

Disposable Instruments for MIVS

Consistent precision performance and a wide selection make DSPs a practical choice for our retina surgeries.

By David Boyer, MD



Retina-Vitreous Associates (RVA) Medical Group in Los Angeles is a multi-surgeon retina practice. We have a total of seven retina surgeons in our practice, and we perform our procedures at Good Samaritan

Hospital, also in Los Angeles. We are fortunate to have experienced technicians and circulators within the hospital setting, but still must contend with the challenges posed by a large institution. Some examples of these challenges include having to rely on non-ophthalmic technicians when operating in the evenings and having variability in the cleaning or availability of instruments.

This series of articles will describe our experience with the GRIESHABER DSP (disposable instrumentation) line from Alcon Laboratories, Inc. (Fort Worth, TX).

IMPROVEMENTS TO EARLIER-GENERATION DISPOSABLES

When we first began performing micro-incision vitrectomy surgery (MIVS), surgeons were hampered significantly by the lack of adequate instrumentation to perform these cases. First, the lighting was poor; once improved, appropriate illumination has spurred the need for ancillary tools that match what we had available to us in 20-gauge surgery such as forceps, scissors, and membrane peelers. The second major issue with the instrumentation for MIVS was the flexibility of the instruments. The newer small-gauge instruments have been designed to be stiffer than their earlier counterparts.

Disposable instrumentation saves time and improves overall efficiency.

I tend to use the disposable forceps more than disposable scissors because the cutter on the vitrectomy system that we use, the CONSTELLATION Vision System (Alcon Laboratories, Inc.), is so effective that it has reduced the need for scissors in many diabetic cases.

For most cases, including internal limiting membrane (ILM), epiretinal membrane (ERM), proliferative vitreoretinopathy (PVR), and diabetic membrane removal, I

use the GRIESHABER DSP ILM Forceps. They allow me to work on fine membranes with precise grasping and the tip design of the ILM forceps is ideal for visualization.

PERFORMANCE WITH DSP/INCREASING EFFICIENCY

Whenever operating with single-use, disposable instrumentation, one can be certain that the scissors are always sharp, the forceps are not bent or damaged during the cleaning process, or other such damage will not have occurred. Coming into the OR and learning that the instruments are damaged, not working at all, or not at top performance is inefficient, time consuming, and an unpleasant surprise that every surgeon wants to avoid. Disposable instrumentation saves time and improves overall efficiency.

Any surgeon who operates in multiple locations can describe a case where the instruments appeared fine, but under microscopic view were clearly bent or misaligned and did not close properly.

I have personally had cases at Good Samaritan Hospital where I literally have gone through tray after tray to find one pair of workable 20-gauge forceps. It is difficult to operate when you are not confident that the instrumentation will be the best every time. It limits a surgeon from performing at top capability if the instruments are not functioning.



ILM forceps



Damage to 20-gauge reusable instruments may be more frequent with MIVS due to increased fragility.

WIDER SELECTION OF DISPOSABLE INSTRUMENTATION

Practically speaking, the handles on the GRIESHABER line of disposable instrumentation for retina surgery are very ergonomic for either a right-hand or left-hand dominant surgeon. The selection of tips available is

Eliminating Delays with DSPs

By Thomas G. Chu, MD, PhD



As a high-volume retina surgeon, one of the most important factors apart from skill and technique is the reliability of the surgical environment.

Disposable instruments increase the level of efficiency and reliability because their performance is uniform and they are ready on demand.

We have used the 23-gauge GRIESHABER DSP instruments since they became available. In retina surgery, especially MIVS, the problem with reusable instruments has been that if they are not cleaned properly or the instrument is jammed or bent (as often can be the case with fragile MIVS instruments), the surgeon often does not realize this until he or she starts to use it. This slows down the process considerably. By the time I have asked for a new instrument, I have lost time and efficiency in the surgery, which is extremely frustrating.



ILM peeling with GRIESHABER DSP 23-gauge forceps.



DSPs are always predictable and uniform. I trust and prefer their performance so much that if I am ever in a situation where I have to operate in unfamiliar surgical center, I always carry a spare DSP with me just in case, because I know I can always depend on them.

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excellent—most of the tip styles that come in reusable are available in DSP. The flexural strength of the disposable forceps in 23-gauge has been improved to where these instruments mimic their 20-gauge counterparts.

Even a style similar to the Diamond-dusted forceps (712.12.00) is now available in a disposable format with a micro-textured surface, the GRIESHABER MAXGrip DSP forceps (Alcon Laboratories, Inc.) for heavier membranes, replacing the use of ILM forceps for such cases.

TRANSITIONING TO DISPOSABLE INSTRUMENTS

In general, the transition to using disposable instrumentation for MIVS is a non-issue. We have found the GRIESHABER DSP line to be reliable, consistently precise, high-quality instruments that enabled us to have the instrument performance we expect in every case. This allows us to provide efficient surgical turnover times with excellent outcomes for our patients.



GRIESHABER REVOLUTION DSP style

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Reliability With DSP Instrumentation

By Roger Novack, MD, PhD, FACS



The majority of the surgeries that I perform are with 23-gauge technology and the CONSTELLATION Vision System. Many of the patients who I see at RVA have diabetes, so I perform a large amount of diabetic vitrectomies and thick membrane removals. I also frequently perform membrane peels for wrinkled scar tissue that has resulted from trauma, inflammation, retinal tears, or vitreous detachment

High-Volume Surgeons Benefit Using Disposable Instruments

By *Firas M. Rahhal, MD*



We perform a high-volume of vitreoretinal surgeries at Good Samaritan Hospital. This is why we use disposable instruments for MIVS. The care and maintenance of the reusable forceps vs the disposable forceps is very detailed, so it just does not make sense for our practice.

We are fortunate to have technicians who are experienced in the cleaning and handling of vitreoretinal equipment, but cleaning and sterilization takes time. For example, if I were to use reusable instrumentation,

I would need at least 15 forceps on hand to cover the average nine to 10 cases that I perform in a day. This is just not practical.

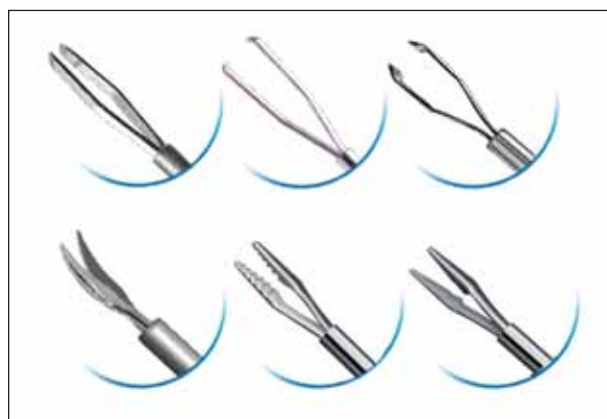
With disposable instruments, the efficiency is in the reduction of time to clean and sterilize: you unwrap, use, discard, and set up your next case.

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from cataract surgery, so the instruments that I use most frequently from the GRIESHABER DSP line are the ILM forceps, the End-Grasping forceps, and the Asymmetrical forceps.

In the OR at Good Samaritan Hospital, we use the fully disposable instruments, but at the satellite clinic where I also operate, the DSP tips are paired with reusable handles. When the entire instrument is new for every case, I am confident the scissor tips will be sharp, the forceps tips match perfectly, and the squeeze mechanism on the handle always functions well.

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GRIESHABER DSP tips. Top row, L to R: End-Grasping, ILM, Asymmetrical; bottom row, L to R: Curved Scissors, Serrated, and MAXGrip.

COMMON DAMAGE TO REUSABLES

We are lucky to have excellent staff available to us at Good Samaritan who are well-versed in the retina procedure; however, one of the common causes of damage to reusable vitreoretinal surgical instrumentation (especially 23 or 25 gauge) is improper care and handling—a problem in many hospital ORs due to the large variety of surgical procedures being performed.

Damage to the tiny and fragile reusable tips when an instrument is dropped is very common. The tips either bend or no longer will grasp/cut properly. Both are extremely aggravating situations to a surgeon.

NEW 25+ INSTRUMENTS

Although I am currently performing mostly 23-gauge

surgery, I had the opportunity to be an early evaluator of the new 25+ and EDGEPLUS entry system with the CONSTELLATION Vision System. GRIESHABER has an entire line of 25+ DSPs that are much stiffer than the current 25-gauge instruments. If the flow improvements to the vitrectomy probe prove to be as good as I predict, I may transition more of my caseload to this new technology.

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Heavy Membrane Peeling With Disposable Forceps

By Homayoun Tabandeh, MD, MS, FRCP, FRCOphth



23-gauge GRIESHABER DSP instrumentation is useful for most of my retina procedures, including complex detachment, proliferative vitreoretinopathy, and diabetic cases.

The main advantages to the DSP line of instruments are their consistency and high quality. In terms of efficiency, the disposables do not have to be sterilized, therefore it improves the OR efficiency as there is no waiting time in having a perfectly functioning instrument ready for use.

The wide range of instrument type availability has allowed me to use DSPs for many of my small-gauge cases. The new GRIESHABER MAXGrip DSP Forceps are particularly useful for peeling heavier membranes. The design of the MaxGrip DSP forceps is

better than reusables. The full handle disposable is able to rotate 360°. The grasping ability of this forceps is more precise and additionally, the visibility is also better with these forceps due to the angle of the tip and the fact that the surface of the tip is not as light-reflective as other forceps.



MAXGrip DSP Forceps are designed for heavier membranes.

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Clinical Experience With DSP Instrumentation



An interview with Richard Roe, MD

Q: What types of surgeries do you currently perform?

Dr. Roe: I perform the full gamut of retina surgery—mainly retinal detachment repair, vitreous hemorrhage, epiretinal membrane peeling, internal limiting membrane (ILM) peeling, macular hole repair, and diabetic tractional detachment repair. The most common cases I see are those associated with diabetic retinopathy.

Q: What, in your opinion, is the major advantage of disposable vs reusable instruments for vitreoretinal surgery?

Dr. Roe: Fragile 23- or 25-gauge reusable instruments can become bent during the sterilization process and damaged with improper storage. When the action on an instrument is not as smooth, or a tip not as sharp or precise as needed, the surgeon is essentially in a bind.

With DSP instrumentation, you are getting a new instrument every time. The surgeon can be confident that the instrument will function properly with the exact amount of precision necessary.

Q: Are you using disposables for your more difficult cases?

Dr. Roe: Yes. For diabetic tractional detachment, I like to use the GRIESHABER DSP End-Grasping ILM 23- or 25-gauge forceps (Alcon Laboratories, Inc.) as well as the 23-gauge curved scissors (Alcon Laboratories, Inc.). I typically use a chandelier light in these cases, allowing me to employ a bimanual delamination technique.

When I perform lensectomies, where the residual lens capsule membrane must be removed, I find a significant advantage in using the GRIESHABER DSP 20-gauge lighted forceps (Alcon Laboratories, Inc.). These forceps are fantastic for three

reasons. First, the forceps are lighted, so visibility is immediately improved. Second, they are disposable, which is an advantage in both convenience and my confidence in their performance. Third, the 20-gauge size can be used with MIVS because any time the sclerotomy site is opened for the lensectomy, it must be done with a 20-gauge fragmatome, so the 20-gauge lighted forceps also fit and work well for this use.



GRIESHABER DSP 20-gauge lighted forceps

Q: How does the performance and reliability of DSPs affect your decision making process in surgery?

Dr. Roe: I prefer the 25-gauge GRIESHABER disposable forceps for epiretinal and ILM peeling, even over the 23-gauge forceps because I find that I have better control with the smaller instrument. I have tried other 25-gauge reusable and disposable instruments for these tasks, but the GRIESHABER DSP is the best I have used.

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Making the Case for DSPs: Safety, Efficiency, and Cost

By Willie Smith, Surgical Technician

I have been a surgical technician for the retina surgeons at RVA Medical Group for 18 years and an employee at Good Samaritan Hospital, where the surgeons at RVA operate, for 22 years. My duties as a surgical technician include maintaining the surgical supply stock and coordinating the appropriate supply with the caseload in each OR.

For retina surgery at Good Samaritan Hospital, we primarily use disposable instrumentation. Our choice is the GRIESHABER DSP line from Alcon Laboratories, Inc. Most of the procedures that we perform are 23-gauge, although we occasionally use 25-gauge and at times, still require 20-gauge instrumentation.

We rarely still employ reusable instruments for vitreoretinal surgery, especially because GRIESHABER now has a broader range of small-gauge disposable instruments available for MIVS. I have considerable experience with reusable instruments, and can attest that the disposable instrumentation is better because of safety, convenience, efficiency, and cost.

REQUIREMENTS FOR STERILIZATION OF REUSABLES

The sterilization for reusable instruments requires a significant amount of time, attention, and cost. The instruments must be flushed, rinsed in an ultrasonic solution, cleaned, and soaked to ensure no tissue is remaining, no rust is present, and that the mechanism is functioning smoothly. The instruments are then wrapped and “cooked” at a minimum of 270°

(as required by the Joint Commission on Allied Health Personnel in Ophthalmology [JCAHPO]) for at least 10 minutes.

We use flash sterilization in house. We do not use steam for vitreoretinal instruments, because, although it works well for larger instruments, the required high temperatures and pressure of the steam place a considerable amount of stress on delicate instruments. Particularly for reusable MIVS instrumentation, the stress of steam sterilization can cause bending, breakage, and general damage. Even when using flash sterilization, where the instrument is unwrapped and cooked at even higher temperatures but for a shorter period of time, the stress can be damaging.

Gas sterilization is also widely used and is considered effective. Gas sterilization requires slightly lower temperatures but requires a longer amount of time and, in the city of Los Angeles, hospitals are required by the Environmental Protection Agency to send instruments out for gas sterilization due to the fragility of the ozone layer in the region. So, to gain the benefit of a more “gentle” sterilization process, instruments are out of circulation for a longer period of time.

I have considerable experience with reusable instruments, and can attest that the disposable instrumentation is better because of safety, convenience, efficiency, and cost.

In terms of cost, the autoclaving process requires labor and equipment. Additionally, any time that an instrument tray is out for sterilization, this means that perfectly functioning backups must be in place—for the RVA surgeons at Good Samaritan Hospital, we would typically have 10 trays of reusable instruments to every room. The labor required for sterilizing instruments in house is approximately 10 to 15 hours with an average of eight of those hours being charged time and a half for overtime. I typically handle the flash sterilization because after the process has been completed, the instruments must be carefully examined under the microscope to look for damage. Because I have the most experience with sterilization and instrument inspection, I feel most comfortable completing this task. I do not want to risk an instrument going onto a tray only for the surgeon to find a bent tip or an instrument not in working order.

DSPs: CONSISTENTLY COMPLIANT WITH CONSISTENT PERFORMANCE

What I like most about the GRIESHABER DSP instruments is that no sterilization is required. My top concern is the same as the surgeons with whom I work: safety. I do not have to worry about contamination or infection because they come out of the package completely sterile. Additionally, the instruments come out new and in top condition, which ensures good performance for every case.

In terms of efficiency, the use of disposable instruments eases the burden placed on the hospital by JCAHPO requirements for flash or traditional sterilization. Because we have a heavy case load for retina procedures, approximately 50 cases per week, in 1 day alone we may use as many as 10 to 15 ILM forceps and possibly seven to eight end-grasping forceps. By using disposables for these cases, our turnover time is consistent, and we do not have to purchase multiple trays of instruments and then constantly send them out for cleaning, sterilization, and repair.

My top concern is the same as the surgeons with whom I work: safety. I do not have to worry about contamination or infection.

COST SAVINGS AND EFFICIENCY WITH DSPS

The efficiency of DSPs lies in being able to have the instrument packaged, sterile, and ready to use. In my role as a technician, I find the most value in that with disposable instrumentation, I can keep the surgeons happy—they have the instruments that they need when they need them, and in the condition required for reliable, repeatable performance, and excellent surgical outcomes.

Willie Smith is an ophthalmic surgical technician at Good Samaritan Hospital in Los Angeles.

A Nurse's Perspective on the Efficiency of Disposable Instruments

My role as the circulating nurse requires that I ensure the best possible patient care by attending to the needs of the surgical team during vitreoretinal procedures at Good Samaritan Hospital. I have worked with the surgeons from RVA for 15 years and in that time I have seen significant advances in vitreoretinal surgery. The most recent significant advance has been the introduction of MIVS. The smaller incisions with MIVS results in a more efficient procedure and patient outcomes are good.

When we were performing mostly 20-gauge surgeries with reusable instrumentation, it was not unusual to

have to send out an instrument for repair after two or three uses. This is obviously an inconvenience, and one could assume damage would be more likely with smaller instruments.

The instrumentation for MIVS is more fragile and delicate, and may be easily damaged with reuse. This is why we prefer disposable instruments and use the GRIESHABER DSP line from Alcon Laboratories, Inc., for all of our small-gauge vitreoretinal surgeries.

- Ms. Kim, Circulating Nurse, Good Samaritan Hospital



GRIESHABER DSPs are available in the Revolution DSP and DSP tips styles.

Alcon