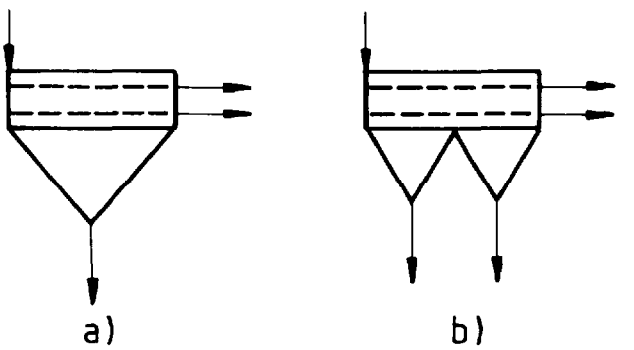
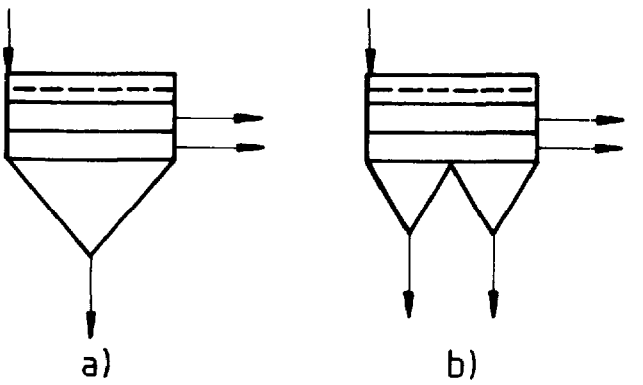
4 Basic symbols

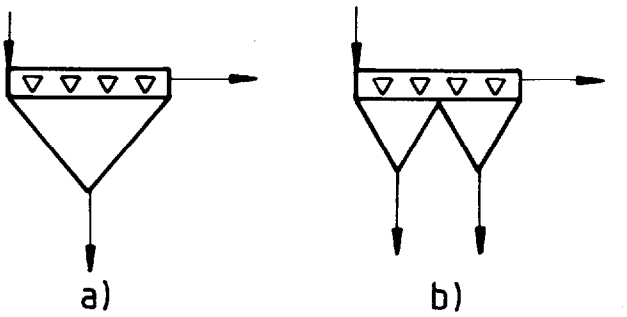
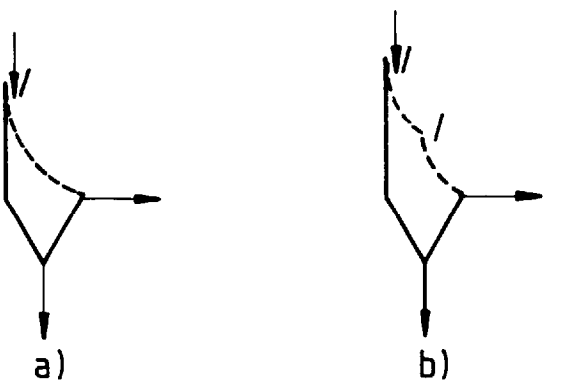
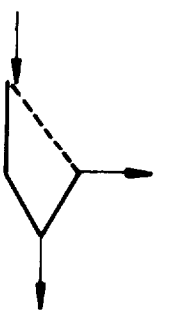
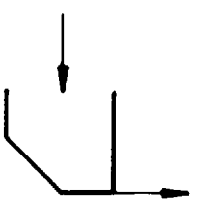
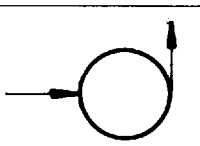
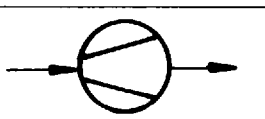
The basic symbols and an alphabetical index are given in the following pages.

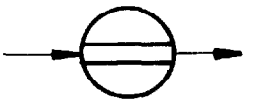
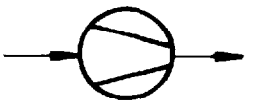
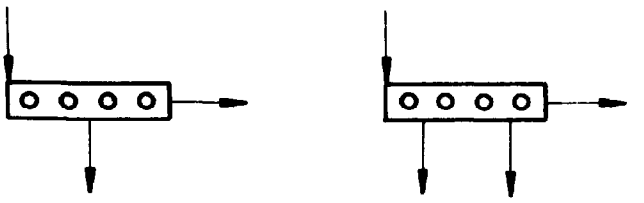
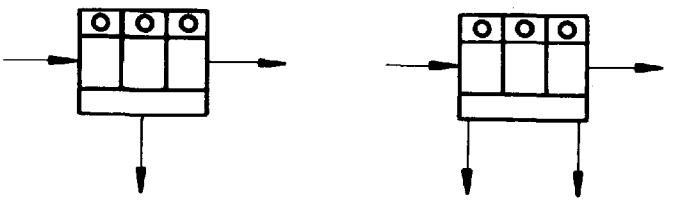
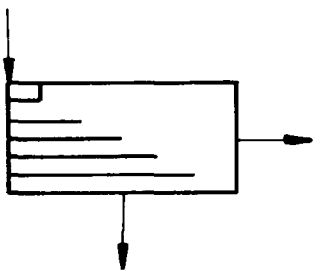
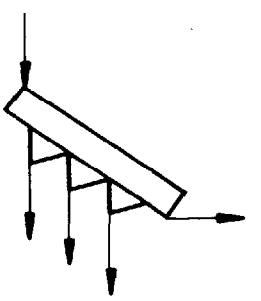
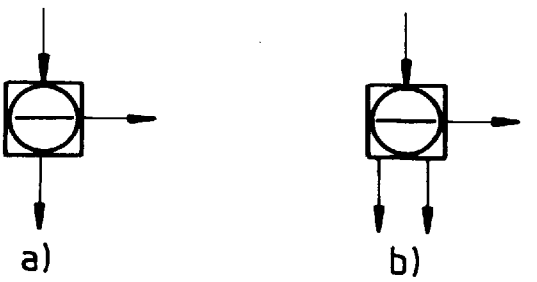
No.	Item	Symbol
1	Wagon	
2	Tub	
3	Wagon tippler	
4	Tub tippler	
5	Aerial ropeway	
6	Conveyor	
7	Conveyor, scraper a) One discharge b) Two discharges	
8	Elevator	

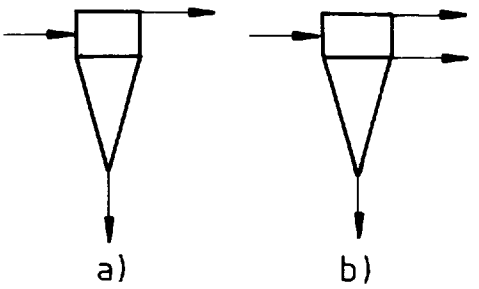
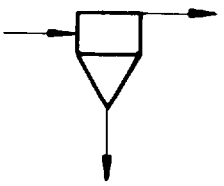
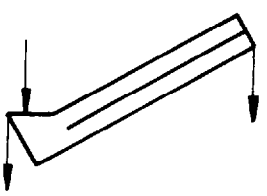
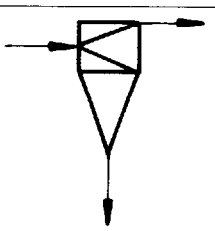
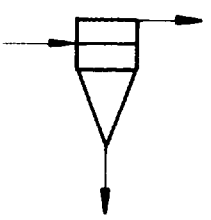
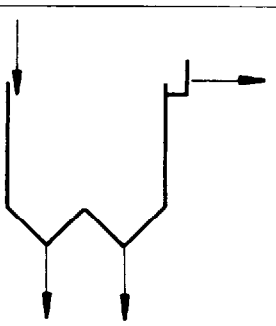
No.	Item	Symbol
9	Conveyor, screw	
10	Bunker	
11	Bunker (drainage)	
12	a) Stockpile b) Layered stockpile	
13	Bucket wheel reclaimer	
14	Feeder	
15	Picking belt	

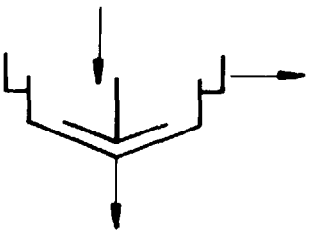
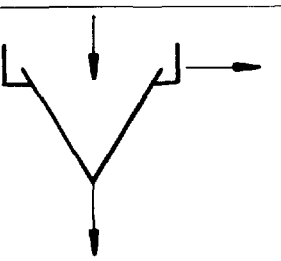
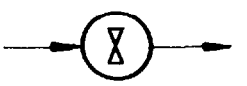
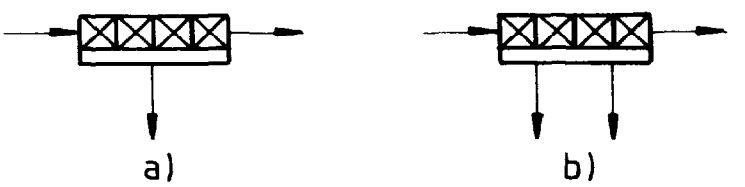
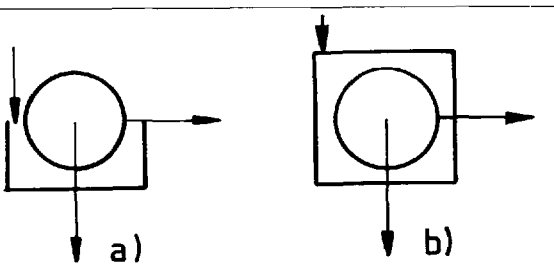
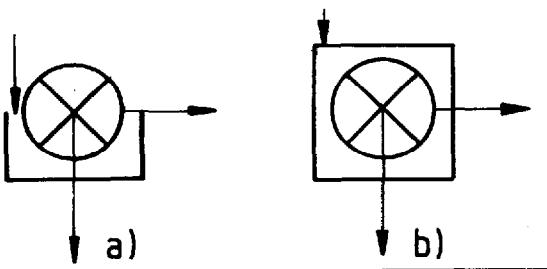
No.	Item	Symbol
16	Picking table (circular)	
17	Rotary breaker	
18	De-duster	
19	Dust aspiration point	
20	Dust collector	
21	Crusher	

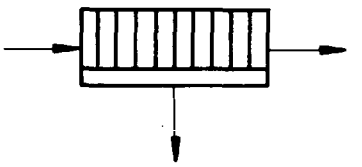
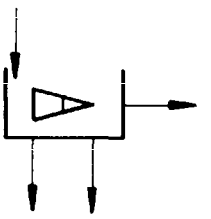
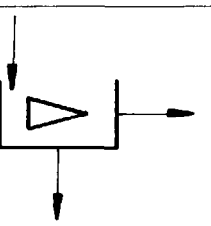
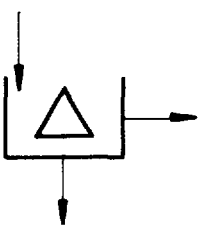
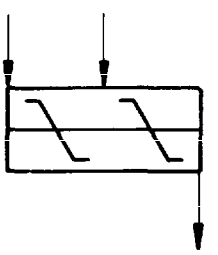
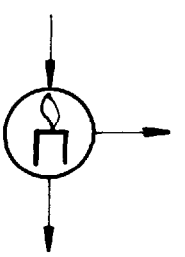
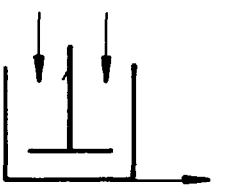
No.	Item	Symbol
22	Pulverizer	
23	Screen, grizzly or bar	
24	Screen a) One under-product b) Two under-product	
25	Screen (double deck) a) One under-product b) Two under-product	
26	Screen (partitioned deck) a) One under-product b) Two under-product	

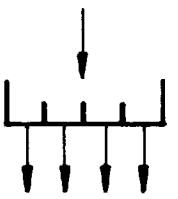
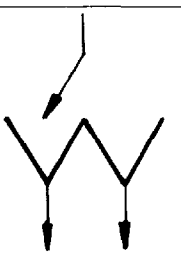
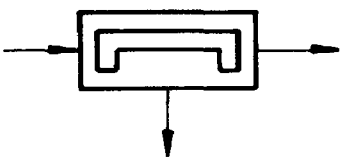
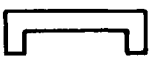
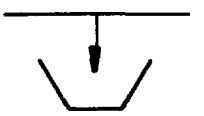
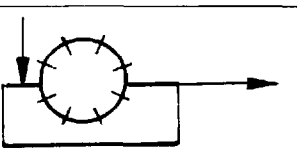
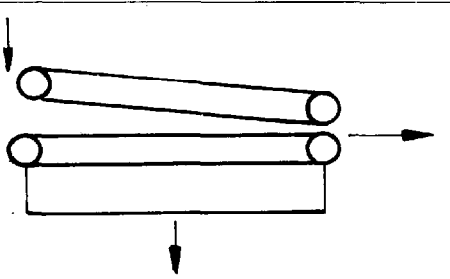
No.	Item	Symbol
27	Screen, dewatering a) One under-product b) Two under-product	
28	Sieve bend Curved sieve a) Single b) Double	
29	Fixed screen	
30	Water spray	
31	Pump sump	
32	Pump	
33	Vacuum pump	

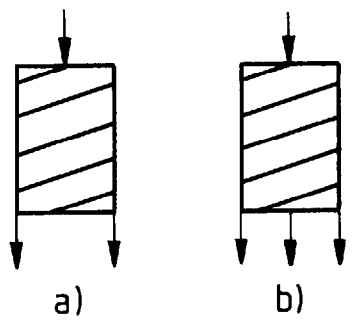
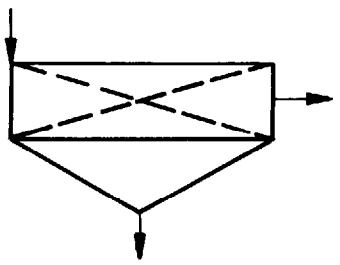
No.	Item	Symbol
34	Fan	
35	Compressor	
36	Dry cleaner a) Two product b) Three product	
37	Jig a) Two product b) Three product	
38	Concentrating table	
39	Trough washer	
40	Dense medium separator a) Two product b) Three product	

No.	Item	Symbol
41	Cyclone separator (dense medium) a) Two product b) Three product	
42	Cyclone separator (water only)	
43	Mechanical classifier	
44	Cyclone classifier	
45	Cyclone thickener	
46	Spitzkasten	

No.	Item	Symbol
47	Thickener	
48	Settling cone Conical settling tank	
49	Settling pond	
50	Conditioner	
51	Froth flotation cells a) Two product b) Three product	
52	Drum filter a) Vacuum b) Pressure	
53	Disc filter a) Vacuum b) Pressure	

No.	Item	Symbol
54	Pressure filter	
55	Screen-bowl centrifuge	
56	Solid-bowl centrifuge	
57	Basket centrifuge	
58	Mixer (multiple components)	
59	Dryer, thermal	
60	Mixing tank (multiple components)	

No.	Item	Symbol
61	Distributor	
62	Splitter box	
63	Magnetic separator (medium)	
64	Magnetic separator (tramp iron)	
65	Weigher	
66	Mechanical sampler	
67	Reagent feeder	
68	Pressure belt filter	

No.	Item	Symbol
69	Spiral a) Two product b) Three product	
70	Probability screen	

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Descriptors : minerals and ores, solid fuels, coal, coal preparation, industrial facilities, graphic symbols.

Price based on 13 pages