CPC  COOPERATIVE PATENT CLASSIFICATION

B  PERFORMING OPERATIONS; TRANSPORTING
(NOTES omitted)

PRINTING

B41  PRINTING; LINING MACHINES; TYPEWRITERS; STAMPS

B41F  PRINTING MACHINES OR PRESSES (manifolding devices or office printing machines
B41L)

NOTE
Attention is drawn to Notes 1 and 2 following the title of subclass B41L.

WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00  Platen presses, i.e. presses in which printing is
effected by at least one essentially-flat pressure-
applying member co-operating with a flat type-bed
1/02  .  Hand-operated platen presses
1/04  .  for mono-impression printing, e.g. on sheets
1/06  .  with platen maintained parallel to bed during
movement
1/08  .  on webs
1/10  .  for multi-impression printing in one or more
colours, e.g. on webs
1/12  .  .  .  on sheets
1/14  .  .  .  using swinging platens, or forme supports
1/16  .  .  .  for offset printing ([(pad printing B41F 17/001)]
1/18  .  .  .  for lithography
1/20  .  .  .  for perfecting sheets, i.e. for printing on both sides
of sheets
1/22  .  .  .  specially adapted for printing heads, e.g. letter heads
1/24  .  .  .  specially adapted for proof printing
1/26  .  .  .  Details
1/265  .  .  .  [Conveying webs (in general B65H)]
1/28  .  .  .  Sheet-conveying, -aligning or -clamping devices
1/30  .  .  .  using rotary grippers
1/32  .  .  .  using air pressure, e.g. vacuum
1/34  .  .  .  Registering devices, e.g. gauges
1/36  .  .  .  .  .  Clamps for conveying sheets and for holding
same on the platens ([clamps in manifolding
devices B41L 3/02])
1/38  .  .  .  Platens or type-beds
1/40  .  .  .  Inking units ([(for pad printing B41F 17/001)]
1/42  .  .  .  using flat inking elements, e.g. discs
1/44  .  .  .  using inking ribbons
1/46  .  .  .  using rollers
1/48  .  .  .  pivoting around the platen or base
1/50  .  .  .  supported on carriages for movement in or on
runways
1/52  .  .  .  .  Carriage driving gear
1/54  .  .  .  Printing-pressure control devices
1/56  .  .  .  Auxiliary devices
1/565  .  .  .  Numbering devices (stamping numbering
devices B41K))
1/58  .  .  .  Arrangements of counting devices for counting
sheets
1/60  .  .  .  Safety devices
1/62  .  .  .  for preventing injury to operator
1/64  .  .  .  .  .  to the hands of the operator
1/66  .  .  .  responsive to incorrect operating conditions
3/00  Cylinder presses, i.e. presses essentially comprising
at least one cylinder co-operating with at least one
flat type-bed
3/02  .  .  .  with impression cylinder or cylinders rotating
unidirectionally
3/04  .  .  .  intermittently; Stop-cylinder presses
3/06  .  .  .  continuously
3/08  .  .  .  Single-revolution presses
3/10  .  .  .  Two-revolution presses
3/12  .  .  .  Twin presses, i.e. with more than one cylinder or
type-bed
3/14  .  .  .  with impression cylinder or cylinders rotating in
opposite directions during each working cycle
3/16  .  .  .  Twin presses, i.e. with more than one cylinder or
type-bed
3/18  .  .  .  of special construction or for particular purposes
3/20  .  .  .  with fixed type-beds and travelling impression
cylinders
3/22  .  .  .  with more than one type-bed
3/24  .  .  .  with cylinders travelling around type-beds
having upper and lower printing surfaces
3/26  .  .  .  with type-beds and impression cylinders
simultaneously movable relative to one another
3/28  .  .  .  Proof-print presses for relief printing, lithography
or intaglio printing, i.e. presses for checking
accuracy of printing surfaces
3/30  .  .  .  for lithography (proof-print presses B41F 3/28)
3/32  .  .  .  Damping devices
3/34  .  .  .  for offset printing
3/36  .  .  .  for intaglio or heliogravure printing (proof-print
presses B41F 3/28)
3/38  .  .  .  Wiping mechanisms
3/40  .  .  .  for perfecting sheets, i.e. for printing on both
sides thereof
Rotary machines

5/00 Rotary letterpress machines

5/02 . . for printing on sheets
5/04 . . for printing on webs
5/06 . . with several printing units in sequential arrangement
5/08 . . with several printing units in both superimposed and sequential arrangement
5/10 . . with several printing units arranged side by side
5/12 . . for printing on one side and on the other side of webs between the same forme and impression cylinders
5/14 . . with several impression cylinders arranged around a forme cylinder
5/16 . . for multicolour printing
5/18 . . using one impression cylinder co-operating with several forme cylinders
5/20 . specially adapted for proof printing
5/22 . for indirect printing
5/24 . for flexographic printing

7/00 Rotary lithographic machines

7/02 . . for offset printing
7/025 . . Multicolour printing or perfecting on sheets or on one or more webs, in one printing unit
7/04 . using printing units incorporating one forme cylinder, one transfer cylinder, and one impression cylinder, e.g. for printing on webs
7/06 . . for printing on sheets
7/08 . . using one transfer cylinder co-operating with several forme cylinders for printing on sheets or webs, e.g. sampling of colours on one transfer cylinder
7/10 . . using one impression cylinder co-operating with several transfer cylinders for printing on sheets or webs, e.g. satellite-printing units
7/12 . . using two cylinders one of which serves two functions, e.g. as a transfer and impression cylinder in perfecting machines
7/14 . . with two or more impression cylinders coacting with a single transfer cylinder
7/15 . . for printing on more than one web simultaneously
7/16 . . for printing on non-deformable material, e.g. sheet metal
7/18 . . specially adapted for proof printing
7/20 . Details
7/24 . . Damping devices
7/26 . . using transfer rollers
7/265 . . . . . . . . [for damping from the inside of the cylinders]
7/28 . . using brushes
7/30 . . using spraying elements
7/32 . . . Ducts, containers, or like supply devices for liquids
7/34 . . . Endless bands
7/36 . . . Inking-rollers serving also to apply ink repellent
7/37 . . . with supercooling for condensation of air moisture
7/38 . . . Absorbent pads
7/40 . . . Devices for tripping or lifting damping rollers; Supporting, adjusting, or removing arrangements therefor (such arrangements or devices for inking rollers B41F 31/30)

9/00 Rotary intaglio printing presses

9/001 . . (Heliostatic printing)
9/002 . . (Sheet printing presses (B41F 9/021 takes precedence))
9/003 . . (Web printing presses (B41F 9/023 takes precedence))
9/004 . . . (Printing two webs with the same printing cylinder)
9/005 . . . (Printing on two sides of the same web)
9/006 . . . (simultaneously)
9/007 . . . . (with the same printing cylinder)
9/008 . . . (Means for preventing egress of vapours)
9/009 . . . (Reversible printing presses (B41F 9/02 takes precedence))
9/01 . . for indirect printing (B41F 9/02 takes precedence)
9/02 . . . for multicolour printing
9/021 . . . (Sheet printing presses)
9/023 . . . (Web printing presses)
9/025 . . . . (with horizontally arranged printing units)
9/026 . . . . (with vertically arranged printing units)
9/028 . . . . . [of the satellite type]
9/04 . . . specially adapted for proof printing
9/06 . . Details
9/061 . . . (Inking devices)
9/063 . . . (Using inking rollers)
9/065 . . . (Using inking rails)
Rotary machines

11/00 Rotary presses or machines having forme cylinders carrying a plurality of printing surfaces, or for performing letterpress, lithographic, or intaglio processes selectively or in combination

11/02 . . . for securities (security printing B41M 3/14)

13/00 Common details of rotary presses or machines

13/0008 . . . [Driving devices (B41F 13/0004 and B41F 13/008 take precedence)]

13/0016 . . . [Storage devices for printing cylinders]

13/0024 . . . [Frames]

13/0032 . . . [Auxiliary numbering devices]

13/004 . . . Electric or hydraulic features of drives

13/0045 . . . [Electric driving devices]

13/008 . . . Mechanical features of drives, e.g. gears, clutches

13/012 . . . Taking-up backlash ([device for taking-up backlash in general F16H 55/00, e.g. F16H 55/18])

13/016 . . . Brakes

13/02 . . . Conveying or guiding webs through presses or machines

13/025 . . . [Registering devices]

13/03 . . . [Registering devices]

13/04 . . . intermittently

13/06 . . . [Registering devices]

13/08 . . . Cylinders

13/085 . . . [with means for preventing or damping vibrations or shocks]

13/10 . . . Forme cylinders

13/11 . . . Gravure cylinders ([attaching cylindrical formes B41F 27/105])

13/12 . . . Registering devices

13/14 . . . with means for displacing the cylinders

13/16 . . . with means for displacing the printing formes on the cylinders

13/18 . . . Impression cylinders

13/187 . . . for rotogravure

13/193 . . . Transfer cylinders; Offset cylinders ([attaching blankets B41F 30/04])

13/20 . . . Supports for bearings or supports for forme, offset, or impression cylinders

13/21 . . . Bearer rings

13/22 . . . Means for cooling or heating forme or impression cylinders

13/24 . . . Cylinder-tripping devices; Cylinder-impression adjustments

13/26 . . . Arrangement of cylinder bearings

13/28 . . . Bearings mounted eccentrically of the cylinder axis

13/30 . . . Bearings mounted on sliding supports

13/32 . . . Bearings mounted on swinging supports

13/34 . . . Cylinder lifting or adjusting devices

13/36 . . . Cams, eccentrics, wedges, or the like

13/38 . . . electrically or magnetically operated

13/40 . . . fluid-pressure operated

13/42 . . . Guards or covers, e.g. for preventing ingress or egress of foreign matter

13/44 . . . Arrangements to accommodate interchangeable cylinders of different sizes to enable machine to print on areas of different sizes

13/46 . . . Printing units for inserting latest news

13/48 . . . Arrangements to enable printing to be effected over selected areas of a single forme cylinder (by inking selected areas B41F 31/18)

13/50 . . . by effecting relative movement of forme and impression cylinders during printing cycle

13/52 . . . by projecting and retracting parts of the surface of the forme cylinder

13/54 . . . Auxiliary folding, cutting, collecting or depositing of sheets or webs

13/56 . . . Folding or cutting

13/58 . . . lengthwise

13/60 . . . crosswise

13/62 . . . Folding-cylinders or drums

13/64 . . . Collecting (gathering sheets or signatures in bookbinding B42C 1/00)

13/66 . . . and stapling

13/68 . . . Adding inserts

13/70 . . . Depositing

13/705 . . . [Interleaving slip sheets]

15/00 Screen printers

15/02 . . . Manually-operable devices

15/04 . . . for multicolour printing

15/06 . . . with auxiliary equipment, e.g. for drying printed articles

15/08 . . . Machines

15/0804 . . . [for printing sheets]

15/0809 . . . [with cylindrical or belt-like screens]

15/0813 . . . [with flat screens]

15/0818 . . . [with a stationary screen and a moving squeegee]

15/0822 . . . [on a stack of sheets]

15/0827 . . . [with a stationary squeegee and a moving screen]

15/0831 . . . [for printing webs]

15/0836 . . . [by means of cylindrical screens or screens in the form of endless belts]

15/084 . . . [simultaneously printing on two sides]

15/0845 . . . [with flat screens]

15/085 . . . [with a stationary screen and a moving squeegee]

15/0854 . . . [with a stationary squeegee and a moving screen]

15/0859 . . . [movable on a long printing table]
Rotary machines

15/0863 . . [with a plurality of flat screens mounted on a turntable]
15/0868 . . [for printing on filamentary articles]
15/0872 . . [for printing on articles having essentially cylindrical surfaces]
15/0877 . . [of varying cross-section]
15/0881 . . [for printing on polyhedral articles]
15/0886 . . [for printing on conical or frusto-conical surfaces]
15/089 . . [for printing on essentially spherical surfaces]
15/0895 . . [for printing on curved surfaces not otherwise provided for]
15/10 . . [for multicolour printing]
15/12 . . [with auxiliary equipment, e.g. for drying printed articles]
15/14 . . Details
15/16 . . [Printing tables]
15/18 . . [Supports for workpieces]
15/20 . . [with suction-operated elements]
15/22 . . [for single sheets]
15/24 . . [for webs]
15/26 . . [for articles with flat surfaces]
15/28 . . [for elongated flat articles, e.g. strips, bands]
15/30 . . [for articles with curved surfaces]
15/32 . . [for articles with conical surfaces]
15/34 . . [Screens, Frames; Holders therefor]
15/36 . . [flat]
15/38 . . [curved]
15/40 . . [Inking units]
15/405 . . [Spraying apparatus]
15/42 . . [comprising squeegees or doctors]
15/423 . . [Driving means for reciprocating squeegees]
15/426 . . [the squeegees or doctors being magnetically attracted]
15/44 . . [Squeegees or doctors]
15/46 . . [with two or more operative parts]

16/00 Transfer printing apparatus

16/0006 . . [for printing from an inked or preprinted foil or band]
16/0013 . . [combined with other printing presses]
16/002 . . [Presses of the rotary type]
16/0026 . . [with means for applying print under heat and pressure, e.g. using heat activable adhesive]
16/0033 . . [for means for applying print under pressure only, e.g. using pressure sensitive adhesive]
16/004 . . [Presses of the reciprocating type]
16/0046 . . [with means for applying print under heat and pressure, e.g. using heat activable adhesive]
16/0053 . . [with means for applying print under pressure only, e.g. using pressure sensitive adhesive]
16/006 . . [Arrangements for moving, supporting or positioning the printing foil or band]
16/0066 . . [Printing dies or forms]
16/0073 . . [with means for printing on specific materials or products]
16/008 . . [for printing on three-dimensional articles]
16/0086 . . [for printing on articles with cylindrical surfaces]
16/0093 . . [Attachments or auxiliary devices]
16/02 . . [for textile material]

17/00 Printing apparatus or machines of special types or for particular purposes, not otherwise provided for

17/001 . . [Pad printing apparatus or machines]
17/002 . . [Supports of workpieces in machines for printing on hollow articles]
17/003 . . [Special types of machines for printing textiles (using the screen printing process B41F 15/00; printing on knitted fabrics B41F 17/38)]
17/005 . . [Supports for workpieces; Devices for securing the workpieces to the supports]
17/006 . . [for printing on curved surfaces not otherwise provided for]
17/007 . . [Use of printing belts]
17/008 . . [Numbering devices for printing on articles other than sheets or webs]
17/009 . . [for printing books or manifolding sets]
17/01 . . [for printing calendars]
17/08 . . [for printing on filamentary or elongated articles, or on articles with cylindrical surfaces]
17/10 . . [on articles of indefinite length, e.g. wires, hoses, tubes, yarns]
17/12 . . [at an angle to axis]
17/13 . . [for printing on rolls of material, the roll serving as impression cylinder, e.g. strip printers]
17/14 . . [on articles of finite length]
17/16 . . [on end or bottom surfaces thereof]
17/18 . . [on curved surfaces of articles of varying cross-section, e.g. bottles, lamp glasses]
17/20 . . [on articles of uniform cross-section, e.g. pencils, rulers, resistors]
17/22 . . . . by rolling contact
17/24 . . [for printing on flat surfaces of polyhedral articles]
17/26 . . . . by rolling contact
17/28 . . [for printing on curved surfaces of conical or frusto-conical articles]
17/30 . . [for printing on curved surfaces of essentially spherical, or part-spherical, articles]
17/32 . . [on lamp bulbs]
17/34 . . [on articles with surface irregularities, e.g. fruits, nuts]
17/36 . . [for printing on tablets, pills, or like small articles]
17/38 . . [for printing on knitted fabrics]

19/00 Apparatus or machines for carrying out printing operations combined with other operations

19/001 . . [with means for coating or laminating]
19/002 . . [with means for applying specific material other than ink]
19/004 . . [with means for applying adhesive]
19/005 . . [with means for applying metallic, conductive or chargeable material]
19/007 . . [with selective printing mechanisms, e.g. ink-jet or thermal printers]
19/008 . . [with means for stamping or cutting out]
19/009 . . [with embossing]
19/004 . . [using intaglio printing forms and wipers]
19/006 . . [Printing and embossing between a negative and a positive forme after inking and wiping the negative forme; Printing from an ink band treated with colour or "gold"]
19/062 . . [Presses of the rotary type]
19/064 . . [Presses of the reciprocating type]
19/006 . . [_REPEAT_19/006]
19/068 . . [motor-driven]
Common details of printing machinery

21/00 Devices for conveying sheets through printing apparatus or machines (through platen presses B41F 1/28)
21/005 . . . { Electrostatic holding down devices }
21/02 . . . { Pins (B41F 21/12, B41F 21/14 takes precedence) }
21/04 . . . { Grippers (B41F 21/08, B41F 21/10) B41F 21/12, B41F 21/14 takes precedence) }
21/05 . . . In-feed grippers (B41F 21/06 takes precedence) 
21/06 . . . Suction-operated grippers 
21/08 . . . Combinations of endless conveyors and grippers 
21/10 . . . Combinations of transfer drums and grippers
21/102 . . . { with pneumatic means (B41F 21/108 takes precedence) }
21/104 . . . { Gripper details (B41F 21/102 takes precedence) }
21/106 . . . { for reversing sheets, e.g. for perfecting machine }
21/108 . . . { with pneumatic means }
21/12 . . . Adjusting leading edges, e.g. front stops 
21/14 . . . Adjusting lateral edges, e.g. side stops
22/00 Means preventing smudging of machine parts or printed articles (B41F 23/00 takes precedence)
22/005 . . . { using a back grey cloth }
23/00 Devices for treating the surfaces of sheets, webs, or other articles in connection with printing
23/002 . . . { cleaning devices for sheets or webs }
23/005 . . . { of non-flat articles }
23/007 . . . { with heat treatment before printing }
23/02 . . . by dampening (in rotary lithographic machines B41F 7/24 ; B41F 23/005 takes precedence) 
23/04 . . . by heat drying, by cooling, by applying powders (B41F 23/005 takes precedence) 
23/0403 . . . { Drying webs (B41F 23/0486 takes precedence) }
23/0406 . . . { by radiation (B41F 23/0436 takes precedence) }
23/0409 . . . { Ultra-violet dryers }
23/0413 . . . { Infra-red dryers }
23/0416 . . . { by conduction (B41F 23/0436 takes precedence) }
23/042 . . . { using heated rolls }
23/0423 . . . { by convection (B41F 23/0436 takes precedence) }
23/0426 . . . { using heated air }
23/043 . . . { using gas or fuel burners }
23/0433 . . . { using steam }
23/0436 . . . { using a combination of radiation, conduction or convection }
23/044 . . . { Drying sheets, e.g. between two printing stations (B41F 23/0486 takes precedence) }
23/0443 . . . { after printing }
23/0446 . . . { Wicket conveyors }
23/045 . . . { by radiation }
23/0453 . . . { by ultra-violet dryers }
23/0456 . . . { by infrared dryers }
23/0459 . . . { by conduction, e.g. using heated rolls }
23/0463 . . . { by convection }
23/0466 . . . { by using heated air }
23/0469 . . . { by using gas or fuel burners }
23/0473 . . . { by using steam }
23/0476 . . . { Cooling (B41F 23/0483 takes precedence) }
23/0479 . . . { using chill rolls }
23/0483 . . . { Drying combined with cooling }
23/0486 . . . { Particular types of dryers }
23/0489 . . . { Vacuum dryers }
23/0493 . . . { Microwave dryers }
23/0496 . . . { Proof dryers }
23/06 . . . { Powdering devices, e.g. for preventing set-off }
23/065 . . . { for thermography }
23/08 . . . Print finishing devices, e.g. for glossing prints (B41F 23/005 takes precedence)
25/00 Devices for pressing sheets or webs against cylinders, e.g. for smoothing purposes
27/00 Devices for attaching printing elements or formes to supports (attaching by chemical means B41N 6/00)
27/005 . . . { Attaching and registering printing formes to supports }
27/02 . . . Magnetic devices
27/04 . . . for attaching printing elements to flat type-beds
27/06 . . . for attaching printing elements to forme cylinders
27/08 . . . for attaching printing formes to flat type-beds
27/10 . . . for attaching non-deformable curved printing formes to forme cylinders
27/105 . . . { for attaching cylindrical printing formes }
27/12 . . . for attaching flexible printing formes
27/1206 . . . { Feeding to or removing from the forme cylinder }
27/1212 . . . { using pneumatic force }
27/1218 . . . { comprising printing plate tensioning devices }
27/1225 . . . { moving in the printing plate end substantially rectilinearly }
27/1231 . . . . . . { by translatory motion substantially tangential to support surface }
27/1237 . . . . . . { by translatory motion substantially perpendicular to support surface }
27/1243 . . . . . . { by pivotal or swivelling motion, e.g. by means of a rocking lever }
27/125 . . . { moving in the printing plate end on a curvilinear path, e.g. by winding on a roll }
27/1256 . . . . . . { with two semi-cylinders movable relative to each other }
27/1262 . . . . . . { without tensioning means }
27/1268 . . . . . . { by self-locking or snap-on means }
27/1275 . . . . . . { by means of adhesives, staples }
27/1281 . . . . . . { details of the printing plate ends }
27/1287 . . . . . . { devices for bending the printing plates or the printing plate ends }
27/1293 . . . . . . { Devices for filling up the cylinder gap; Devices for removing the filler }
27/14 . . . for attaching printing formes to intermediate supports, e.g. adapter members
30/00 Devices for attaching covering or make-ready devices; Guiding devices for coverings (make-ready devices B41N 6/00)
30/02 . . . attaching to impression cylinders
30/04 . . . attaching to transfer cylinders
30/06 . . . attaching of endless or like continuously-fed coverings
31/00 Inking arrangements or devices (inking units for platen presses B41F 1/40; inking units for cylinder presses B41F 3/81)
Common details of printing machinery

B41F

33/001 . [Ink mist preventing means]
33/002 . [Heating or cooling of ink or ink rollers]
33/004 . [Driving means for ink rollers]
33/005 . [Ink viscosity control means]
33/007 . [Removing water from ink trains]
33/008 . [Inking devices for reversible printing presses]
33/02 . Ducts, containers, supply or metering devices
33/022 . . . [Ink level control devices]
33/025 . . . [Ducts formed between two rollers]
33/027 . . . [Ink rail devices for inking ink rollers]
33/03 . . . Ink agitators
33/04 . . . with duct-blades or like metering devices
33/045 . . . . . . [Remote control of the duct keys]
33/05 . . . . . . Positioning devices therefor
33/06 . . . . . . Troughs or like reservoirs with immersed or partly immersed, rollers or cylinders
33/07 . . . . . . for rotogravure
33/08 . . . . with ink ejecting means, e.g. pumps, nozzles
33/10 . . . . Applications of feed or duct rollers (messenger or moving transfer rollers B41F 31/14)
33/12 . . . . adjustable for regulating supply
33/13 . . . . Means for driving fountain rollers (B41F 13/12 takes precedence)
33/14 . . . . Applications of messenger or other moving transfer rollers
33/15 . . . Devices for moving vibrator-rollers
33/16 . . . Continuous, e.g. endless, band apparatus
33/18 . . . for inking selected parts of printing forms
33/20 . . . Ink-removing or collecting devices
33/22 . . . for inking from interior of cylinder
33/24 . . . Absorbent pads
33/26 . . . Construction of inking rollers (inking-rollers serving also to apply ink repellent in rotary lithographic machines B41F 7/36)
33/28 . . . Spray apparatus
33/30 . . . Arrangements for tripping, lifting, adjusting, or removing inking rollers; Supports, bearings, or forks therefor
33/301 . . . . . . [Devices for tripping and adjusting form rollers]
33/302 . . . . . . [Devices for tripping inking devices as a whole]
33/304 . . . . . . [Arrangements for inking roller bearings, forks or supports (B41F 31/301 takes precedence)]
33/305 . . . . . . [Eccentric bearings]
33/307 . . . . . . [Sliding bearings]
33/308 . . . . . . [Swinging bearings]
33/32 . . . . . . Lifting or adjusting devices (for damping rollers B41F 7/40)
33/34 . . . . . . Cam, eccentric, wedge, or like devices
33/36 . . . . . . fluid-pressure operated
33/38 . . . . . . magnetically operated

33/00 Indicating, counting, warning, control or safety devices (arrangements of counting devices in platen presses B41F 100) . [B41F 1/58; arrangements of counting devices] in cylinder presses B41F 3/84; ink supply or metering devices B41F 31/02)
33/009 . . . [Central control units]
33/018 . . . [Protection means against injury to the operator]
33/027 . . . [Devices for scanning originals, printing forms or the like for determining or presetting the ink supply]
33/036 . . . [Devices for scanning or checking the printed matter for quality control]