DESIGN AND HANDLING OF SURGICAL INSTRUMENT TRANSPORT CASES: A GUIDE ON HEALTH AND SAFETY STANDARDS

TABLE OF CONTENTS

INTRODUCTION

The Heads of Workplace Safety Authority (HWSA) initiated a national intervention and compliance campaign in 2008 called Safe steps – Manual handling, slips and trips in hospitals. It recommended a national focus for central sterilising supply departments (CSSDs), to ensure implementation of control measures that reduce the risks associated with manual tasks. It also recommended particular attention be paid to the design of containers, handling of loan sets, use of lifting equipment, work area design, psychosocial issues, and liaison with equipment suppliers and building designers.

As a result of these recommendations, SafeWork NSW (http://www.safework.nsw.gov.au/) formed a national working party and undertook further research, which included state-wide inspections of CSSDs, courier services and surgical equipment suppliers. The inspections found that transporting and handling of road cases, tubs and surgical instrument trays presented a significant risk, with serious implications across these industry sectors.

Your Feedback

This guide provides practical guidance for designers, manufacturers, suppliers, couriers and users surgical instrument set transport cases, and outlines their obligations when transporting and handling the cases and their contents.

An industrial design expert was engaged to design a transport case that, when used in conjunction with this guide, would assist with national work health and safety legislative compliance.

Contributors to this guide include:

- Dr Lance Green
- ABC Couriers & Transport Services P/L (http://www.abc-couriers.com.au/)
- Australian College of Operating Room Nurses (ACORN) (https://www.acorn.org.au/)
- Endeavour Couriers P/L
- Federation of Sterilising Research and Advisory Council of Australia (FSRACA) (http://www.fsraca.org.au/)
- Golden Messenger Transport (http://www.goldenmessenger.com.au/)
- Johnson and Johnson Medical P/L (https://www.jnj.com.au/)
- Knox Private Hospital Victoria (http://www.knoxprivatehospital.com.au/)
- Medtronic Australasia P/L (http://www.medtronic.com.au/contact-us/)
- Messenger Post Couriers (https://www.startrackcourier.com.au/default.aspx)

- Northern Sydney Central Coast Area Health Service (NSCCAHS) (http://www.health.nsw.gov.au/lhd/pages/nslhd.aspx)
- NSW Operating Theatre Association (OTA) (http://www.ota.org.au/)
- Queensland Health (https://www.health.qld.gov.au/)
- Smartline Machinery P/L (http://www.smartlinemachinery.com/)
- Smartways Logistics (http://smartwayslfl.com/)
- Smith & Nephew Surgical P/L (https://www.smith-nephew.com/en-au/)
- Sterilising Research and Advisory Council of Australia (https://www.sracansw.org.au/)
- Stryker Australia P/L (https://www.stryker.com/au/en/)
- Sydney South West Area Health Service (SSWAHS) (http://www.sswahs.nsw.gov.au/default.htm)
- Synthes Australia P/L (http://www.synthes.com/Pages/default.aspx)
- TNT Express (https://www.tnt.com/express/en_au/site/home.html)
- TOLL Priority (http://www.tollgroup.com/tollpriority)
- Zimmer P/L (http://www.zimmer.com.au/)

SCOPE

This guide provides advice on the design, manufacture, supply, transportation and use of surgical instrument transport cases and their contents, with particular emphasis on safe design. Handling of this equipment is addressed through workplace design and safe work practices, involving the designer through to the end-user in the hospital. The guide also addresses the obligations of duty holders who are associated with the handling of these cases and their contents.

Surgical instrument trays less than 300 mm long are not required to be transported in the surgical instrument transport cases described in this guide. The design of tubs is not addressed within the scope of this guide. Tubs should only be used to transport prostheses and/or other lightweight surgical equipment not described in this guide.

DEFINITIONS

Consignment sets/long-term loaners – surgical instrument sets and implant prosthesis sets that are owned by the supplier and remain at the hospital on long-term contract.

Road case – a wheeled case that is currently used to house surgical instrument sets and/or medical supplies for transportation. (Under the new system, as described in this guide, these cases will be phased out and replaced by new surgical instrument transport cases).

Slip sheet – a divider between the surgical instrument outer containers that facilitates easy removal and insertion of contents.

Surgical instrument inner tray – a tray that contains surgical instruments, which is usually housed in an outer container.

Surgical instrument outer container – a container that houses the inner surgical instrument trays.

Surgical instrument set – a set of instrument trays used in surgical operations.

Surgical loan kit – a combination of fully-laden surgical instrument transport cases and tubs for loan to hospitals for a surgical operation. The kits are typically returned to suppliers after surgery, unless retained on long-term consignment.

Surgical instrument transport case (new case as described in this guide) – a case used to house surgical instrument sets and/or medical supplies for transportation.

Tub – a top-opening container that is used to house surgical instrument sets and/or medical supplies for transportation. Under the new system, as described in this guide, tubs will only be used to house surgical implants.

Wheeled platform – a dolly, or other wheeled platform, for moving surgical instrument transport cases and tubs.

DESIGN PRINCIPLES

Work health and safety legislation places obligations on designers to identify hazards and control the risks associated with the design, manufacture, supply and use of equipment. The designer must, where reasonably practicable, design-out any risks associated with the use, handling and transportation of the following equipment.

Surgical instrument transport case

The surgical instrument transport case, used to transport surgical instrument trays and medical supplies, should be strong, durable and made from lightweight weatherproof material that minimises the potential for contamination. The case should protect the contents and minimise liquids, dust and contaminants from entering the case. The external and internal surfaces should be easy to clean and maintain.

The case should be designed to:

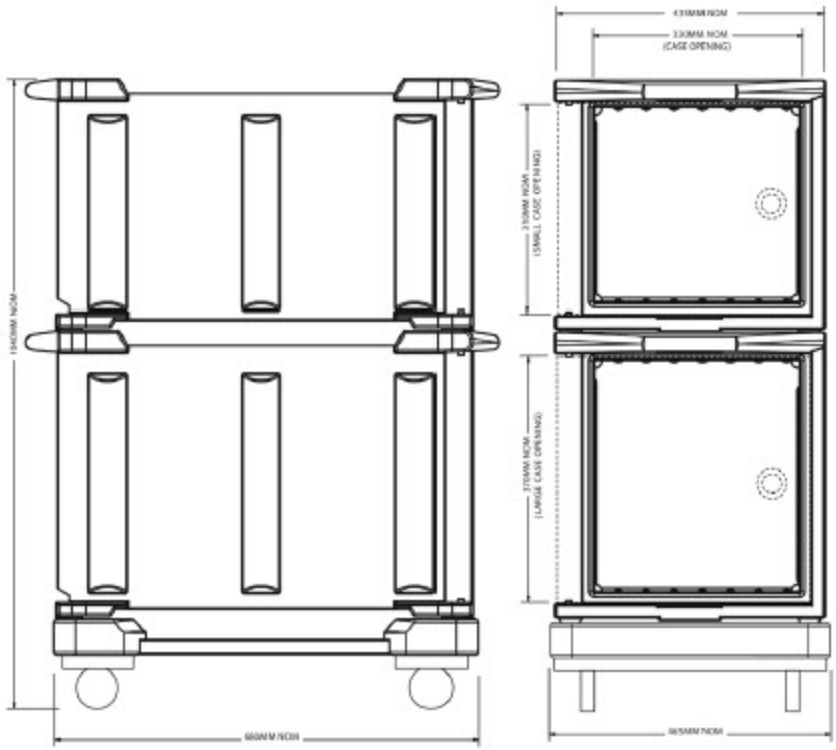
- be end-opening for improved access when packing and unpacking trays, and aligned to open in the same direction. Doors and associated locking mechanisms should allow clear and easy access to the contents of the case and ensure the contents are secure during transportation
- be securely stacked and transported on an appropriately designed wheeled platform
- allow a tub to be securely stacked on top during handling and transportation
- allow suitable signage and labelling to be prominently displayed
- allow a mechanical aid to raise a single case or stack to a suitable working height
- allow the contents (eg trays and associated equipment) to be removed and inserted without lifting, excessive force or awkward posture
- allow slip sheets to be located between trays and securely retained within the case

Slip sheets

Slip sheets should be made of a material that is easy to clean and minimises friction. They should be located between trays and securely retained within the case, yet able to be removed when required.

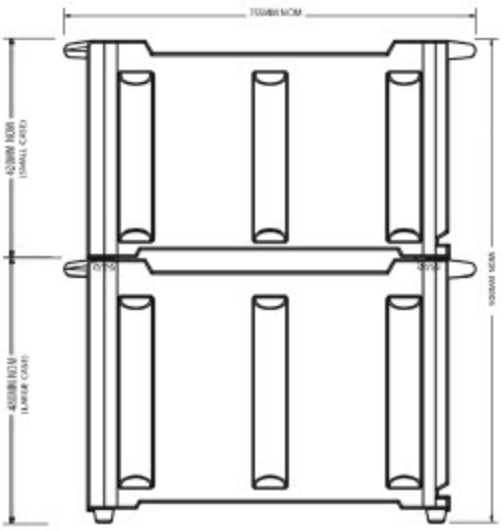
Recommended design specifications[1]

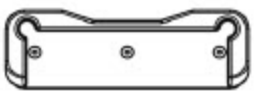
Surgical instrument transport case assembled components



Recommended design specificiations[2]

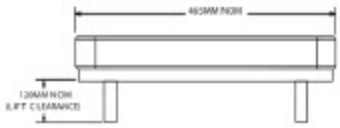
Surgical instrucment transport case individual components





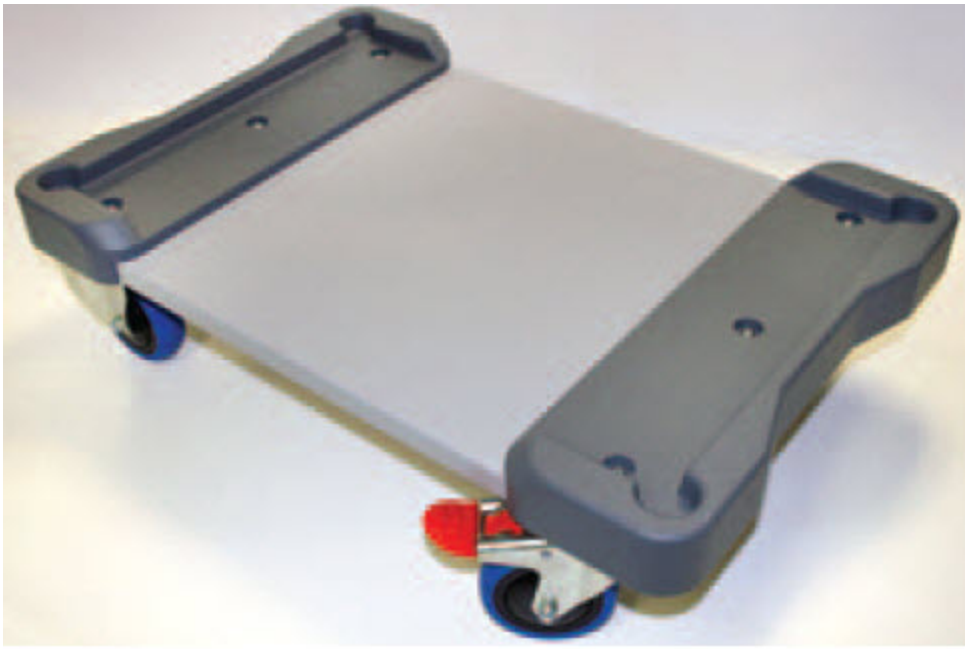



600MM NOM
765MM NOM


465MM NOM
120MM NOM
(LIFT CLEARANCE)









Wheeled platform

The wheeled platform used to move cases and tubs should be strong, durable and made from lightweight weatherproof material that minimises the potential for contamination.

The platform should be designed to:

- be easy to clean and maintain
- allow for secure location of the stacked cases and tubs on top of the platform
- ensure the stack is stable and secure when moved
- allow it to be locked to the bottom case when required
- allow a mechanical aid to raise the wheeled platform and stack of cases to a suitable height
- allow a mechanical aid to raise a single case or cases from the wheeled platform when required
- support the maximum safe working load of the stack

The platform should have at least two multi-directional wheels, to ensure ease of movement and steering. The wheels should include a braking mechanism and conform to relevant standards. To determine the most appropriate wheels, consider the following factors:

- terrain
- durability
- vibration
- manoeuvrability
- safety

Surgical instrument trays

Surgical instruments fit into specifically designed surgical instrument inner trays which are frequently housed in surgical instrument outer containers. The majority of Australian suppliers do not necessarily have control over the design of trays and containers, however, where reasonably

practicable, the design principles set out in this guide should be followed.

Trays and containers protect instruments from damage during transportation and set out the instruments in a logical manner for surgery. They should be made from lightweight, durable material that can be cleaned and sterilised. Trays and containers should easily slide into and out of an end-opening case.

Tray and container handles should be designed to:

- allow fully-laden trays to be safely handled
- withstand cleaning and sterilisation
- retain structural integrity
- be easily accessible when trays and containers are inserted or removed from the case

This guide recommends that fully laden individual inner trays, where reasonably practicable, should preferably weigh up to 5kg and not exceed 7kg.





SAFE USE AND HANDLING PRINCIPLES

The loan kit area should be designed to eliminate or minimise manual tasks. In addition, every activity involved in surgical loan kit handling must be evaluated by each facility and courier organisation, and action taken to eliminate or minimise risks associated with all hazardous manual tasks. This will assist with safer, more efficient and cost-effective work processes.

All equipment should conform to relevant work health and safety legislation, this guide or an equivalent level of safety. Information on the safe use and handling of kits should be provided at the point of supply/use. Equipment should be regularly inspected and maintained to ensure it is able to be used in a safe and appropriate manner, as set out in this guide.

Communication strategies should be in place to minimise the number of manual tasks and ensure safe work procedures are effective. A systematic process should exist between suppliers, couriers and hospitals regarding the status of kits. The process should include:

- coordinated receipt/delivery protocols (how, when and where)
- appropriate internal and external contacts
- suitable mechanical-handling equipment that is available at all points of the process
- effective delivery and scheduling contractual conditions

A surgical loan kit handling process flowchart has been developed to provide a step by step overview of all activities involved in this process. In addition, tools have been developed to support key work processes for suppliers, couriers and hospitals, and are available as appendices.

- Process for suppliers - appendix 1
- Process for couriers - appendix 2
- Process for hospitals - appendix 3

Surgical loan kits handling process



Suppliers

As a supplier, designate a person to be responsible for coordinating the loan kit handling process. Document procedures for all tasks related to handling and processing of kits, and ensure all procedures follow health, safety and hygiene standards.

Effective communication is essential when coordinating the receipt and despatch of kits. Prepare a schedule of all receipts and despatches that includes the number of deliveries and the type of kits used, together with appropriate contact details for the hospitals and couriers.

Fully laden individual inner trays, where reasonably practicable, should preferably weigh up to 5 kg and not exceed 7 kg. Loaded cases should remain on their platform at all times for ease of use and movement. For stability, heavier cases should be positioned at the bottom of the stack. Tubs can be

placed on top of the stack of cases during handling and transport. The stack should not exceed 1350 mm in height and the combined weight of the stack should not exceed 80 kg. Store cases and wheeled platform in a safe and secure place when not in use.

Use clear, self-explanatory signs and display them prominently on the side of each case (include your company name, the gross weight of each case, and any other relevant information). Ensure the case carrying the loan kit documentation is clearly identified and remove any old signage and labels. Cases and platforms should be thoroughly cleaned and maintained on a regular basis.

The loan kit area should be configured to eliminate or minimise the risks associated with manual tasks. This should include:

- a designated area with adequate floor space for the systematic packing and unpacking of kits and the use of lifters and associated mobile equipment
- designated holding and storage areas with adequate floor space
- adequate access and egress with level non-slip floor surfaces
- a work area that optimises work flow and minimises lifting and double handling
- mechanical lifters and height adjustable work benches with fitted rollers
- associated equipment (eg conveyors and trolleys) to assist with handling and movement

Couriers

As a courier, follow safe working procedures when loading and unloading your vehicle, ensuring that:

- vehicles are fit for purpose
- loads are safely secured
- mechanical aids are fitted to vehicles (eg tailgate lifters). Where this is not reasonably practical, use mobile lifters and ramps
- stacks are kept in their original configuration

Ensure that contractual arrangements are in place with all other parties. These arrangements should include:

- a stipulation that transport cases are not manually lifted in or out of courier vehicles
- designated loading and unloading areas
- timely and effective despatch and receipt procedures
- designated delivery and collection points

Tailgate lifters

Vehicles can be modified to ensure easy unloading and lading of transport cases.

Modifying a vehicle with a tailgater lifter device is the preferred option where reasonably practical.

All tailgate lifters should be fit for purpose and fitted by a competent person.

The modified vehicle has a floor and tailgate which lower to the ground to enable loads to be wheeled on and off via the ramp.

This type of vehicle will eliminate the need to manually lift cases during loading and unloading.



Mobile lifter

Mobile lifters may be used to reduce the risk of musculoskeletal injury when loading or unloading transport cases in and out of vehicles.



Ramps/skids

When purchasing a ramp or skids, ensure that:

- the length and width allow for safe loading and unloading of kits

- the weight does not pose a risk
- they can be fitted and removed easily
- they allow safe and smooth movement of wheeled stack when loading and unloading vehicle
- they are stable and secure when in use
- they can be stored and secured in the vehicle when not in use

Ramps/skids

Hospitals

All hospitals should have a CSSD manager who designates a staff member/s to be responsible for the loan kit handling process. Safe operating procedures should be in place and displayed clearly for all tasks related to the handling and processing of kits. All procedures should follow health, safety and hygiene standards.

Designated areas should be provided for the receipt/despatch of kits with adequate work space allocated to pack and unpack the kits. Cases should remain on their platform at all times for ease of handling and transportation, and should be stored in a safe and secure area when not in use.

Effective communication is essential when coordinating the receipt and despatch of kits. This should include receipt/despatch schedules, the number of deliveries and type of kits being used, and appropriate contact details for suppliers and couriers. Hospitals should ensure that kits are returned in a similar configuration and in line with designated weight restrictions (eg not more than 80 kg).

The loan kit area should be configured to eliminate or minimise the risks associated with manual tasks, including:

- a designated area with adequate floor space for the systematic packing and unpacking of kits, including the manoeuvring of lifters and associated mobile equipment
- designated holding and storage areas with adequate floor space
- adequate access and egress with level non-slip floor surfaces
- a work area that optimises work flow and minimises lifting and double handling
- mechanical lifters and height adjustable work benches with fitted rollers
- mobile equipment to assist with equipment handling and movement

Further information for hospitals on recommended floor areas can be found in the Australasian Health Facility Guidelines, Revision V 4.0 (16 December 2010). Part B of the Guideline covers Health facility briefing and planning. Visit healthfacilityguidelines.com.au (https://healthfacilityguidelines.com.au/) to view the guidelines.

Diagrams illustrate options for layouts to handle surgical loan kits in hospital





Options for layouts to handle surgical loan kits in hospitals







Equipment

Seek advice from a competent person to ensure that new and existing equipment is fit for purpose. Equipment should be trialled prior to purchase.

Mobile lifter

When purchasing a mobile lifter, ensure that it is compatible with the work environment, fit for purpose and:

- has a lifting plate/tines that maintain a horizontal service when under load
- manoeuvres easily in a restricted workspace
- does not create further risk when operated
- has a safe working load of 100 kg or greater
- has appropriate castors with braking capacity
- accesses the platform directly from floor level
- lifts to at least 1000 mm above floor level
- has a smooth and efficient action, with a powered lift mechanism that is easily accessible
- lifts and lowers stack securely and safely
- can lift a single case or tub when required
- can be easily cleaned and recharged





Fixed lifter

When purchasing a fixed lifter, ensure that it is compatible with the work environment, fit for purpose and:

- has a lifting plate/tines that maintain a horizontal service when under load
- does not create further risk when operated
- has a safe working load of 100 kg or greater
- can be fixed to a wall or mounting frame
- accesses the platform directly from floor level
- lifts to at least 1000 mm above floor level
- has a smooth and efficient action, with a powered lift mechanism that is easily accessible
- lifts and lowers stack securely and safely
- can be easily cleaned and recharged (where applicable)



Adjustable work bench

When purchasing an adjustable work bench, ensure that it is compatible with the work environment, fit for purpose and:

- can accommodate multiple instrument trays
- can be adjusted between 750 mm and 1150 mm from floor level
- has rollers fitted at loading and unloading points
- has an abrasion-resistant, non-porous work surface
- has a solid work surface
- is easy to clean
- has lockable wheels

The work bench should be located close to the lifter, with space to allow trolleys to manoeuvre nearby.



Rollers

Rollers should be fitted to work benches to enable smooth transfer of instrument trays.



Transport trolley

When purchasing a transport trolley, ensure that it is compatible with the work environment, fit for purpose and:

- shelving correlates to height adjustable workbench
- where reasonably practicable, the trolley can be height adjusted
- there is sufficient space to store instrument trays
- is easily cleaned
- has no sharp edges



APPENDIX 1: PROCESS FOR SUPPLIERS - GENERAL INFORMATION

To be easily maneuvered, the new surgical instrument transport cases (cases), described in the national guide Design and handling of surgical instrument transport cases (the guide), are designed to be securely stacked on a wheeled platform (or equivalent).

The design of tubs is not addressed within the scope of the guide. Tubs should only be used to transport prostheses and/or other lightweight surgical equipment not described in this guide. It is essential that tubs are loaded, unloaded and handled using appropriate manual handling techniques.

Loaded cases should remain on their platform at all times for ease of use and movement. For stability, heavier cases should be positioned lowest on the stack. Tubs can be placed on top of the stack of cases during handling and transport. The stack should not exceed 1350 mm in height and the combined weight of the stack should not exceed 80 kg.

The gross weight of each case and tub must be displayed.

When planning safe systems of work, you should consider the following:

1a. Plan the layout of the warehouse to allow for an efficient process flow, in particular the designated:

- loan kit receipt area
- loan kit processing area
- loan kit despatch area
- loan kit holding area, with designated space to store stacked empty cases (two to three high max) and empty tubs
- instrument tray storage area

1b. Ensure the designated loan kit despatch and receipt areas are easily accessible to both workers and couriers.

2. It is recommended that suppliers encourage all couriers to avoid manual lifting during loading and unloading.

3. Ensure that all staff are trained in the relevant procedures and are competent to use any required equipment

Process for suppliers - despatch

Process	Consideration
1. Receive order	
2. Pick loan kit	Shelving • Allow adequate space between shelving to allow unrestricted movement • Locate heavy and frequently used trays at waist height • Locate lighter trays on higher and lower shelves Trolley/aid • Use a trolley/aid when picking equipment from warehouse shelving • Ensure the trolley/aid is height adjustable, or at individual's waist height • Use appropriate manual handling techniques when handling trays.

Process	Consideration
3. Process order and pack loan kit • Slide trays onto workbench • Check trays against original order (follow QA procedures) • Ensure the correct number of cases/tubs are prepared for the order • Ensure cases are safely stacked and secured to wheeled platform/s, and that heaviest cases are positioned lowest in stack • Wheel platform loaded with stacked empty cases onto a fixed or mobile lifter • Use lifter to raise and lower cases so that individual trays are loaded at bench height • Slide trays into case using slip sheets to separate trays. Repeat until each case is full • Enclose all relevant documentation within the case • Securely lock and label each transport case	Workbench • Ensure the workbench is height adjustable to allow for various heights of employees • Check area around workbench and lifter are free of trip hazards • It is recommended that a roller is fitted to the end/s of the workbench to allow trays to slide easily into the case • Ensure surface area of workbench allows adequate space for safe work and QA procedures are followed Lifter • Use a mechanical lifter (fixed or mobile) to move/raise/lower cases and tubs • Consider process flow and available floor space to determine whether a fixed or mobile lifter would be most appropriate

Process	Consideration
4. Place loan kit in designated despatch area	Loan kit despatch area • Ensure floor surface allows unrestricted movement of workers and equipment • Ensure area is free of trip hazards

Process for suppliers - receipt

<table>
<tr><th>Process</th><th>Consideration</th></tr>
<tr><td>1. Receive loan kit from courier
Instruct courier to wheel cases/tubs to designated receipt area</td><td rowspan="2">Loan kit area
Ensure floor surface allows unrestricted movement of workers and equipment
Ensure area is free of trip hazards
Lifter
Use a mechanical lifter to raise and lower cases
Consider process flow and available floor space to determine whether a fixed or mobile lifter would be most appropriate
Workbench
Ensure workbench is height adjustable to allow for various heights of employees
Ensure surface area allows adequate space for safe work and QA procedures to be followed
It is recommended that a roller is fitted to the end/s of the workbench to allow trays to slide easily out of the case
Use appropriate manual handling techniques when handling trays</td></tr>
<tr><td>2. Unpack loan kit and process delivery
Wheel stack into loan kit process area and onto fixed or mobile lifter
Raise/lower lifter so that the tray (to be unloaded from case) is at bench height
Pull tray from case and slide onto workbench
Check tray against original order (follow QA procedures)
Repeat process for each tray until case is empty
Remove any unnecessary labelling and wheel to designated holding area</td></tr>
</table>

Process	Consideration
3. Return equipment to storage shelves	Shelving • Allocate adequate room between shelving to allow unrestricted movement • Locate heavier and frequently used trays at waist height • Locate lighter trays on higher and lower shelves Trolley/aid • Use a trolley/aid when returning equipment to warehouse shelving • Ensure trolley/aid corresponds to the height of the workbenches • Use appropriate manual handling techniques when returning trays to shelving
4. Transfer empty cases/tubs to designated holding area	Holding area • Ensure floor surface allows for unrestricted movement of workers and equipment • Ensure area is free of trip hazards

APPENDIX 2: PROCESS FOR COURIERS - GENERAL INFORMATION

To be easily manoeuvred, the new surgical instrument transport cases (cases), described in the national guide Design and handling of surgical instrument transport cases (the guide), are designed to be securely stacked on a wheeled platform (or equivalent).

The design of tubs is not addressed within the scope of the guide. Tubs should only be used to transport prostheses and/or other lightweight surgical equipment not described in this guide. It is essential that tubs are loaded/unloaded and handled using appropriate manual handling techniques.

Loaded cases should remain on their platform at all times for ease of use and movement. Tubs can be placed on top of a stack of cases during handling and transport. The stack should not exceed 1350 mm in height and the combined weight of the stack should not exceed 80 kg. The gross weight of each case and tub must be displayed.

When deliveries consist of a single case only, appropriate manual handling principles must be adhered to (eg use a hand truck or similar).

Couriers should ensure:

- their vehicles are fit for purpose
- all loads are safely secured and restrained during transportation
- mechanical aids, such as tailgate lifters or similar, should be fitted to the vehicle and, where this is not reasonably practical, appropriate aids (ie mobile lifters and ramps) should be used
- the stacks are kept in their original configuration when delivered

Contractual arrangements covering the safe collection and delivery of kits should be in place with all parties. These arrangements should include:

- designated vehicle loading and unloading areas
- timely and effective despatch and receipt procedures
- designated delivery and collection points

Process for couriers

Process	Consideration
1. Retrieve loan kit from despatch area • Park vehicle in designated loading zone or as close to hospital/supplier designated loan kit holding area as possible • Retrieve kits from designated area • Check total number of cases and tubs against documented order • Ensure each case is correctly locked and secured prior to leaving the designated holding area • Ensure tub lids are closed • Ensure all kits are appropriately labelled • Wheel kits to courier vehicle	Delivery route • When parking the vehicle, consider the ground/floor surface between the vehicle and pick up point at each destination • Have a set route (as direct as possible) between the vehicle and the pick up point at each destination

<table>
<tr><th>Process</th><th>Consideration</th></tr>
<tr><td>2. Load loan kits into courier vehicle
Load kits into the courier vehicle by means other than physically lifting
Ensure all kits are appropriately secured for travel in courier van</td><td rowspan="2">Courier equipment

The cases and platform are designed so that physical lifting and lowering of items is not required. It is recommended that any of the following aids are used to load and unload the stack/s into the vehicle:
tailgate lifter
a fixed, hydraulic fold out ramp
a set of lightweight skids
a lightweight portable, foldable ramp
a mobile lifter supplied by the supplier/ hospital</td></tr>
<tr><td>3. Unload loan kits from courier vehicle
Remove vehicle restraints
Ensure each case remains locked and secured to platform before unloading from vehicle
Unload kits out of vehicle by means other than physically lifting</td></tr>
<tr><td>4. Deliver loan kits to hospital/supplier
Park vehicle in designated area, or as close to the hospital/supplier designated loan kit area as possible
Wheel cases to designated loan kit receipt area in CSSD/supplier warehouse
Check total number of cases against documented order</td><td>Delivery route
When parking the vehicle, consider the ground/floor surface between the vehicle and drop off point at each destination
Have a set delivery route (as direct as possible) between the vehicle and the drop-off point at each destination</td></tr>
</table>

APPENDIX 3: PROCESS FOR HOSPITALS - GENERAL INFORMATION

To be easily maneuvered, the surgical instrument transport cases (cases), described in the national guide Design and handling of surgical instrument transport cases (the guide), are designed to be securely stacked on a wheeled platform (or equivalent).

The design of tubs is not addressed within the scope of the guide. Tubs should only be used to transport prostheses and/or other lightweight surgical equipment not described in this guide. It is essential that tubs are loaded, unloaded and handled using appropriate manual handling techniques.

Loaded cases should remain on their platform at all times for ease of use and movement. Tubs can be placed on top of a stack of cases during handling and transport. The stack should not exceed 1350 mm in height and the combined weight of the stack should not exceed 80 kg. The gross weight of each case and tub must be displayed.

When planning safe systems of work you should consider the following:

1a. Plan the layout of the loan kit area to allow for an efficient process flow, in particular the designated:

- loan kit receipt area
- loan kit processing area
- loan kit despatch area
- loan kit holding area, with designated space to store stacked empty cases (two to three high max) and empty tubs
- instrument tray storage area

1b. Ensure the designated loan kit despatch and receipt areas are easily accessible to both workers and couriers.

2. Ensure that all staff are trained in the relevant procedures and are competent to use any required equipment

3. It is recommended that the hospitals encourage all couriers to avoid manual lifting during loading and unloading

4. It is recommended that internal/external processes are in place, to ensure equipment for routine elective surgery arrives at least 24 hours prior to the start of that surgery

Process for hospitals - receipt

<table>
<tr><th>Process</th><th>Consideration</th></tr>
<tr><td>1. Receive delivery from courier
Instruct courier to wheel kits to designated receipt area</td><td rowspan="2">Loan kit area
Ensure designated loan kit receipt area can be easily accessed by couriers and employees
Ensure floor surface allows unrestricted movement of workers and equipment
Ensure area is free of trip hazards
Ensure that slip sheets remain in case at all times
Lifter
Use a mechanical lifter to raise and lower cases
Consider process flow and available floor space to determine whether a fixed or mobile lifter would be the most appropriate
Workbench/trolley
Ensure workbenches are height adjustable to allow for various heights of employees
Ensure surface area allows adequate space for safe work and QA procedures to be followed
It is recommended that a roller is fitted to the end/s of the workbench to allow trays to slide easily out of the case
Use appropriate manual handling techniques when handling trays
Ensure trolley shelves correspond to the height of the workbenches</td></tr>
<tr><td>2. Unpack and process delivery
Wheel kits into loan kit processing area and onto fixed or mobile lifter
Raise/lower lifter so that the tray (to be unloaded from case) is at bench height
Pull tray from case and slide onto workbench
Check tray against original order (following QA procedures)
Transfer trays and required instruments to trolley/s for transfer to cleaning/sterilisation process
Repeat process for each tray until case is empty
Remove any unnecessary labelling</td></tr>
</table>

Process	Consideration
3. Transfer empty cases to designated holding area	Holding area • Ensure floor surface allows unrestricted movement of workers and equipment • Ensure area is free of trip hazards

Process for hospitals - despatch

Process	Consideration
1. Wheel empty cases from designated holding area to loan kit packing area	Loan kit area • Ensure floor surface area allows unrestricted movement of workers and equipment • Ensure area is free of trip hazards Workbench/trolleys • Ensure workbenches are height adjustable to allow for various heights of employees • Ensure trolley shelves correspond to the height of the workbenches • Ensure area around workbench and trolleys is free of trip hazards • It is recommended that a roller is fitted to the end/s of the workbench to allow trays to slide easily into the case • Ensure surface area of workbench allows adequate space for safe work and QA procedures to be followed Lifter • Use a mechanical lifter (fixed or mobile) to move/raise and lower cases • Consider process flow and available floor space to determine whether a fixed or mobile lifter would be most appropriate
2. Process instruments and pack loan kit • Once internal sterilisation process has taken place, transfer trays and instruments onto workbench • Wheel platform loaded with stacked empty cases onto the fixed or mobile mechanical lifter • Ensure heaviest cases are positioned lowest in stack • Use lifter to raise/lower cases so that individual trays are loaded at bench height • Slide trays into case using slip sheets to separate trays • Repeat process until case is full • Enclose all relevant documentation within case • Securely lock and label each case	

Process	Consideration
3. Wheel loan kit to designated despatch area	Loan kit despatch area • Ensure area can be easily and safely accessed by couriers and employees • Ensure floor surface allows unrestricted movement for workers and equipment • Ensure area is free of trip hazards

1. Note: the above drawing shows a particular configuration, which includes a small case stacked on top of a large case. Other configurations may include three small cases or two large cases, provided the stack does not exceed 1350 mm in height.

2. Note: the above drawing shows a particular configuration, which includes a small case stacked on top of a large case. Other configurations may include three small cases or two large cases, provided the stack does not exceed 1350 mm in height.

WC03046 0511

Download a PDF of this document

- **Design and handling of surgical instrument transport cases**

  This guide provides guidance for designers, manufacturers, suppliers, couriers and users of surgical instrument transport cases.

  PDF File, 498.6 KB, 17/01/18 (https://www.safework.nsw.gov.au/__data/assets/pdf_file/0012/50115/SW08775-Design-and-handling-of-surgical-instrument-transport-cases.pdf)
- **Design and handling of surgical instrument transport cases: A guide on health and safety standards**

  This guide provides practical guidance for designers, manufacturers, suppliers, couriers and users of surgical instrument set transport cases, and outlines their obligations when transporting and handling the cases and their contents

  Standard Page, 05/07/16 (https://mentorbook.safework.nsw.gov.au/media/publications/health-and-safety/health-care-and-social-assistance-publications/design-and-handling-of-surgical-instrument-transport-cases/design-and-handling-of-surgical-instrument-transport-casesguide-on-health-and-safety-standards)

- **Design and handling of surgical instrument transport cases** PDF File, 498.6 KB, 01/01/70 (https://mentorbook.safework.nsw.gov.au/__data/assets/pdf_file/0003/484419/SW08775-Design-and-handling-of-surgical-instrument-transport-cases.pdf)