

INSTRUCTIONS

Thank you for purchasing the Vision Assessment Corporation Binocular Vision Dysfunction Diagnostic & Treatment System, P/N 1070-PL.



INTRODUCTION

The diagnostic Fixation Disparity Targets included in this system can be administered in free space or behind a refractor and presented at a variety of working distances and directions of gaze. These targets, while easy to administer and simple for the patient to understand, are sensitive to suppression and measure vertical and horizontal binocular function. The hierarchical system of Vectographs included in this system can then be used to aid effective treatment of binocular vision disorders.

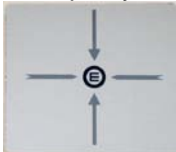
FAMILIARIZE YOURSELF WITH THE SYSTEM

- System includes:

- 1 Near Fixation Disparity Target (NFD)



- 1 Far Fixation Disparity Target (FFD)



- 3 Polarized Variable Vectographs

- 1 GEM Polarized Variable Vectograph



- 1 GEM PL Polarized Variable Vectograph

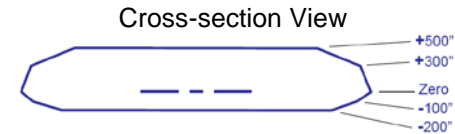


- 1 GEM PL-NFL Polarized Variable Vectograph




SCORING

- Each letter A-P on the bottom blue bar represents one diopter (Base-In) (Divergence / Relaxing).
- Each number 1-10 on the bottom blue bar represents one diopter (Base-Out) (Convergence / Crossing).
- Each number 10-24 represents two diopters (Base-Out) (Convergence / Crossing).
- 40 diopter range of separation available.
- 5 layers in the Vectograph have a range of 700 sec of arc.



CARE/HANDLING & STORAGE

- Clean vectographic panels, guide, NFD & FFD with a soft, damp, lint-free cloth. Dampen cloth using glass cleaner or mild detergent/water.
- CAUTION: DO NOT IMMERSER THE VECTOGRAPHIC PANELS, NFD OR FFD IN WATER. DO NOT SPRAY CLEANER DIRECTLY ONTO PANELS, NFD OR FFD.**
-  Store Vectographs, NFD & FFD in a dry place away from direct sunlight.
- Clean polarized viewers using lens cleaner and soft, lint-free cloth.
- If vectographic panels are removed from guide during cleaning, replace the panels in the guide placing the panel with the blue bar on top of the panel with the numbers/letters and ensuring that the plastic portion of the guide is behind the panels.

WARRANTY

- 1 year manufacturer warranty from date of purchase.

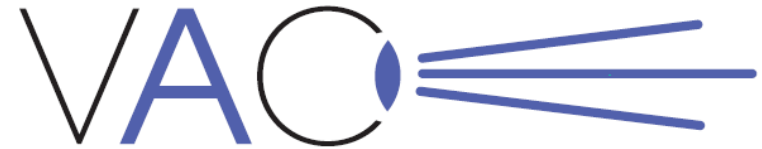
RELATED PRODUCT

- Variable Fixation Disparity Polarized Variable Vectograph:**
This Vectograph is utilized to assure that the concepts of the Binocular Vision Dysfunction Diagnostic & Treatment System, P/N 1070-PL, have been truly learned and can be applied. This Vectograph no longer has the peripheral three-dimensional float, provided by the GEM, to cue the patient where to look to help align the convergence or divergence demand on the cross.



(P/N 1065PL-VFD)

NOTES



Vision
Assessment
Corporation

*Binocular Vision Dysfunction
Diagnostic & Treatment
System*

**P/N 1070-PL
INSTRUCTIONS**

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3. Once this Break Point has been reached, add another 5pd of demand. Then gradually decrease the demand until alignment of the arrows and clarity of the **E** has been obtained. Record this Recovery Point in prism diopters.

PLEASE NOTE: The time it takes to recover alignment, for a given prism demand, can be thought of as the patient's prism adaption time.

- **TREATMENT VECTOGRAPHS**

- A. GEM Polarized Variable Vectograph**

1. Start with the GEM Polarized Variable Vectograph (Vectograph without Fixation Disparity and Fusion Lock). This peripheral GEM Vectograph provides the patient with an introduction to peripheral binocular experiences.
2. Place the polarized viewers on the patient.
PLEASE NOTE: Doctor should advise whether or not polarized viewers should be worn over patient's prescription glasses.
3. Begin by aligning the panels at 0, and then slowly move the panels apart and instruct the patient while looking toward the center of the GEM to try to maintain a single GEM image.
4. As the panels are separated ask the patient to notice the changes in size and orientation of the GEM image, or SILO (**S**mall **I**n **L**arge **O**ut) Effect. As the space in the blue bar moves along the letters from A to P, the GEM image should get **L**arger and float back or **O**ut from the Vectograph (divergence). As the space in the blue bar moves along the numbers from 1-24, the GEM image should get **S**maller and float closer or **I**n from the Vectograph (convergence).
5. If the patient can see the SILO Effect, skip to step 7. If the patient is unable to see the SILO Effect, use the suppression check in the upper right-hand corner of the Vectograph by asking the patient to look at the +, L & R. The patient should be able to see both the L & R (Left & Right) below the +. If the patient is unable to see both letters, instruct him/her to cover the opposite eye for the side he/she cannot see. For example, if the patient cannot see the R (Right), have him/her cover his/her left eye. Have the patient focus with the one eye until he/she is able to see the letter that was not previously seen when viewing the Vectograph binocularly. Then again have the patient view the Vectograph binocularly to ensure that now he/she can see both the L & R. Once both the L & R can be seen, again slowly separate the panels to ensure that the patient can now see the SILO Effect.
6. As you slowly slide the panels apart, have the patient indicate when he/she is no longer able to fuse the GEM image (Break Point).
7. Note the number/letter located in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
8. Next, as you slowly slide the panels back together, ask the patient to indicate when he/she is able to see the GEM image as a single clear image again (Recovery Point).

9. Note the number/letter located in the in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
10. Repeat Steps 3-9 until patient can achieve doctor's recommended goal.

- B. GEM PL Polarized Variable Vectograph** (Vectograph with Fixation Disparity Cross & Fusion Lock).

1. Next use the GEM Polarized Variable Vectograph with Fixation Disparity Cross with Fusion Lock. The Fixation Disparity cross with Fusion Lock represents a central two-dimensional target that helps relate binocular alignment to accommodation (clarity of the target). The peripheral image created by the GEM Vectograph provides a peripheral cue to aid alignment of the more central Fixation Disparity cross. The GEM float teaches where and how to look to obtain alignment on the focal cross. This Vectograph was designed with the Fixation Disparity cross and the GEM on the same z axis. By orienting the peripheral three-dimensional perceptual presentation with the central two-dimensional fusion target it is easier to compare these experiences to facilitate learning strategies.
2. Hold the Vectograph approximately 16 inches (40cm) in front of the patient.
3. Begin by aligning the panels at 0.
4. Slowly slide the panels apart and ask the patient to try to maintain a single GEM image while also trying to keep the Fixation Disparity cross and **E** in the center of the GEM image as single clear images.
5. As the panels are separated ask the patient to notice the changes in size and orientation of the GEM image and targets, or SILO Effect.
6. Have the patient indicate when he/she is no longer able to fuse the GEM image or the Fixation Disparity Target (Break Point).
7. Note the number/letter located in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
PLEASE NOTE: If the patient experiences difficulty with divergence (moving along the blue bar from A-P), move to section C. Then combine what the patient has learned from the GEM PL-NFL Variable Vectograph with the experiences on the GEM PL Variable Vectograph to evaluate their understanding and transfer of the strategies involving divergence.
8. Next, as you slowly slide the panels back together, ask the patient to indicate when he/she is able to see the GEM as fused into one image, the Fixation Disparity Target arrows as aligned without suppression and the **E** Fusion Lock as clear (Recovery Point).
9. Note the number/letter located in the in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
10. Repeat steps 3-9 until patient can achieve the doctor's recommended goal.

C. GEM PL-NFL Polarized Variable Vectograph (Vectograph with Fixation Disparity Cross & No Fusion Lock).

1. This Vectograph is used when divergence is difficult to achieve. The concept behind this Vectograph is to shift the Fusion Lock from the central Fixation Disparity **E** (circle) lock to the peripheral lock represented by the GEM. The patient is guided to become more aware of the periphery. The Vectograph is to be held in front of a wall or window to encourage more panoramic or peripheral awareness. This helps the patient to discover a strategy that aids divergence. Once this concept is learned it can then be applied back to the GEM-PL Vectograph. Strategies involving the periphery can be applied to divergence in spite of the presence of the clear central Fusion Lock of the Fixation Disparity cross.
2. Hold the Vectograph approximately 16 inches (40cm) in front of the patient.
3. Begin by aligning the panels at 0 and slowly slide the panels apart so that the space in the blue bar moves along the letters from A to P and ask the patient to try to maintain the arrows as aligned while attending to the float of the peripheral GEM.
4. Have the patient indicate when the arrows are no longer aligned (Break Point).
5. Note the letter located in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
6. Next, as you slowly slide the panels back together, ask the patient to indicate when recovery of the arrow alignment is achieved (Recovery Point).

PLEASE NOTE: Encourage awareness of the Gem to guide attention toward the periphery. Once this concept is understood and applied it should allow the patient to achieve a higher level of divergence recovery.

7. Note the letter located in the in the space on the blue bar at the bottom of the Vectograph. Refer to "SCORING" section of this manual.
8. Repeat steps 3-7 until patient can achieve the doctor's recommended goal.

PLEASE NOTE: The emphasis of this GEM PL-NFL Vectograph is to aid divergence breaks and recoveries. It is used to teach the power of engaging periphery and its leverage on divergence. The key element is the ability to understand these concepts and to then be able to transfer them to the other Vectographs. The end result is for the patient to handle a high level of convergence or divergence prism demand with a rapid prism adaptation time, while at the same time maintaining alignment of the central Fixation Disparity arrows and clarity of the Fusion Lock **E**. Flexibility and stamina are also very important qualities of normal binocular vision which need to be addressed in treatment.

4. 1 Pair Standard Polarized Viewers



(NOT TO BE USED AS SUNGLASSES)

5. 1 Therapy Binder with Pen
6. 1 Instruction Manual

ADMINISTRATION

• **ASSESSMENT**

A. NEAR POINT OF FIXATION DISPARITY (NPF)

1. Start with the NPF. The Near Point of Fixation Disparity (NPF) is classically performed in free space. It is administered in the same way as the Near Point of Convergence (NPC); however, the break point of the NPC is double vision, while the break point of the Near Point of Fixation Disparity (NPF) is the distance at which a Fixation Disparity is present and which cannot be resolved within a 1-2 second time period.
2. Place the polarized viewers on the patient.
PLEASE NOTE: Doctor should decide whether or not polarized viewers should be worn over patient's prescription glasses.
3. Start the NPF by holding the Near Fixation Disparity (NFD) Target at approximately 50 inches (127cm) in front of the patient.
PLEASE NOTE: A further distance may be required if the arrows are sliding at 50" (127cm) and beyond. The Far Fixation Disparity (FFD) Target can then be used to determine if an unresolved Fixation Disparity is present at all distances.
4. Start slowly moving the NFD Target toward the patient while asking the patient to try to maintain the Fusion Lock **E** as clear.
5. Ask the patient to identify both when the arrows *first* begin to slide or slip. Note the distance at which they cannot be realigned in the time it takes to ask him/her "Are they still sliding?" This duration is approximately 1-2 seconds. Record this distance as his/her Break Point.
6. The NPF recovery is determined by gradually moving the NFD Target away from the patient until the patient indicates that the arrows have realigned and the **E** is clear. These findings constitute the Break and Recovery Points of the NPF and are recorded by distance.

B. ASSOCIATED VERGENCE MEASURES AT NEAR & FAR

1. Associated Vergence Measures are done at near (16"-18") (41cm-46cm) with the NFD Target and at far (20ft) (6m) with the FFD Target. This testing is typically done with a Risley prism in free space; however, it can also be done behind the refractor with bilateral Risley prisms. Convergence or divergence prism demand is gradually increased. The divergence prism demand is classically administered before convergence demand. The prism demand that exceeds the ability for binocular function to compensate manifests as a Fixation Disparity that cannot be resolved within 1-2 seconds or the time it takes to ask the patient "Are they still sliding?" Record this Break Point in prism diopters.
2. During this testing it is important to ask the patient to attend to the clarity of the **E** Fusion Lock.