

SECTION FOUR

SERVICE, SERVICING & REPAIRS

4.1 SERVICE POLICY

KeyMed's policy has always been to return instruments after repair without any operating faults to ensure that our customers achieve maximum up-time.

This is why, when you send an instrument for repair specifying 'damaged lenses' or 'angulation slack', you will often receive a report detailing that we have cleaned the lens system, replaced a worn bending section rubber, adjusted the angulation system, replaced seals etc.

We hope you will agree that this is a sensible policy, operated in the best interests of our customers.

A job sheet is completed by the inspector to determine the type of repair work necessary. This job sheet also forms the basis for estimating the cost of the repair and for completing the technical report (see end of section for examples).

4.2 ROUTINE SERVICING

Rigid endoscopes and their associated accessories are normally returned for repair if problems develop with the image or the performance of the accessories.

We strongly recommend that flexible endoscopes are returned for routine servicing at least once a year.

What is covered by a routine service?

Service requirements differ depending on the model of instrument.
Typically, a routine service covers:

<u>Telescopes</u>	<u>Flexible Instruments</u>
i) Incoming fault diagnosis inspection	i) Incoming fault diagnosis inspection
ii) Dismantling to identify damaged components	ii) Angle wire tension adjustment
iii) Replacement of damaged components	iii) Angle radius adjustment
iv) Cleaning of optical system	iv) Bending section rubber replacement
v) Refurbishment of insertion tube	v) Cleaning of all channels
vi) Polishing of light transmission fibres	vi) Lubrication and replacement of perishable components
vii) Fitting of new seals	vii) Full functional check
viii) Focus and alignment checks	viii) Full leak test and issue of waterproof test certificate – see end of section for an example
ix) Test autoclaving/gassing	

4.3 TECHNICAL SERVICES CENTRE

4.3.1 Optical

The environment within our Technical Service Centre is regulated via air-conditioning, de-humidification and air filtration to prevent dirt and condensation entering the optical systems of instruments. Over 70 repair technicians work within the Centre at purpose-designed workstations suited to the exacting demands of the equipment involved.

The Centre receives on average 15-20 rigid and 90 flexible instruments per day. The majority of the flexible instruments require minor servicing, ie bending section rubber replacement, angulation adjustment or air/fluid blockage removal. Repairs of this nature are carried out in our Service Workshop, where dedicated service operatives ensure fast turnaround.

The remainder of the instruments require major repairs, with the most common fault being fluid ingress through a perforated bending section rubber. Improvements in the waterproof construction of the EVIS/OES endoscopes and the ability for the user to routinely leak test the instrument have significantly reduced the quantity of major repairs.

Typical telescope repairs include damaged lenses due to bent insertion tubes, broken eyepiece assemblies and damaged distal end windows.

4.3.2 Repair Reception

All incoming instruments are, after receipt at Goods Inwards, forwarded unopened to the Repair Reception. All medical instruments received are subjected to pre-inspection cleaning and disinfection or autoclaving, after which they are placed into purpose-designed instrument trays to prevent re-contamination from the original carrying case. During its time in the Technical Service Centre, your instrument remains in this purpose-designed tray.

A detailed record is made of the type and quantity of accessories included in the case or package. This record is checked during final inspection to ensure all accessories are returned.

The instrument is then fully inspected to establish any faults. A very important aspect of the incoming test procedure for flexible instruments is pressure testing of the bending section rubber. Using the MB-155 leakage tester, all EVIS/OES instruments are totally immersed and checked for leaks. This check, which can also be carried out by the user, is invaluable for revealing holes before they are visible to the eye, thereby preventing fluid ingress and the potentially expensive major repair.

A job sheet is generated, based on the findings of the inspection procedure and this is passed to the repair office with any supporting customer paperwork (see end of section for an example).

The aim of the company is to ensure that our customers receive the highest level of service at all times. To achieve this, the Centre works to the following repair turnaround time targets:

Rigid Repairs:	within 4 working days
Minor Endoscope Repair:	within 2 working days (over 90% on the same day)
Major Endoscope Repair:	within 5 working days
Electronic Repairs:	within 4 working days

All outstanding repairs are reviewed on a daily basis at a meeting with the Centre Managers, Supervisors, and Purchasing Controller. Any repair which will exceed the target is identified. In these cases the customer will be telephoned and written to, informing them in advance of the delay and offering a loan instrument if required.

The turnaround times achieved are reported on a weekly basis - the reasons for any failure to meet the turnaround targets are discussed at a monthly meeting with the Senior Management Team.

A spare parts stock of approximately £4 million is held within the Technical Service Centres, ranging from replacement image guides and charged coupled devices to minute screws.

On completion of a flexible repair, the instrument is leak checked and a waterproof test certificate completed - see end of section for an example. The scope is then passed to the outgoing inspection area for independent final inspection, thus ensuring consistent high quality before replacing the instrument into its original carrying case or special transit cartons for rigid equipment. A security band is then placed around the carrying case to deter unauthorised access during return transportation.

4.3.3 Technical Services Centre - Electronic

KeyMed supplies and manufactures a wide range of electronic equipment for both its medical and industrial customers. Due to the different needs and the varying physical sizes of this equipment, the responsibility for service is split into two areas as follows:

4.3.3.1 Field Service

Large equipment which cannot practically be returned to KeyMed House, is repaired/serviced on-site by our team of highly skilled Field Service Engineers who are based strategically throughout the UK. A range of service agreements is available to allow preventative maintenance visits to be carried out on a routine basis.

In addition to its normal service function, the installation of Closed Circuit Television Systems is planned by Electronic Services and depending on hospital requirements, can be installed by our Field Service Team.

4.3.3.2 In-House Electronic Service

Caters for repairs and service of portable equipment which can easily be returned via DHL. It operates on similar lines to the Optical area and holds its own independent spare parts stock to ensure fast turnaround.

The Technical Services Centre provides full service support in-field and in-house for all electronic equipment marketed by KeyMed, including the Aloka range of diagnostic ultrasound equipment for which there are dedicated specialist engineers.

4.4 SENDING YOUR INSTRUMENT IN FOR SERVICE/REPAIR

The preferential carriage rates KeyMed has negotiated with DHL also benefit our customers.

The procedure for returning equipment has also been simplified, so that collection can be arranged with one telephone call to your local DHL depot, quoting the delivery address as shown on the 'Medical Equipment for Urgent Repair' label at the end of this section.

When despatching equipment, please ensure the 'help us to return...' form (at end of section) is returned with the instrument.

Rigid instruments should be carefully packed in strong cardboard boxes or re-use the KeyMed transit cartons with foam inserts.

4.4.1 Endoscopes Covered by Service Contract – 'Gold' Card or Unconditional Guarantee – 'Silver' Card

- 1. The equipment should be properly packed in the carrying case provided, ensuring the silver Unconditional Guarantee or gold Service Contract swipe card is attached to the carrying case handle.*
- 2. The 'help us' form provided at the end of the section should be completed, detailing the nature of the fault, your name and telephone number, and placed in the case which should then be locked. A DHL 'OMEGA Standard' service label addressed to our Service Centre (see end of section for an example) should be affixed to the carrying case.*
- 3. The declaration of contamination status should always be enclosed. A blank declaration, should your hospital not have its own, can be found on the inside of the 'help us' form (see end of section for an example).*

4. *To return your instrument for service/repair by DHL, contact your local DHL branch to arrange collection and simply telephone our Technical Services Centre on (01702) 616333, quote the details on your gold/silver card and we will fast-track your instrument through our repair procedures.*

IMPORTANT: *If you have any problems related to repair or service, please contact Paul Stevens, Head of Technical Services, Mark Edmonds, Rigid and Electronic Workshop Manager or Paul Musto, General Manager – Service Workshops (01702) 616333.*

PLEASE NOTE: *'OMEGA Standard' and 'OMEGA 12' are levels of service operated by DHL.*

4.4.2 Endoscopes Not Covered By Service Contract

1. *Your Supplies Centre should be made aware that the equipment needs to be returned for repair and an official order should be raised.*
2. *Ensure equipment is properly packed - use case provided or strong box with adequate packaging.*
3. *The 'help us' form provided should be completed, detailing the nature of the fault, your name and telephone number and, if possible, the order number should be placed in the case which should then be locked. A DHL 'OMEGA Standard' service label addressed to our Service Centre should be affixed to the carrying case (see example at the end of this section). Additional labels are supplied in the case with repaired instruments on return to the hospital.*

4. *A declaration of contamination status should always be enclosed. A blank declaration, should your hospital not have its own, can be found on the inside of the 'help us' form (see example at the end of this section).*
 5. *Check the equipment **does** leave the hospital.*
 6. *If the repair is urgent, telephone (01702) 616333 to inform our Technical Services Centre of the situation.*
 7. *If the repair is minor and official order allows, we will endeavour to return the equipment within our repair turnaround target time.*
 8. *If the repair is major, your hospital will receive a detailed written estimate, together with our Repair Authorisation Telefax - see example at the end of this section.*
- IMPORTANT** - no repair work can proceed until we receive your confirmation order.
9. *Upon receipt of the hospital's signed authorisation, the repair will commence and we will endeavour to return the equipment within our turnaround target time.*
 10. *At the time of authorisation we will, if so requested, (subject to availability) endeavour to supply you with a loan instrument.*
 11. *On completion of repair the equipment will be despatched back to you via DHL 'OMEGA 12' Service.*

IMPORTANT: *If you have any problems related to repair or service, please contact Paul Musto, General Manager – Service Workshops, or Mark Edmonds, Workshop Manager – Rigid & Electronic Repairs (01702) 616333.*

4.5 RETURN OF YOUR INSTRUMENT AFTER SERVICE/REPAIR

Following the successful completion of an independent final inspection, a green 'SR' label - Serviceable Repair - is affixed to the carrying case/carton. This is your assurance that the repair has been completed or it has been 'Returned as Received' by request. Please contact our service staff should you require clarification of repair status.

Caution, if you receive a carrying case with a red 'US' label on it, the instrument has not been repaired. Please contact our service staff if this should occur.

A 'To help us speed the return of your instrument' form will be included with the repaired instrument.

Finally, the carrying case is sealed with a security band with a label attached (see example at the end of this section).

Please note:

- i) We do not lock carrying cases unless specifically requested to do so.
- ii) Delivery information is attached to the outside of the carrying case.
- iii) In the event of transit damage, please notify your local DHL branch and KeyMed Technical Services Centre immediately.

4.6 GUARANTEES & SERVICE CONTRACT

Guarantees and service contracts are available for most mainline equipment and fall into two categories - endoscopes and electronic.

Endoscopes

As part of a unique initiative from KeyMed, the majority of GI fiberscopes and video endoscopes are now covered by a three year unconditional guarantee. The majority of other OES flexible endoscopes are covered by a one year unconditional guarantee.

Once the guarantee period has expired, it can be extended by taking out a service contract, which gives complete peace of mind to you, the user. This includes the cost of all spare parts and labour, as well as transportation to and from KeyMed.

Apart from the financial savings and the ability to accurately plan your revenue expenditure, one of the major benefits of contract cover is the instant attention the equipment receives on arrival at KeyMed - there are no authorisation delays and each contract endoscope is put through our 'fast track' repair system.

To avoid the time-consuming paperwork and help us identify your instrument for priority attention, each scope under guarantee or covered by a service agreement now has a unique 'swipe card' which contains vital information about the endoscope. For ease of identification, this information should be stated during telephone enquiries and the appropriate card should be attached to the carrying case when a scope is returned to KeyMed. Details of this scheme are shown at the end of this section.

Electronic

Electronic equipment, such as light sources, ultrasound equipment etc, is covered by a one year manufacturer's warranty. Service Contracts are also available to cover all mainline equipment with a choice of standard or comprehensive cover, which includes preventative maintenance visits as well as cover for emergency call-outs. Further details are included in the example at the end of this section.

4.7 ELECTRONIC EQUIPMENT SERVICING

The policy explained for returning flexible endoscopes for repair equally applies to electronic equipment.

The majority of work undertaken on electronic items is carried out in-field, as television systems, endoscope washing machines etc, cannot be easily returned to KeyMed.

To arrange a field service visit, simply telephone one of our Field Service Co-ordinators on (01702) 616333 to agree a suitable time.

- Please remember:
- i) If your equipment is under a Service Contract, it would be helpful if you could quote the agreement number when telephoning.
 - ii) If your equipment is **not** under contract, please arrange for an official order number to be given over the telephone.

NB: A service visit cannot take place unless we have an official order number.

When a field service visit has been completed, you may be asked to sign the Field Service Engineer's visit report to confirm your acceptance that the work has been carried out. In the event of this, a copy of the report will be left for your records.

For example report, see end of this section.

4.8 LOAN EQUIPMENT

The Technical Services Centre has operated a loan service for over thirty years and our current investment is in excess of £9 million. Loan equipment is available to customers against the repair/service of their own instruments and, subject to availability, is supplied free of charge upon request. Where an identical model is not available, an alternative is offered whenever possible.

The system works on a 'first come, first served' basis, which we believe is the fairest way of operating. However, it does rely on the goodwill of customers to return the loan instruments promptly, having received their own equipment back from service.

To ensure our inventory keeps pace with demand, we monitor each occasion when we have to say "no" to a customer. A review is carried out by the KeyMed Board on a monthly basis and, if we identify a trend of refusals, consideration is given to additional investment to increase the number of loan instruments as necessary.

The period of loan is decided by the company and typically could be up to four weeks from despatch of a quotation, if the customer's instrument is not under warranty or service contract, and needs to undergo major repair, to allow adequate time for customers with monthly committee approval procedures.

Additionally, with our desire to improve, a Loan Administrator is employed to manage the despatch and return of all loan equipment and to maintain an accurate stock level at all times.

To ensure the prompt return of loan equipment, a letter from the Loan Administrator is placed in the carrying case of the repaired instrument, requesting the return of the loan. A further chasing letter from the Loan Administrator is sent if the loan is not returned within seven days. Should the instrument not be returned within a further seven days, a letter is sent from the Head of Group Technical Services, and thereafter a fourth letter sent from the Technical Director should the instrument remain outstanding three weeks from the despatch of the repair.

This attention to detail helps us to provide a more efficient level of service to our customers, with the maximum number of instruments being available for loan.

Rigid loan instruments are identified by their individual serial numbers and some items are etched as 'KeyMed loan'.

Flexible loan instruments are identified by a card permanently attached to the light guide cable stating that the instrument is a loan, belonging to KeyMed.