

3 Handled tilt & turn (ND)

• Windows: Introduction

Tilt & turn

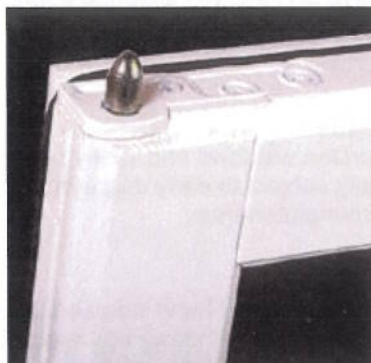
- 3 Handled
- 1 Handled
- Sash & case look-alike

• Venetian blinds

Villa

- Side glide
- Top swing

- Fully reversible
- Automatic opening vents



The NorDan 3 handled tilt & turn has 7 sturdy locking points which provide enhanced security and superior performance.



The ND window in the tilt position allows stale air to escape at the top of the window and fresh air in at the sides.

The NorDan all-in-one solution is a wonder of windows; an unrivalled flagship of NorDan that has been in continuous production for over 40 years.

Practical

NorDan security windows are inward opening in both the tilt and turn positions. The tilt position provides draught free ventilation, while the turn position allows the outside glass to be cleaned safely. It will also act as a fire escape in case of an emergency (size permitting). In the tilt (ventilation) position, the window opens approximately 100mm at the top, allowing air safely into the room. Three locking points at the base and a restrictor stay at the head of the window provide increased burglar resistance.

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Solid ironmongery

The construction and strength of the ironmongery on this window is exceptional. Each corner of the sash can withstand a pressure of 300 kilograms and the ironmongery is positioned behind the weather gasket, therefore protecting it from extreme weather and the contamination it can produce.

The safest window

The NorDan security window embodies child safety as standard in the day-to-day ventilation position as the sash acts as a barrier. With the inclusion of an optional child safety device, the opening can be restricted in several positions or even prevented from being opened in pre-determined positions to offer optimum safety.

Endless combinations

In addition to options such as aluminium cladding, special glass combinations

for added security, energy saving or noise reduction, the NorDan security window is also available with **very smart 'built in' venetian blinds**, in a choice of colours.

Weather sealing

Seven sturdy locking points hold the sash firmly against the frame to guarantee total weather-tightness when the window is fully closed. The in-built decompression chamber within the sash and frame ensures that even driving rain will not penetrate beyond the surface of the sash. This ensures that the weatherseal stays dry, thereby securing a long working life.

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Aluminium glazing beads

These are unique to NorDan windows and vastly superior to traditional timber beads which are normally subject to early degradation. Aluminium glazing beads offer virtually zero maintenance.

Handing

ND windows are hinged on the right hand side as standard (when viewed from the inside). Left hand hinged windows are available to order.

Trickle ventilation

A trickle vent is fitted as standard to all ND opening windows. This is positioned in the head of the frame and has an internal adjustable control. The outside entrance to the vent incorporates an insect screen. NorDan's unique design avoids rain entering the vent under normal conditions. There is no visible vent hood externally. Windows can be supplied to order without vents.

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Aluminium cladding

- **Product features:**
introduction

- **Energy saving**

- Doctor Susan Roaf
- Professor Tariq Muneer
- U-values

- **Environment**

- Doctor Gillian Menzies
- Environmental declaration

- **Safety**

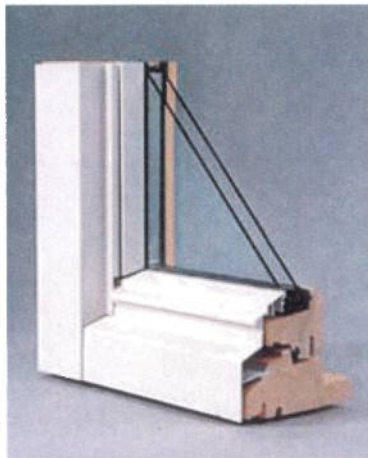
- **Security**

- **Sound reduction**

- **Fire safety**

- **Production**

- Colours
- Pre-finish
- Aluminium cladding



Note how the cladding shields the timber from the sun and weather, at the same time allowing full air flow and drainage behind to keep the timber in perfect condition.

Optional rain-screen over-cladding system with over 40 years experience, provides virtually zero external maintenance. All products from NorDan (apart from sash and case look-alike and decorative door) can be delivered aluminium clad. This includes patio doors, French doors, single doors and all windows, either opening or fixed.

NorDan offer aluminium cladding of windows and doors for all situations because of the distinct advantages it offers:

- Virtually zero maintenance
- Self ventilating and draining
- Proven design
- Easily repaired
- Huge range of colours
- Retains its good looks after years of weathering

Over-cladding the NorDan way

The NorDan high performance window forms the basis of these products. The company has developed a range of clips and profiles to clad the units whilst allowing for expansion of the aluminium, self-drainage of the system and ventilation of the timber- all vital considerations when providing a superb, reliable product, suitable for all locations.

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Section 1: Inward opening windows

Product specifications: Security window (3 handled tilt and turn inward opening)

CHARACTERISTICS

Opens inward two separate ways. Tilting the sash inward provides day to day ventilation. Turning the sash (side hung inward) allows for cleaning the outside of the glass from inside. Turning the sash inwardly provides access to all parts for routine maintenance and can be utilised as an emergency escape route (size permitting).

IRONMONGERY

The tilt and turn is tightly closed through the advantage of seven separate heavy duty locking points. Tightness is secured by 3 espagnolettes each controlled by one of three handles; one positioned at each side and one on the bottom rail. Handles are centre positioned and are designed to lock one another out for added safety/security reasons. Side handles can be lowered to order for special circumstances – further details on request.

SPARE ESPAGNOLETTE PARTS

The locking point system is extraordinarily strong and any form of breakdown is extremely rare. However, a full stock of spare parts is held in the UK. Replacing an espagnolette involves removing the handle plus a few more screws, taking only a few minutes to achieve.

REMOVABLE SASH

The sash is designed to be removable through a certain sequence of handle operations. The facility to remove the sash is particularly beneficial to installers and any future maintenance. No tools are necessary to remove the sash, neither can it be accidentally removed. Simple measures can be taken to restrict or avoid sash removal altogether.

RESTRICTORS

A metal restrictor stay (JR206) is standard and situated mid rail to the upper handle opposite the hinge side. An alternative high density plastic restrictor (NP792) is available to order. Both stays are

Size Limitations

Min. width	Max. width	Min. height	Max. height
388mm	2088mm	388mm	2188mm
Maximum sash weight 80 kilo. Overall maximum size (width + height) 3300mm If the width exceeds 1687mm then an extra handle is fitted at the top			

designed primarily for use in the tilt position. The handle can engage into any of the available notches to provide varying degrees of ventilation. A restrictor stay (JR716) is available to order for holding the cleaning position open. The side hung opening maximum is approx. 67°. In the maximum tilt position the sash does not open more than 100mm and this accords with current building requirements. The degree of tilt cannot be increased. Please also note the degree of tilt is reduced when lowering side handles. Details on request.

MULLIONS AND TRANSOMS

Mullions and/or transoms of 62 or 92mm section can be included to create separate glazing areas. Insulated panels can be included instead of glass. Further details on request.

ACCESSORIES

A removable handle fitted to the bottom rail restricts use to tilt only. A removable handle fitted to the upper position opposite hinge side will render the window inoperable. Locking handles with keys and additional restrictor stays are available to order.

NIGHT VENT (TRICKLE VENT)

The adjustable night vent (trickle vent) is positioned at the head of the frame to make best use of incoming fresh air. The vent is independent to the sash so that a source of fresh air is available even if the sash is closed. The night vent is concealed from the outside.

NIGHT VENT (TRICKLE-VENT) AIRFLOW

- Frame width 488mm to 687mm allows 4000mm²
- Frame width from 688mm allows 6000mm²
- Frame width from 788mm allows 8000mm²

IRONMONGERY: FITTINGS

ESPAGNOLETTES

Aluminium, alloy No 6063

CONTROL PLATE (frame)

Zamak 5

CONTROL FITTING (sash)

Zamak 5

HANDLES

Zamak 5

VENT FITTING

Zamak 3

STORM HOOK (arm)

Steel, ST50

END PIECES (keepers)

Polyacetal (POM)

LOCK BOXES

Polyacetal (POM)

Standard handles are shiny chrome.

Other cast fittings are yellow chromate.

All metal parts are corrosion resistant.

OPTIONS

In addition to the standard three handle operation, a version with single handle operation is optionally available. Please ask for details. Inward opening tilt and turn ranges can also be supplied with a "stepped" sash giving the appearance of traditional sash and case windows whilst offering optimum performance. Please refer to NorDan's "The Window and Door Book" or call for further information.

Section 1: Inward opening windows

Product specifications: Side hung and bottom hung inward opening

CHARACTERISTICS

Opens inward as side hung (NS) or bottom hung (NB) only. These two alternative types of inward opening window are manufactured with the appearance of being the same window as the security ND tilt and turn. The only appreciable difference being that both NB and NS usually (but not always) have 2 handles to operate the sash, while ND has 3.

NB bottom hung windows are for opening sizes where the height is restricted, perhaps forming a landscape window. NS side hung windows are for opening sizes where the width is restricted, allowing for tall/narrow portrait windows.

IRONMONGERY

Bottom hung comprises of two separate espagnolettes; one each side with each handle centrally positioned. The espagnolettes each provide two locking points. Side hung may have one or two espagnolettes subject to factory definition. If only a side espagnolette is fitted this may have three locking points on the opening side and one handle only, centrally positioned. If produced with two handles then both the bottom rail and one side will have an espagnolette providing two locking positions. Side handles of both bottom hung and side hung can be lowered. Further details on request.

SPARE ESPAGNOLETTE PARTS

The locking point system is extraordinarily strong and any form of breakdown is extremely rare. However, spare parts are held in the UK.

MULLIONS AND TRANSOMS

Mullions and/or transoms of 62 or 92mm section can be included in side hung and bottom hung windows to create separate glazing areas. Insulated panels can be used instead of glass. Further details on request.

Size Limitations

Min. width	Max. width	Min. height	Max. height
NS 288mm	1188mm	288mm	2188mm
NB 328mm	1988mm	348mm	688mm

Maximum sash weight (NS) 80 kilo, (NB) 60 kilo.
Overall maximum size (width + height): (NS) 3300mm (NB) 2400mm

REMOVABLE SASH

The sash in bottom hung and side hung can be removed by way of releasing a screw at the base of the hinge side.

RESTRICTORS

A standard plastic restrictor stay (NP792) is provided adjacent to the handle opposite the hinge side. The handle can engage into any of the available notches to provide varying degrees of ventilation. The device is automatic locking except when releasing or reconnecting.

ADDITIONAL RESTRICTORS

If an additional side hung restrictor stay is required, NorDan offer various surface mounted solutions including friction and locking stays, either manual or automatic. Please ask for further details. The side hung opening maximum is approx. 90°.

ACCESSORIES

Removable and locking handles with keys and additional restrictor stays are available to order.

NIGHT VENT (TRICKLE VENT)

The adjustable night vent (trickle vent) is positioned at the head of the frame to make best use of the incoming fresh air. The vent is independent to the sash so that a source of fresh air is available even if the sash is closed. The night vent is concealed from the outside.

NIGHT VENT (TRICKLE-VENT) AIRFLOW

- Frame width 488mm to 687mm allows 4000mm²
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IRONMONGERY: FITTINGS

ESPAÑOLETTES

Aluminium, alloy No 6063

CONTROL PLATE (frame)

Zamak 5

CONTROL FITTING (sash)

Zamak 5

HANDLES

Zamak 5

VENT FITTING

Zamak 3

STORM HOOK (arm)

Steel, ST50

END PIECES (keepers)

Polyacetal (POM)

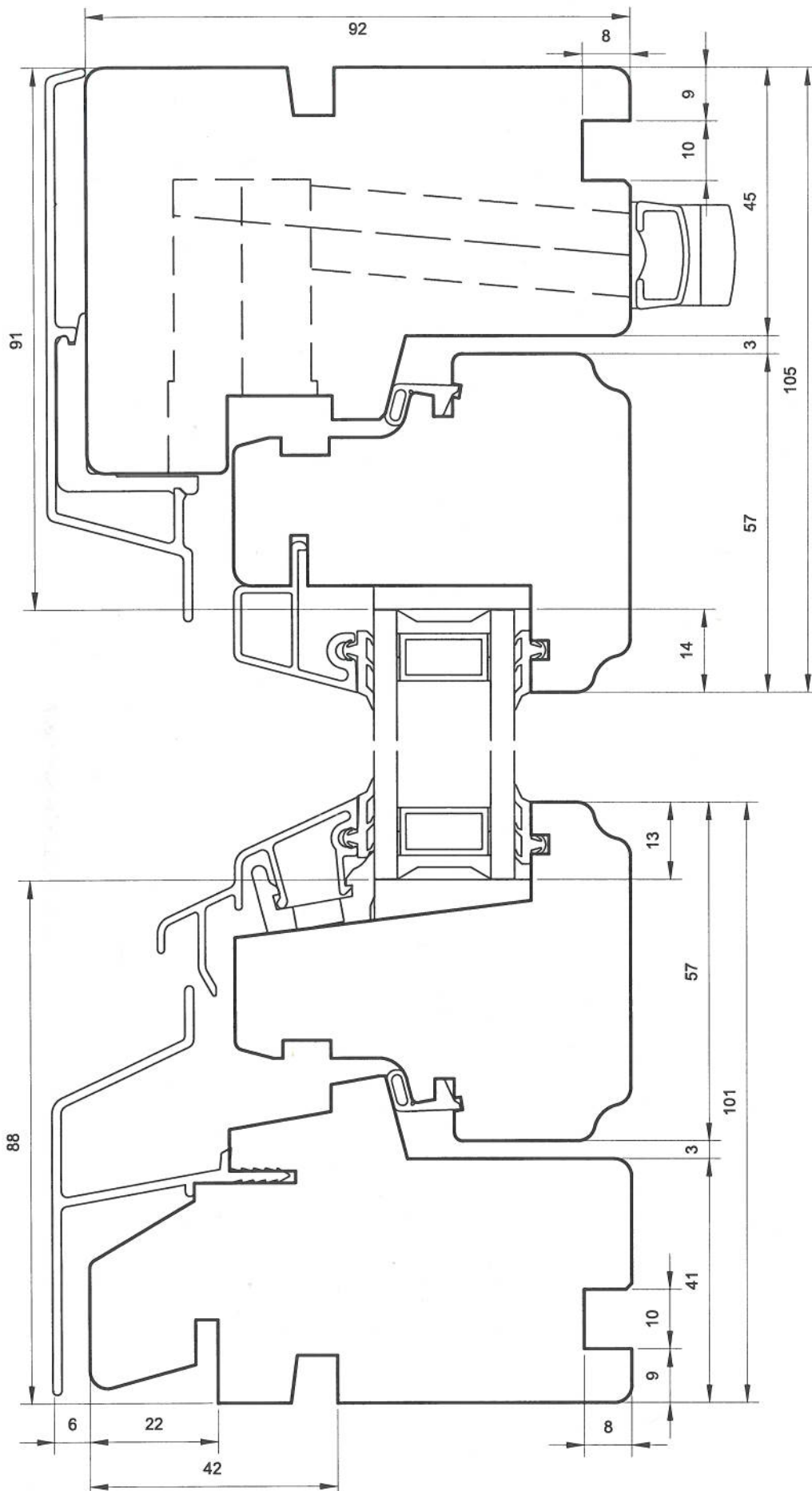
LOCK BOXES

Polyacetal (POM)

Standard handles are shiny chrome.

Other cast fittings are yellow chromate.

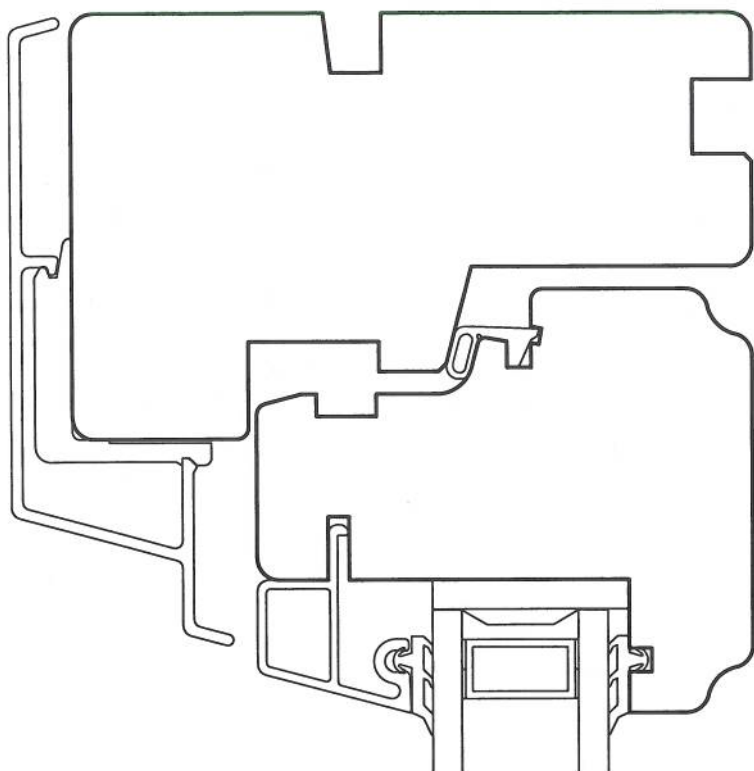
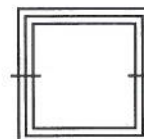
All metal parts are corrosion resistant.



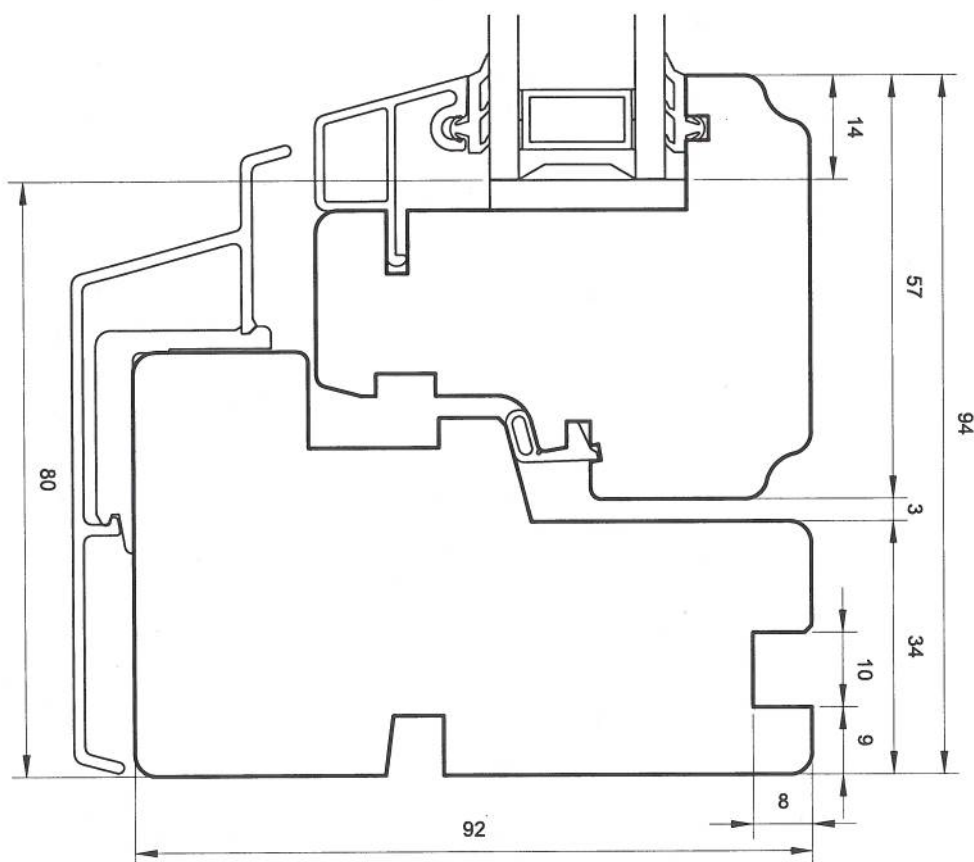
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