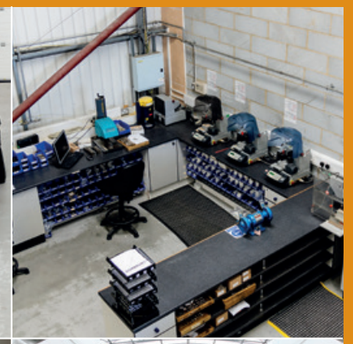
LOCKING SYSTEMS

MILOS Masterkeyed Integrated Locking Systems

INTRODUCTION TO LOCKING SYSTEMS

First established in 1988, Locking Systems is an independent and trusted supplier based in Gateshead. The business supplies locking cylinders and a bespoke masterkeying service to locksmiths and architectural ironmongery companies throughout the UK.






MEET THE TEAM

At Locking Systems we have a dedicated team of staff with over 200 years combined experience in all aspects of cylinder locking. From scheduling complex master key systems, through the intricacies of assembly and pinning to despatch, they will support you through the process, ensuring you receive the ultimate service experience.

At Locking Systems we have a proactive approach to development and training for all members of staff from our GAI trained professionals to our newly appointed apprentice.



INTRODUCTION TO LOCKING CYLINDERS

Locking Systems offers a range of cylinder solutions according to the type of cylinder required, the need for masterkeying and the level of security required for each specific application.

Additional functions can be incorporated within the cylinder to increase security or safety, or to provide specific solutions to particular applications such as schools and hospitals.

Our technical team can assist and support in the drawing up and finalising of complex suiting requirements specific to each individual project.

SYSTEM SELECTION

Critical to the physical security of most buildings is in selecting the most appropriate cylinder system for the people who will manage the building and those who will use it. A few simple factors should be considered:

- The level of physical security or attack resistance is required to prevent forced entry
- Balancing security or convenience of key duplication
- The size and complexity of masterkeying
- The type and lengths of cylinders are required
- Choice of additional cylinder functionality, standard, classroom, anti-barricade and other features

FEATURES & FUNCTIONS EXPLAINED

Physical Security

The physical security aspect of a cylinder system can be measured using the European standard for cylinders EN1303:2005. (see page 18 for more information).

Additional features can also be added to further enhance the physical security of the cylinders (see page 7).

TS007 3 Star Standard

This standard was designed and developed to combat the particular threat of cylinder snapping and bumping to gain forced entry.

Key Duplication

Depending on the needs of the building and its users, a decision has to be made between convenience of having duplicate keys cut locally with no control, or having more control on the supply of duplicate keys. The security of any key system can quickly and easily be compromised if there is no control on who can supply duplicate keys.

Cylinder Types

A building can use a combination of different cylinders dependant on the type of locks installed, the most popular being European profile. We offer a range of other cylinder types which can be incorporated within the same masterkey suite if required.

Suiting Complexity

The complexity of a master key suite is determined by how many keys are required to enter a particular number of cylinders, the more keys operating a cylinder the more complex the suite design needs to be. A complex suite does have its draw backs as well as its advantages. Locking Systems has designed some of the most complex suites in use and has years of experience so is very capable and willing to offer any support required in the design of your suiting requirements.

Classroom Function

Ideal for situations where an occupied room is left unattended without supervision. The room can be locked from outside to prevent unauthorised entry while having peace of mind that the door can always be opened from the inside. The cylinder however, can never lock the door from the inside, making the function ideal for classroom applications.

Anti-Barricade Function

Some circumstances require a room to be lockable from inside but always allow access from the outside. The anti-barricade function isolates the internal turn from the external key function making both mechanisms independent of each other. The function always allows the key to unlock the door from the outside even if the internal thumbturn is being held in the locked position from the inside. This function is ideal for secure and psychiatric institutions, care homes and other secure facilities.

Construction Keying

It is normal practice during the construction process of a building to allow ownership of the keys to be given to contractors so they have unlimited access. The security of the building can be compromised if a key is inadvertently lost, stolen or not returned by a contractor. With construction keying, a special pin is incorporated during the cylinder assembly which allows a single "construction key" to be issued to the contractor to allow them full access during the construction process. All remaining keys are retained until the building is handed over to the client, at which point the client should insert and rotate the building master key into all cylinders, this will then render the construction key inoperable thereby ensuring the security of the building.

Bump Resistance

Bumping is a method of physically manipulating a cylinder to gain unauthorised access to a room or area with the use of an unauthorised key. Where this could be an issue a system with an Anti-Bump feature should be used.

Key Override

Some situations lead themselves to keys being left inserted on the inside of a double cylinder. Standard cylinders will not allow another key to operate from the outside. However, cylinders supplied with Key Override functionality allow the cylinder to be operable from both sides even when a key is inserted on the other side of the door, making the function ideal for nursing homes.

1, 2, 3 Cylinder Function

Ideally suited where there is a steady turnover of key holders. This function enables the key holder to be changed without the need to change the cylinder. If a user issued with key 1 fails to return all key 1 keys, there is an obvious security risk. However once key number 2 is rotated 360 degrees in the cylinder, this then makes key 1 invalid. Key 3 will invalidate key 1 and key 2.

MASTERKEYING

Masterkeying

This is the general term used to identify any system of cylinders which establishes a hierarchy of access, where certain keys will operate more than one cylinder.

Grand Masterkeying

In many larger buildings or groups of buildings such as a university or a hospital, it would be totally impractical to provide a different cylinder for each and every door. Even within a single department the head of the department could become the holder of hundreds of keys.

Masterkeying allows an organisation to control who has access to which doors through the careful design and organisation of the key profiles and pin arrangement of the cylinders within the system.

A hierarchy of keys can be developed which allows access to individual doors, groups of doors, all the doors on one floor, or ultimately all the doors within a building or campus.

Personalised Key Blanks

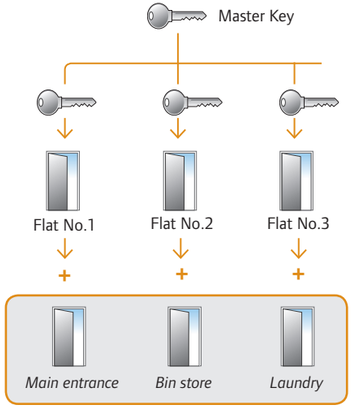
We also offer personalised key blanks with the MILOS 30 range. There is a minimum commitment of 500 blanks which need to be used over a 12 month period.

Please contact us for more information.

Example 1

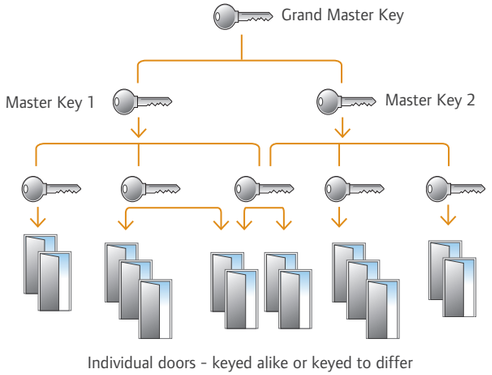
A simple masterkeyed system is ideal for a block of apartments in which each occupant is issued with a single key to pass their own apartment door plus all the communal doors such as the main entrance door, bin store, garage and laundry.

The master key is held by the building manager/ superintendent.



Example 2

More complex applications where different groups of individuals require access to more specific groups of doors. Cylinder systems capable of such complexity can be set up with zones controlled by sub masterkeys with levels above them of master keys and grand masterkeys.



MILOS 50

MILOS 50 cylinders are the ultimate convenience solution for masterkey systems making them ideal for large complex commercial applications.

Typical applications include:

- Commercial Offices
- University Campus
- Schools
- Hospitals and other Healthcare Applications
- Public Buildings

MILOS 50 Series Features

- 10 Pin key bitting system produces over 1.6 million key differs
- Mushroom shaped driver provides pick resistance
- Drill resistant hardened steel pin and driver in first position
- Self-lubricating projecting DIN standard sintered steel cam provides push resistance
- Phosphor bronze springs
- Additional functions available:
  - Classroom function
  - Anti-barricade function
  - Key override
  - Easy Egress turn
- EN 1303 classification for:
  - Durability Grade 6
  - Key Security Grade 6
  - Attack Resistance Grade 2 (when used with a security escutcheon in accordance with EN 1906)

MILOS 50 Series Features

- 6 Pin key bitting system produces over 100,000 key differs
- Mushroom shaped driver provides pick resistance
- Hardened steel anti-drill pin and driver in first position
- Paracentric key profile to enhance pick resistance
- Patented Bump Pin as optional extra
- Phosphor bronze springs
- Minimum of 6 hardened anti-drill pins in the body & core
- Additional functions:
  - Classroom function
  - Anti-barricade function
  - 1, 2, 3 cylinder function
  - Personnel function
  - Key override
  - Construction keying
  - Easy Egress turn
- EN 1303 classification for:
  - Durability Grade 6
  - Key Security Grade 6
  - Attack Resistance Grade 2*
- TS007 3 Star Standard
  - Bump pin as standard
  - Sacrificial break slot ensures the core is secure even if the cylinder is snapped

MILOS 30

MILOS 30 is a patented range of high quality cylinders with the highest level of certified testing for both durability and key related security.

Typical applications include:

- Commercial Offices
- University Campus
- Schools
- Hospitals and other healthcare applications
- Public Buildings

MILOS 10

MILOS 10 cylinders are a flexible and highly versatile range of cylinders which combine good levels of security with convenience. It is an ideal system for medium security applications and where the convenience of key duplication is required.

Typical applications include:

- Commercial Offices
- Factories/industrial
- Residential developments

MILOS 10 Series Features

- 5 Pin key bitting system produces over 30,000 key differs
- Mushroom shaped driver provides pick resistance
- Hardened steel anti-drill pin and driver in first position
- Self-lubricating projecting DIN standard sintered steel cam provides push resistance to prevent the cylinder being forced out of the lockcase
- Phosphor bronze springs
- Additional functions:
  - Classroom function
  - Anti-barricade function
  - Easy Egress turn
- EN 1303 classification for:
  - Durability Grade 6
  - Key Security Grade 4
  - Attack Resistance Grade 0

SERIES COMPARISON

MILOS 50
see page 4

MILOS 30
see page 5

MILOS 10
see page 6

	MILOS 50	MILOS 30	MILOS 10
Patented system (to 2032)		patent protected	
Restricted key duplication	♦	♦	
No. of Pins	10	6	5
Suitable for simple masterkeying	♦	♦	♦
Suitable for complex masterkeying	♦	♦	
Max. differs under simple MK system	28,000	18,000	1,400
TS007 3 Star		♦	
Anti-Bump feature		♦	
Classroom function	♦	♦	♦
Anti-barricade function	♦	♦	♦
1, 2, 3 function		♦	
Personnel function		♦	
Key override function	♦	♦	♦
Construction keying		♦	
EN 1303 Grades			
Durability	Grade 6	Grade 6	Grade 6
Key Related Security	Grade 6	Grade 6	Grade 4
Attack Resistance	Grade 2	Grade 2	Grade 0
CE Classification	**16010C62**	**16010C62**	**16010C40**

CYLINDER TYPES & SIZES

MILOS cylinders are readily available in a wide range of lengths including equal and offset double and thumbturn cylinders. Calculate the cylinder length required (see page 19 for guidance) and select the closest match above the calculated length.

Nominal Cylinder Lengths

	Euro Profile Single Cylinders						Euro Profile Double Cylinders						
	30/10	35/10	40/10	45/10	55/10	65/10	60 - 30/30	70 - 35/35	80 - 40/40	90 - 45/45	100 - 50/50	110 - 55/55	120 - 60/60
MILOS 50	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 30	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 10	●	●	●				●	●	●	●	●		

	Euro Profile Double Cylinders - Offset																
	65 - 30/35	70 - 30/40	75 - 30/45	80 - 30/50	85 - 30/55	90 - 30/60	75 35/40	80 - 35/45	85 - 35/50	90 - 35/55	85 - 40/45	90 - 40/50	95 - 40/55	100 - 40/60	95 - 45/50	100 - 45/55	110 - 50/60
MILOS 50	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 10	●	●	●	●		●	●	●	●		●	●			●		

	Euro Profile Cylinder & Thumbturn						
	60 - 30/30	70 - 35/35	80 - 40/40	90 - 45/45	100 - 50/50	110 - 55/55	120 - 60/60
MILOS 50	●	●	●	●	●		
MILOS 30	●	●	●	●	●	●	●
MILOS 10	●	●	●	●	●		

	Euro Profile Cylinder & Thumbturn - Offset															
	65 - 30/35	70 - 30/40	75 - 30/45	80 - 30/50	85 - 30/55	90 - 30/60	65 - 35/30	75 - 35/40	80 - 35/45	85 - 35/50	90 - 35/55	70 - 40/30	75 - 40/35	85 - 40/45	90 - 40/50	95 - 40/55
MILOS 50	●	●	●	●			●	●	●	●		●	●	●	●	
MILOS 30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 10	●	●	●	●			●	●	●	●		●	●	●	●	

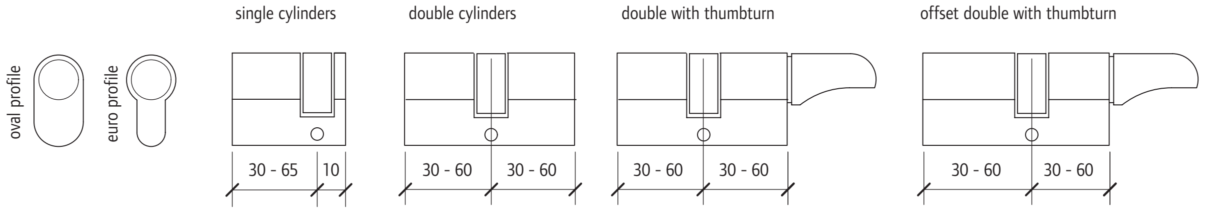
	Euro Profile Cylinder & Thumbturn - Offset (cont.)														
	100 - 40/60	75 - 45/30	80 - 45/35	85 - 45/40	95 - 45/50	100 - 45/55	80 - 50/30	85 - 50/35	90 - 50/40	95 - 50/45	110 - 50/60	85 - 55/30	90 - 55/35	95 - 55/40	100 - 55/45
MILOS 50		●	●	●	●		●	●	●	●					
MILOS 30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MILOS 10		●	●	●	●		●	●	●	●					

	Oval Single		Oval Double			Oval Cyl & Turn		
	40 - 30/10	45 - 35/10	60 - 30/30	70 - 35/35	80 - 40/40	60 - 30/30	70 - 35/35	80 - 40/40
MILOS 50								
MILOS 30	●	●	●	●	●	●	●	●
MILOS 10								

Extended thumbturn for easy access

To fully satisfy the accessibility issues highlighted by The Equality Act and to meet the requirements of BS 8300, we have a large, extended thumbturn which is available for any of the cylinder ranges.

This provides a large lever action to assist users who may have a weak or restricted grip.



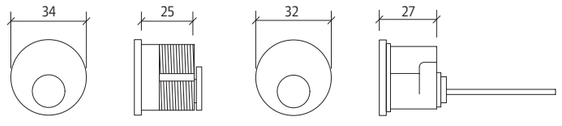
NOTE:

Thumbturn cylinder dimensions are always stated with the thumbturn side second

OTHER CYLINDER TYPES

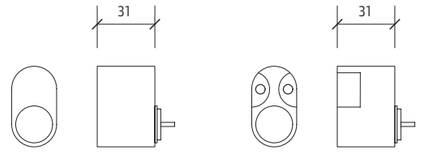
Some applications may require different types of cylinder to be included on the same masterkey system. MILOS cylinders are available in the following cylinder types.

	Scandinavian Cylinders			Rim Cylinders		Other
	Internal	External	Int & External	Rim Cylinder	Screw-in Rim Mortice Cyl.	Cam Lock
MILOS 50		•		•	•	
MILOS 30	•	•	•	•	•	•
MILOS 10				•	•	



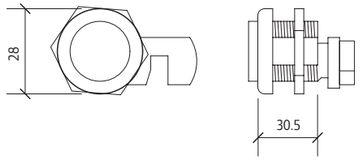
Rim mortice cylinder (screw in)

Rim cylinder



Scandinavian external

Scandinavian internal



Cam "Lock" - for door thickness up to 15mm

PADLOCKS

We also have a range of cylinder controlled padlocks which can be supplied keyed to differ or can be included as part of your masterkey system. Cylinders can be replaced within the padlock to maintain security if keys are lost or stolen.

683.P50.BL

683.P73.BL

684.P73.BL

684.P74.BL

	Padlocks					
Product Code	Description	W	X	D	Y	Features
683.P50.BL	Standard - Open shackle	54	26	9	20	Key locking, hardened steel lock body with Molybdenum steel shackle. Finished in black E-Plating for weather resistance
685.P50.BL	Standard - Extended shackle	54	75	9	20	
683.P73.BL	CEN 4 Silver Rated - Open shackle	61	27	11	31	Key retaining, hardened solid lock body with Molybdenum steel shackle. Finished in black E-Plating for weather resistance
684.P73.BL	CEN 4 Silver Rated - Closed shackle	61	27	11	23	
683.P74.BL	CEN 5 Gold Rated - Open shackle	70	27	14	29	Key retaining, hardened solid lock body with Molybdenum steel shackle. Finished in black E-Plating for weather resistance
684.P74.BL	CEN 5 Gold Rated - Closed shackle	70	27	14	25	

STANDARD EN 1303

EN 1303 CLASSIFICATIONS

EN 1303 is the European Standard which establishes assessment and test criteria for each cylinder to quantify its application and security. It classifies cylinders using an 8 digit coding system. Features assessed include durability, fire resistance, key related security and attack resistance.

	Criteria	Grades Available	MILOS 50	MILOS 30	MILOS 10
Category of Use	Linked to the frequency of use. 1 Grade only is identified	Grade 1 shall resist a torque of 2.5Nm and still be usable	1	1	1
Durability	Durability testing according to test cycles achieved. 3 Grades are identified	Grade 4 - 25,000 cycles Grade 5 - 50,000 cycles Grade 6 - 100,000 cycles	6	6	6
Door Mass & Closing Force	No Requirement	N/A	0	0	0
Fire Resistance	Suitable for use on fire/smoke doors according to fire testing to BS EN 1634-1	Grade 0 - not approved for fire doors Grade 1 - suitable for use on fire doors	1	1	1
Safety	No requirement	N/A	0	0	0
Corrosion	Corrosion and temperature resistance testing to BS EN 1670	Grades 0 to C where C offers the greatest corrosion resistance within -20°C to +80°C	C	C	C
Key Related Security	Measures key related security	Grades 1 to 6 where grade 6 offers the greatest security	6	6	4
Attack Resistance	Measures attack resistance	Grade 0, 1 or 2, where Grade 2 offers the greatest attack resistance * When used in conjunction with a suitable security escutcheon	2*	2*	0

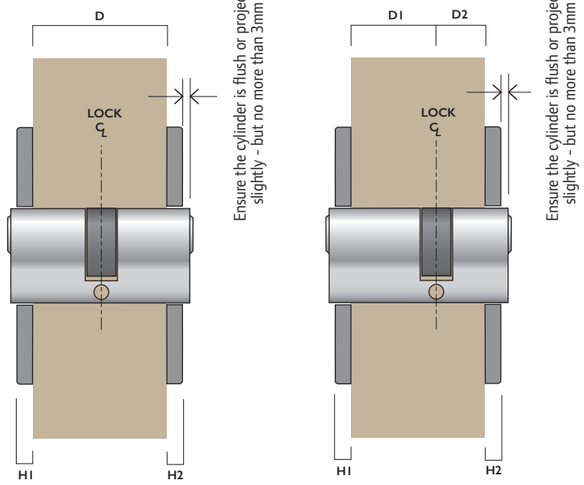
CYLINDER LENGTHS

Selecting the correct length of cylinder is important to:

- Limit the amount of cylinder projecting from the face of the door as this can make it susceptible to attack
- Avoid the risk of hitting the cylinder with the hand when using lever handles

To establish the correct length of cylinder you must consider:

- The door thickness (D)
- The hardware thickness on each side (H1/H2)
- The lock mounting position
  - on door centreline or
  - off centre (e.g on over-rebated doors)



CALCULATION

From the centreline of the lockcase, take the cumulative dimension of the door thickness and hardware for each side of the door (unless a single cylinder is to be used). Select the nearest cylinder dimension which matches each side.

e.g. A 44mm door with the lock fitted centrally in the door thickness, with 5mm hardware will require a 30/30 cylinder.

LOCKING SYSTEMS

POWERED BY UAP LIMITED

Uniclass	L411 + L45
CI/SfB	(68) X

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