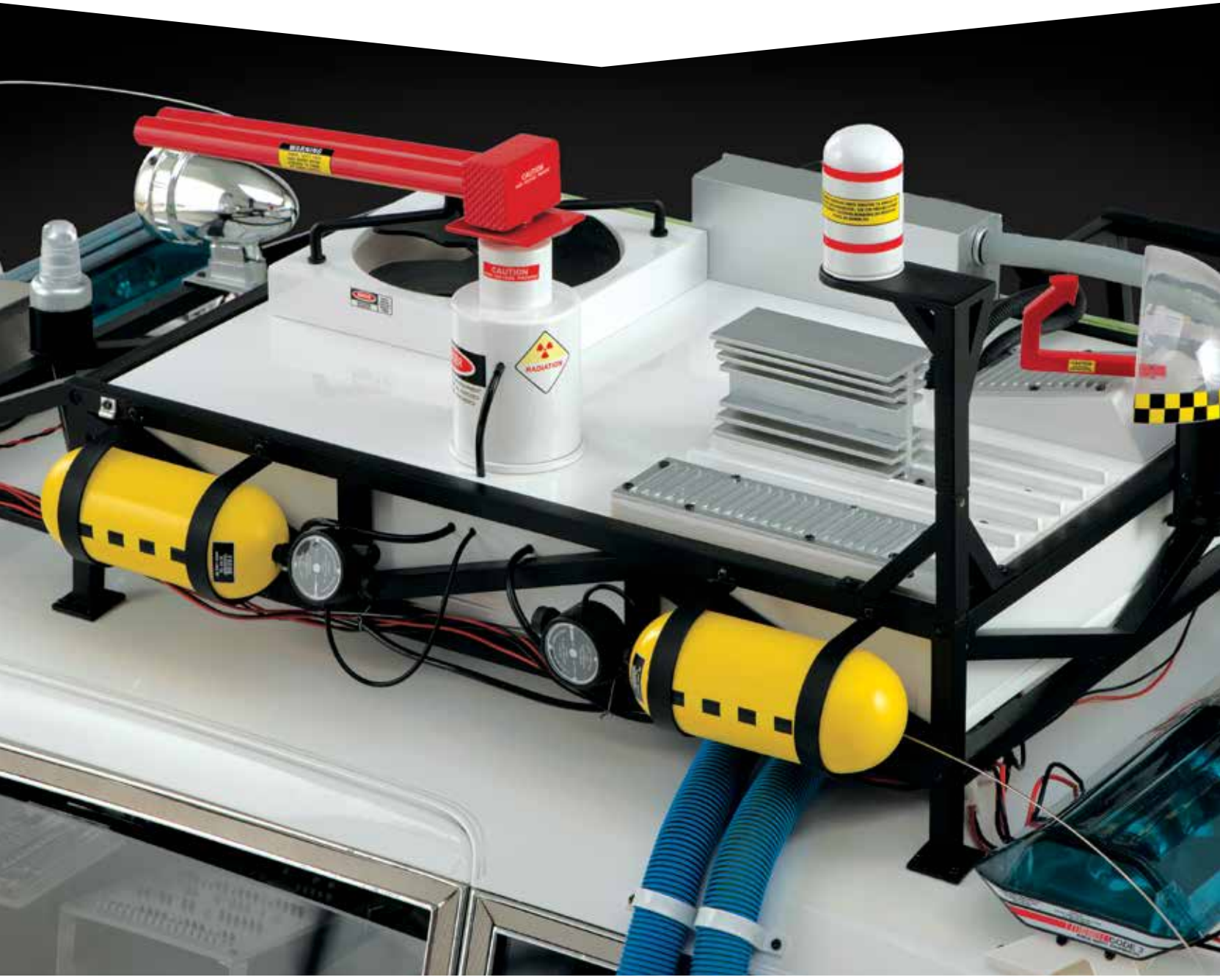
ISSUE 15

BUILD THE GHOSTBUSTERS™ ECTO-1



FANHOME

BUILD THE ICONIC ECTO-1 CAR FROM GHOSTBUSTERS™


WARNING
CAUTION
RADIATION

BUILD THE GHOSTBUSTERS™ ECTO-1

CONTENTS

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The price of this issue includes the magazine and the attached pieces for model assembly.

TO OUR READERS
The publisher reserves the right to modify any components as required during the course of the collection. Not suitable for children under the age of 14 (12 in the USA). This product is not a toy and is not designed or intended for use in play. The collection is complete in 37 issues. Items may vary from those shown.

More information at **fanhome.com**

CAR PARTS STAGE 51

In this stage, you receive more gadgets to add to the driver's side rear workstation.

51A

51B

51C

51D

51G

51E

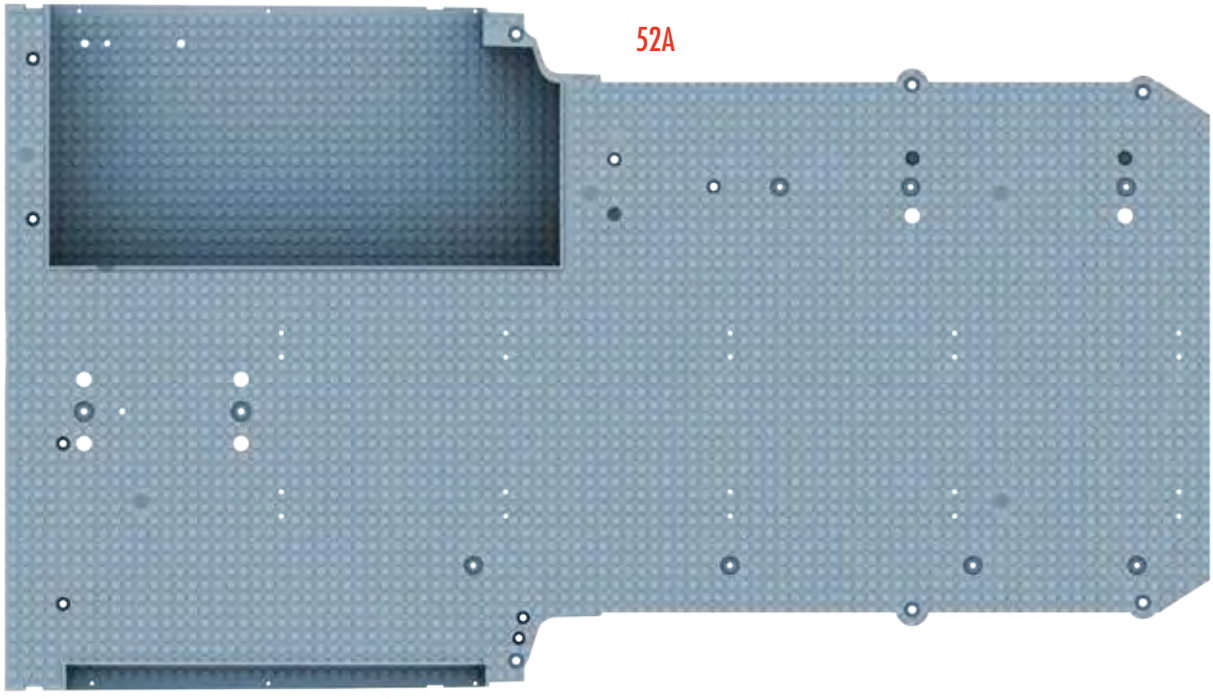
51F

BP x10

PART NUMBER	DESCRIPTION	QUANTITY
51A	SONO CHANNEL ASA-20	1
51B	SONO CHANNEL ASA-20 BASE	1
51C	SWITCH PANEL (MSC P/N 10-A THROUGH 12-C)	1
51D	FLEX TUBE 1	2
51E	FLEX TUBE 2	2
51F	FLEX TUBE 3	2
51G	CABLE TIE	2
BP	1.5x4MM	10 (+3 SPARES)

CAR PARTS STAGE 52

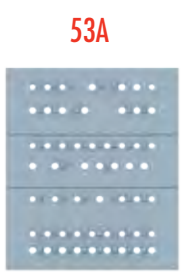
In this stage, you receive the cargo area floor,
on which much of the Ecto-1's lab equipment will sit.



PART NUMBER	DESCRIPTION	QUANTITY
52A	CARGO AREA FLOOR	1
DP	2x6MM	4 (+1 SPARE)
LP	2.3x4MM	2 (+1 SPARE)
NP	2.3x6MM	5 (+2 SPARES)

CAR PARTS STAGE 53

In this stage, you receive parts for the simulation switch control panel and oscilloscope.



PART NUMBER	DESCRIPTION	QUANTITY
53A	ANALOG/DIGITAL SIMULATION SWITCH CONTROL PANEL	1
53B	ANALOG/DIGITAL SIMULATION SWITCH CONTROL PANEL BASE	1
53C	TEKTRONIX TYPE RM561A OSCILLOSCOPE BODY	1
53D	TEKTRONIX TYPE RM561A OSCILLOSCOPE LEFT SIDE	1
53E	TEKTRONIX TYPE RM561A OSCILLOSCOPE RIGHT SIDE	1
53F	TEKTRONIX TYPE RM561A OSCILLOSCOPE BASE	1
53G	TEKTRONIX TYPE RM561A OSCILLOSCOPE HANDLE	2
53H	TEKTRONIX TYPE RM561A OSCILLOSCOPE COMMAND PANEL	2
53I	TEKTRONIX TYPE RM561A OSCILLOSCOPE MONITOR	1
53J	CONTROL PANEL SHORT SUPPORT	2
53K	CONTROL PANEL LONG SUPPORT	2
EP	1.7X4MM	4 (+1 SPARE)
GP	1.5X3MM	4 (+1 SPARE)
IP	2X5MM	4 (+1 SPARE)
KP	1.7X3MM	8 (+2 SPARES)

CAR PARTS STAGE 54

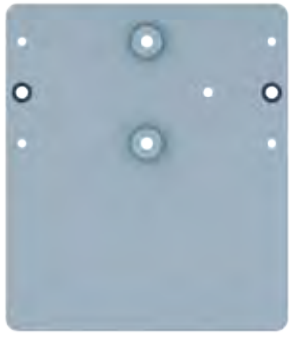
In this stage, you receive parts for the BGM-340 guidance system.

54A

54B

54C x2

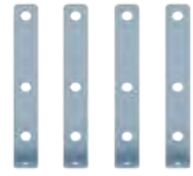
54D



54E x5

54F x2

54G x4



AP x6

IP x4

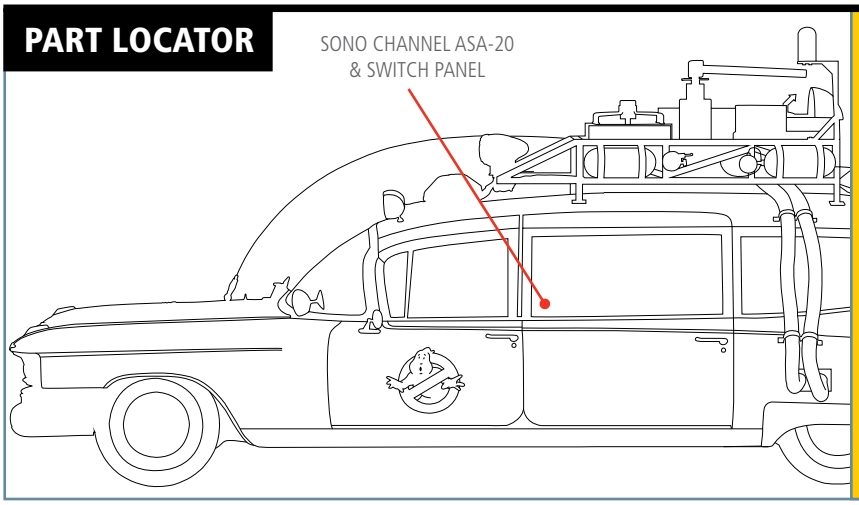
KP x16

PART NUMBER	DESCRIPTION	QUANTITY
54A	BGM-340 GUIDANCE SYSTEM TOP	1
54B	BGM-340 GUIDANCE SYSTEM	1
54C	BGM-340 GUIDANCE SYSTEM SIDE PANEL	2
54D	BGM-340 GUIDANCE SYSTEM BASE	1
54E	BGM-340 GUIDANCE SYSTEM KNOB A	5
54F	BGM-340 GUIDANCE SYSTEM KNOB B	2
54G	OSCILLOSCOPE SUPPORT STRUT	4
AP	1.7X5MM	6 (+2 SPARES)
IP	2X5MM	4 (+1 SPARE)
KP	1.7X3MM	16 (+3 SPARES)

STAGE 51
SONO CHANNEL ASA-20 AND SWITCH PANEL

In this stage, you assemble and fit the Sono channel ASA-20 and switch panel.

PART LOCATOR



TIP: USING CABLE TIES

To use a cable tie, thread the pointed end of the cable through the locking piece. To tighten, pull the end of the cable, during which you should hear a clicking sound. They are single-use, so check carefully that you are putting them in the right position before use.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY–BLUE** Indicates the previous assembly on to which the new part is fitted

01

FITTING PARTS TO THE WORKSTATION: Begin by taking the Sono channel ASA-20 (51A) and placing it atop its base (51B). Secure these two parts together using two BP screws (figure A). Next, take the assembled pieces and place them on the top of the driver's side rear workstation (49A), fixing with two BP screws (figure B). Finally, fasten the switch panel (51C) to the top of the driver's side workstation (49A) with six BP screws (figure C).

FIGURE A

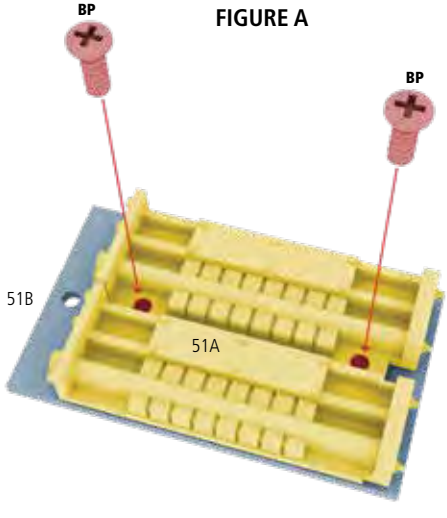


FIGURE B

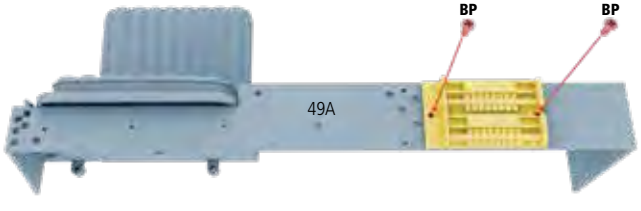
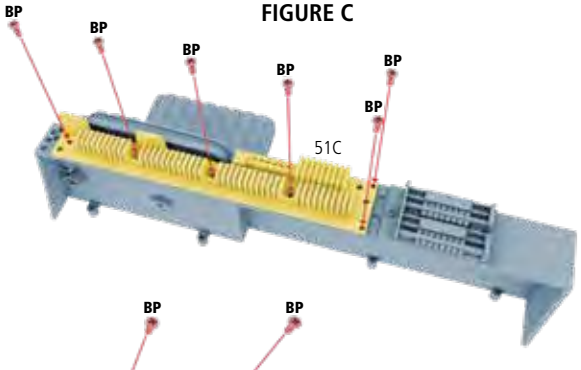


FIGURE C



02 **FIXING THE FLEX TUBES:** Fit the two flex tube 1 parts (51D) to the driver's side rear workstation and switch panel as shown (figure A). Then, fit the two flex tube 2 parts (51E) as shown in figure B. Next, fit one end of both of the flex tube 3 parts (51F) to the driver's side rear workstation so the six tubes are bundled together (figure C).

Next, take the first cable tie (51G) and wrap it around one end of the bundle, pulling taut and removing the excess part of the cable tie using scissors. Repeat this at the other end of the bundle with the remaining cable tie (figure D). The two flex tube 3 parts (51F) are substantially longer than the rest and should be hanging out as shown, to be fitted later.

FIGURE A

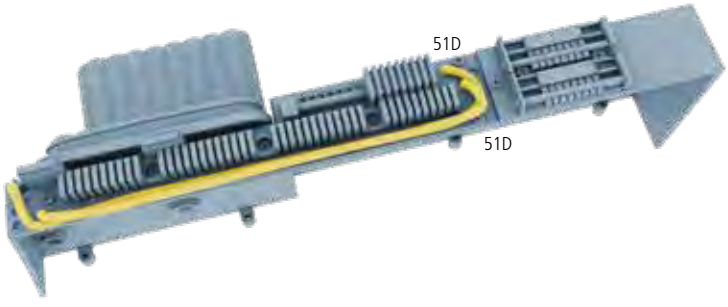


FIGURE B

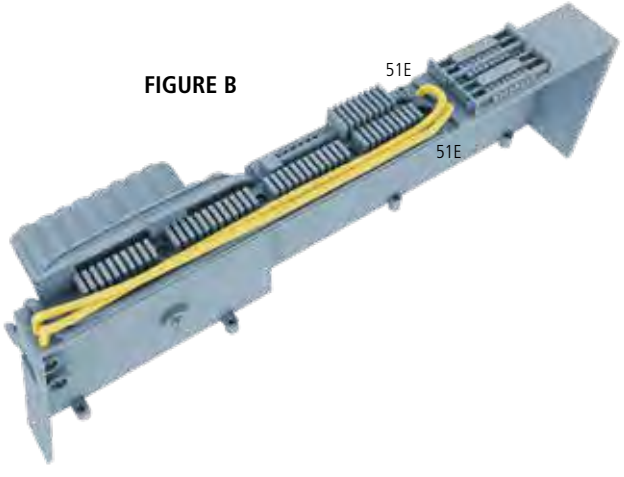


FIGURE C

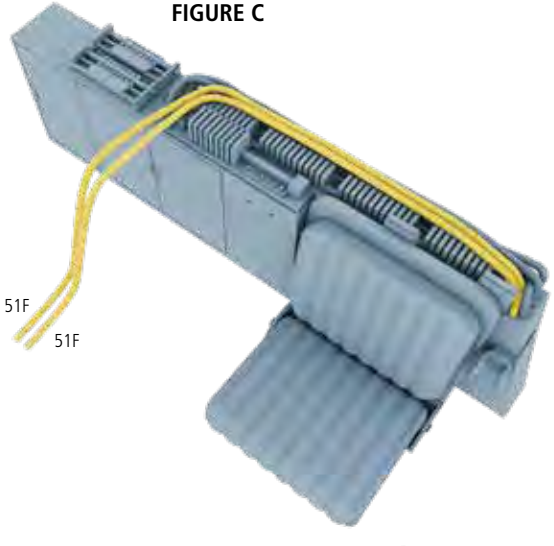
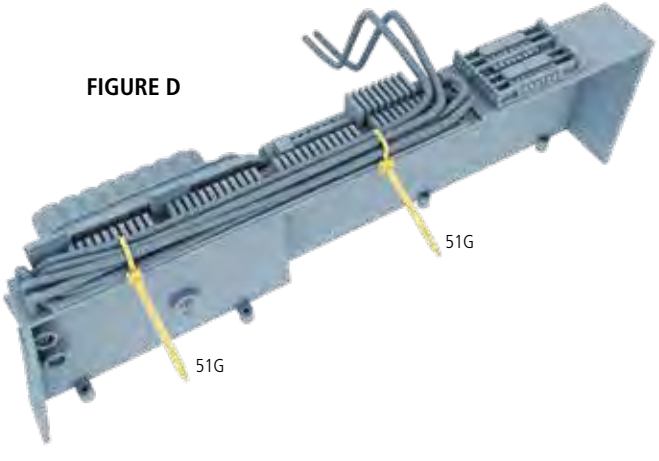


FIGURE D



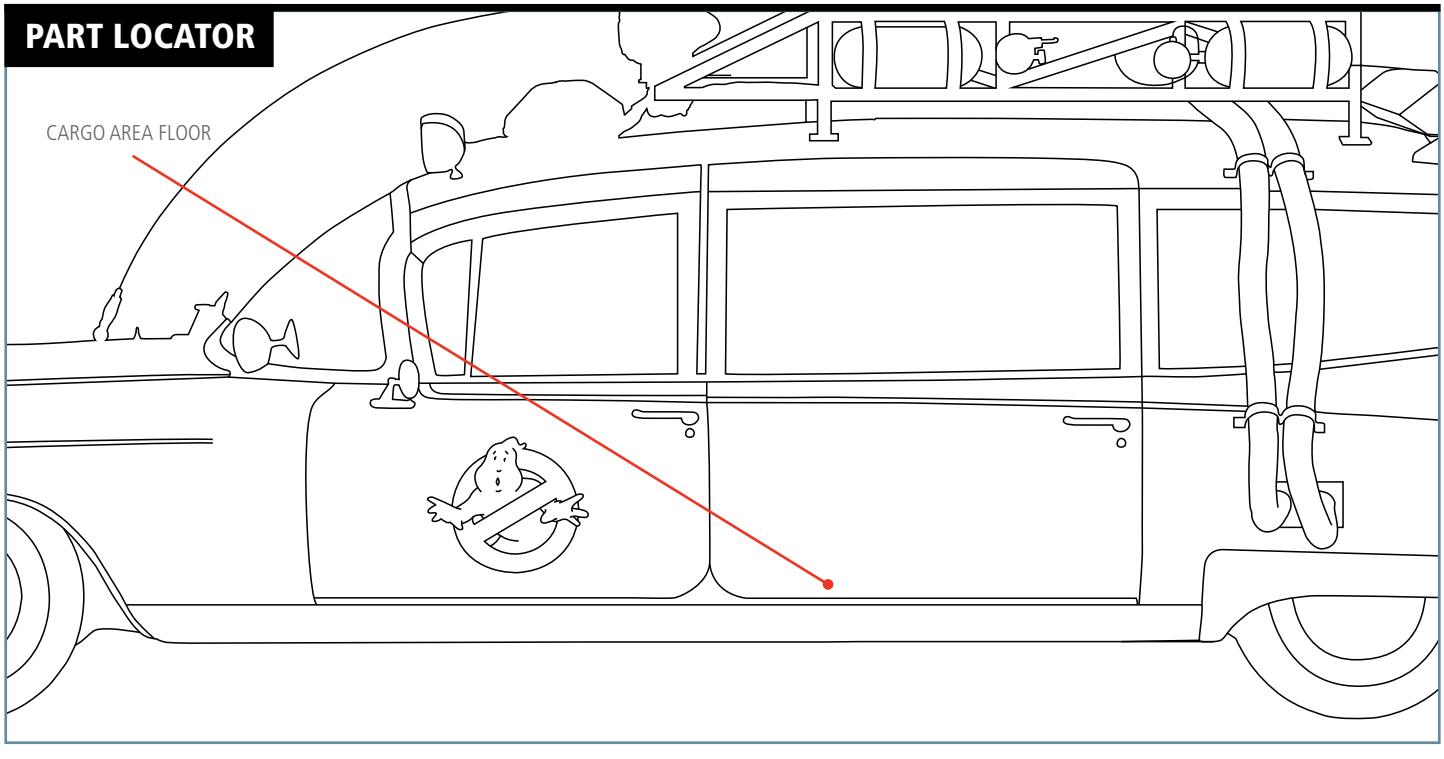
STAGE 51 BUILD

This is what the assembled piece should look like.

STAGE 52
CARGO AREA FLOOR

In this stage, you fit the cargo area floor to the front inner floor.

PART LOCATOR



TIP: TIGHTENING THE SCREWS

Screws with codes ending in the letter M (such as BM and CM) drive into metal. Those ending in the letter P (such as BP and CP) drive into plastic.

Self-tapping screws for metal cut their own thread in the pre-drilled socket. To prevent the screw from jamming before it is fully tightened, drive the screw only halfway in at first. Then unscrew it to release the shavings (swarf) created as the screw cuts its thread. Finally, drive the screw fully into the socket.

Do not over-tighten screws into plastic. For screws into metal, ensure that they are tightened securely so that the head makes firm contact with the fixing surface.

KEY: The illustrations are color-coded to help you identify which parts are being assembled.

RED Highlights where the new part/s fit and screw in

YELLOW Identifies the new part/s

GRAY–BLUE Indicates the previous assembly on to which the new part is fitted.

01 **FITTING THE DRIVER'S SIDE WORKSTATION:** Take the driver's side workstation that you were working on in phases 49-51 and set it on the front of the cargo area floor (52A) (figure A). Turn these parts over, carefully holding the parts together and secure them together with four DP screws (figure B).

FIGURE A

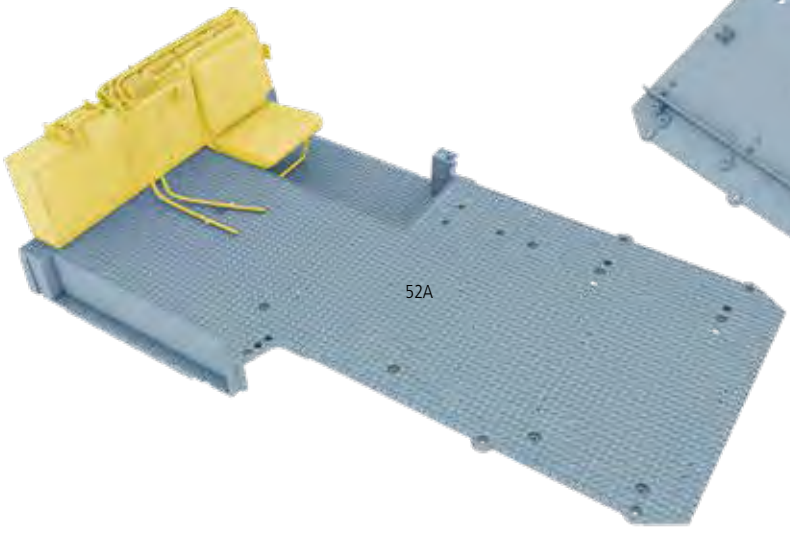
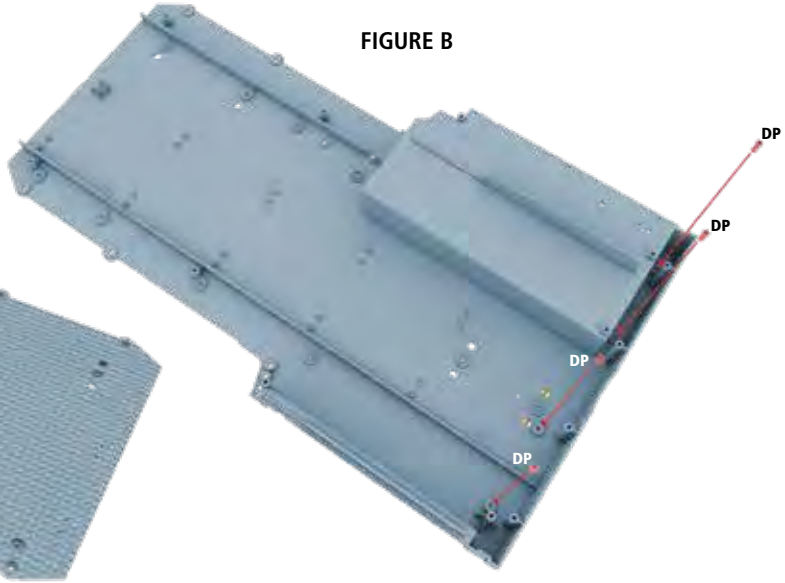
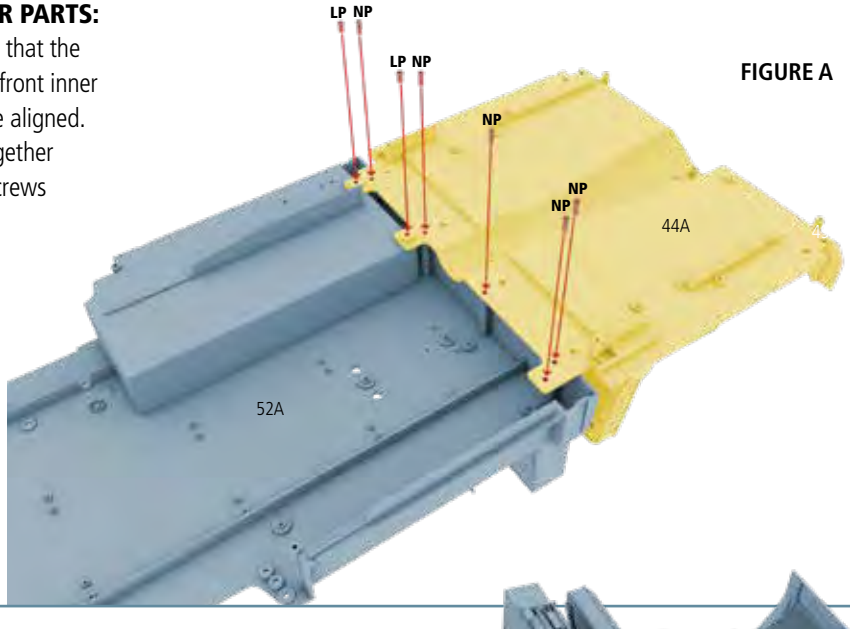


FIGURE B



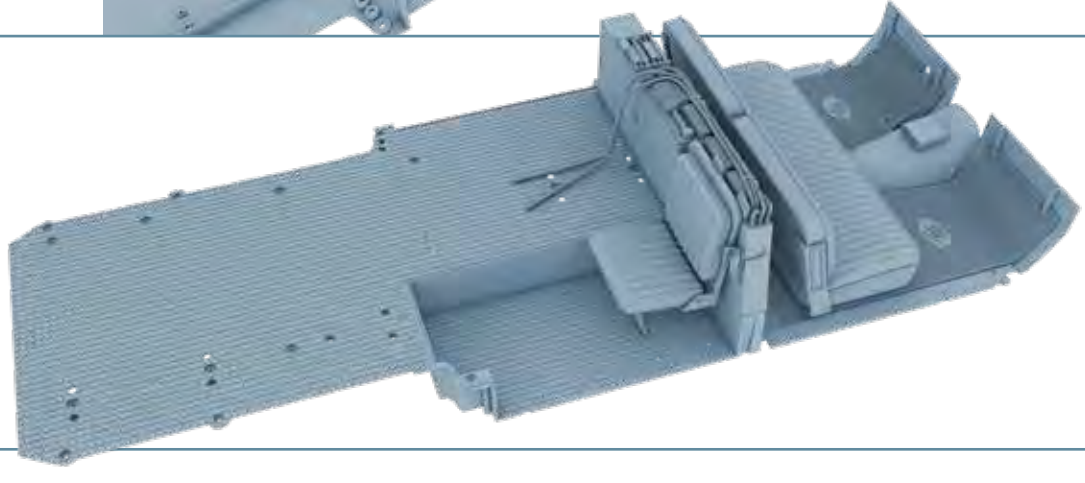
02 **ATTACHING THE INNER FLOOR PARTS:** Place the cargo area floor (52A) so that the front edge overlaps the end of the front inner floor (44A) and the screw holes are aligned. Turn the pieces over and secure together using five NP screws and two LP screws (figure A).

FIGURE A



STAGE 52 BUILD

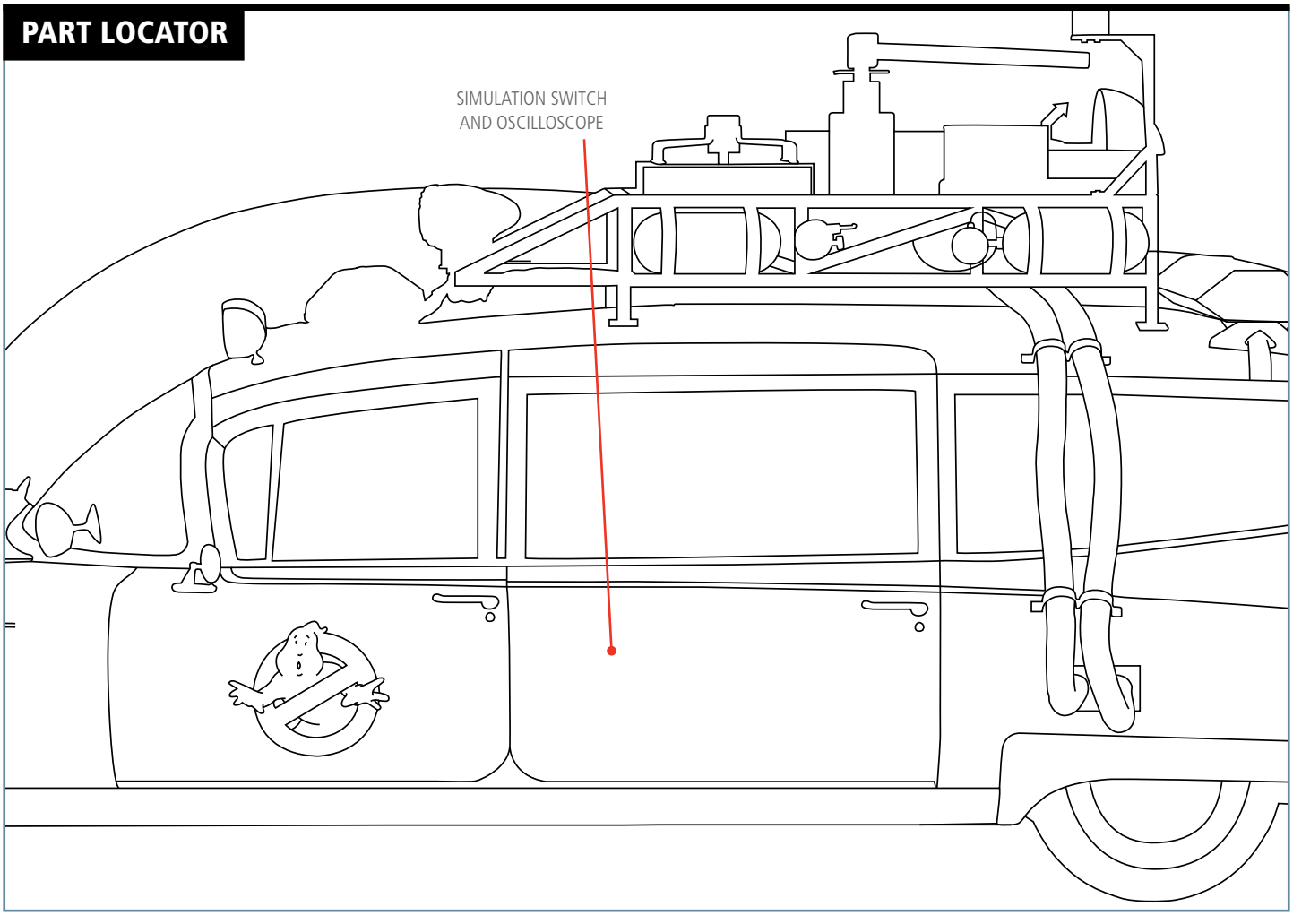
This is what the assembled piece should look like.



STAGE 53
SIMULATION SWITCH CONTROL PANEL AND OSCILLOSCOPE

In this stage, you assemble the Analog/Digital simulation switch and Tektronix type RM561 oscilloscope.

PART LOCATOR



TIP: HANDLE CAREFULLY
Unpack all the parts carefully. To avoid losing any of the smaller pieces, work on a tray or keep the parts in a bowl until they are assembled.

KEY: The illustrations are color-coded to help you identify which parts are being assembled.

RED Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY–BLUE** Indicates the previous assembly on to which the new part is fitted.

01 **ASSEMBLING THE CONTROL BOX:** Place the Analog/Digital simulation control panel base (53B) on the underside of the control panel (53A), securing the two parts together using two EP screws (figure A).

Fit the two control panel short supports (53J) to the control panel using two KP screws as shown in figure B. Then, fit the two long supports (53K) to the two remaining screw holes on the underside of the control panel using two KP screws (figure C).

FIGURE A

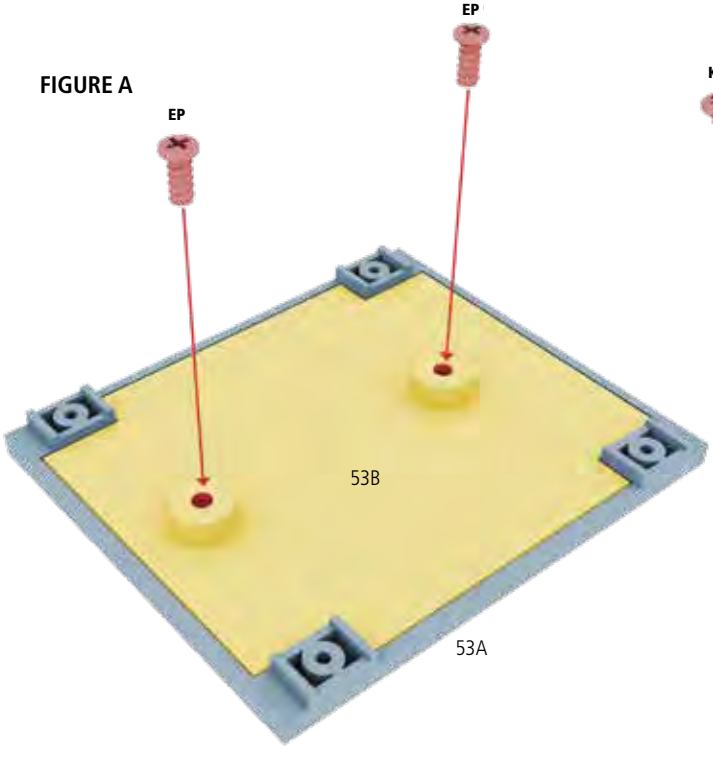


FIGURE B

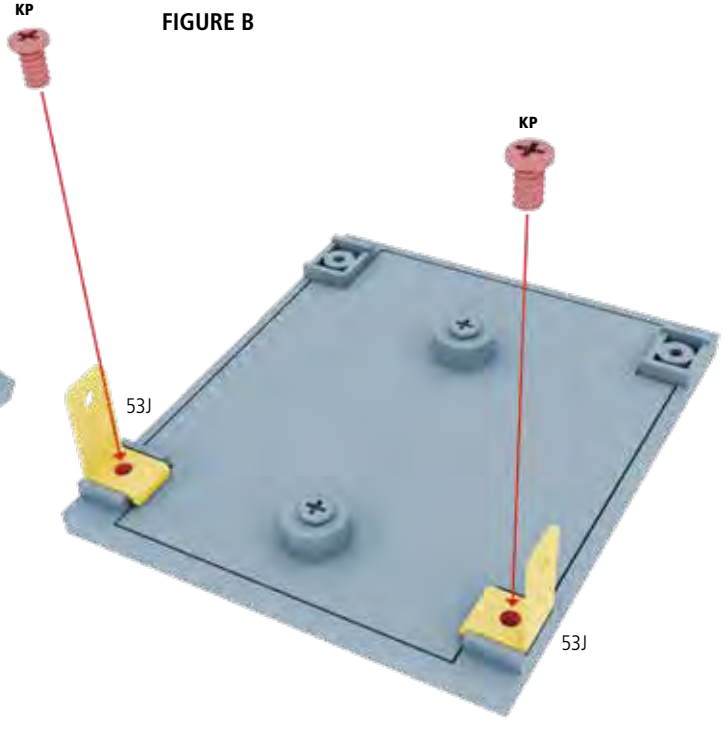
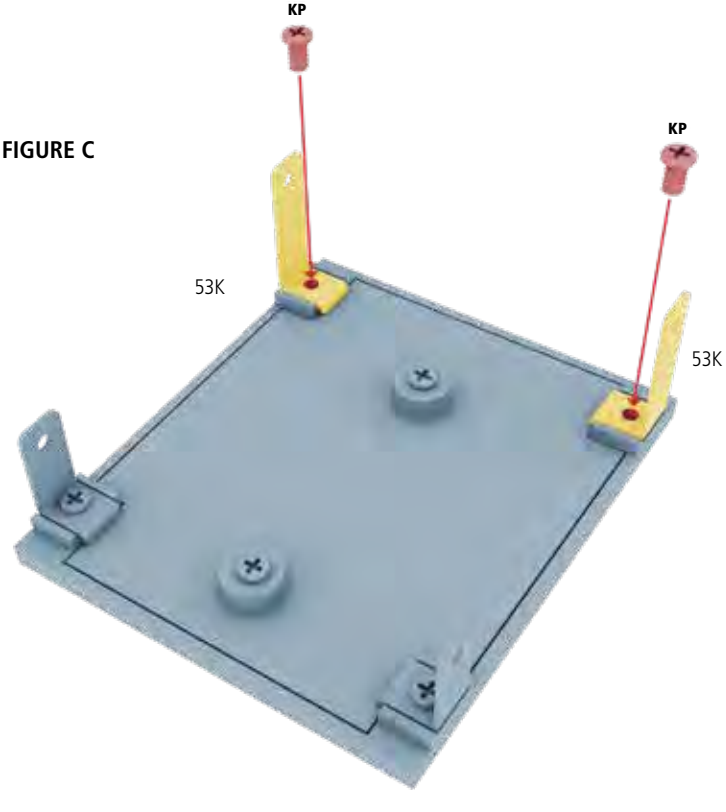


FIGURE C



02 **BUILDING THE OSCILLOSCOPE:** Begin by securing the two Tektronix type RM561A oscilloscope command panels (53H) to the oscilloscope body (53C) using four GP screws (figure A). Next, push the monitor (53I) into place between the command panels, securing from behind with two EP screws (figure B). The two peaks on the oscilloscope should be pointing upwards. Then, take each of the handles (53G) and push them into the pinholes next to the command panels you fitted in this stage (figure C).

Slot the left side (53D) into the side of the oscilloscope body (53C) (figure D). Note which way up the part goes – make sure the corners match the diagram. Repeat this on the other side with the oscilloscope right side part (53E) (figure E). Finally, fit the base (53F) to the body using four IP screws (figure F).

FIGURE A

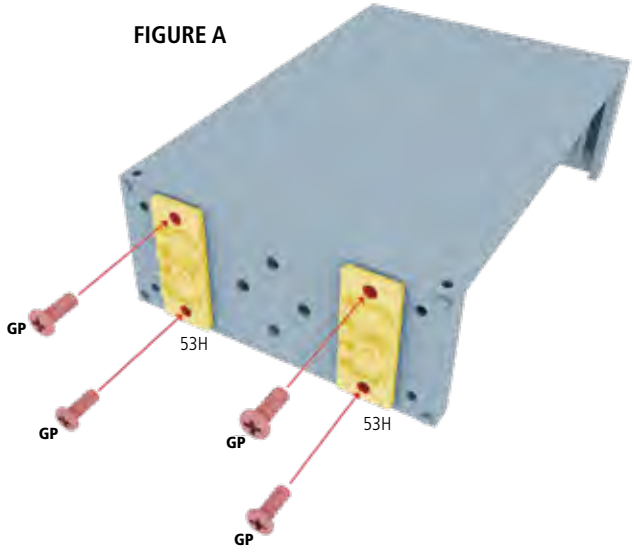


FIGURE B

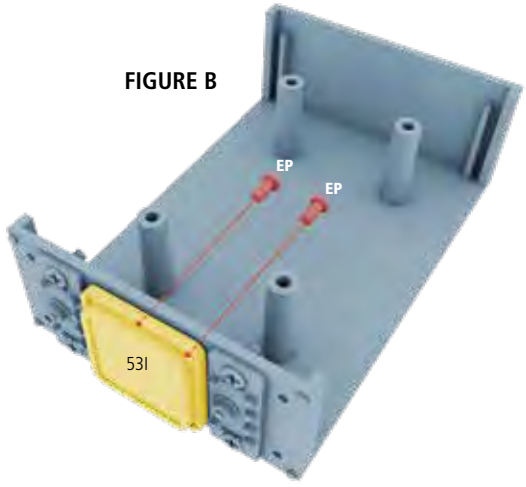


FIGURE C

FIGURE D

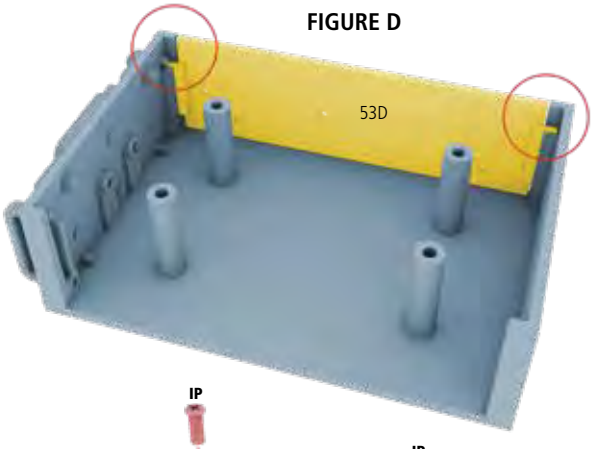


FIGURE E

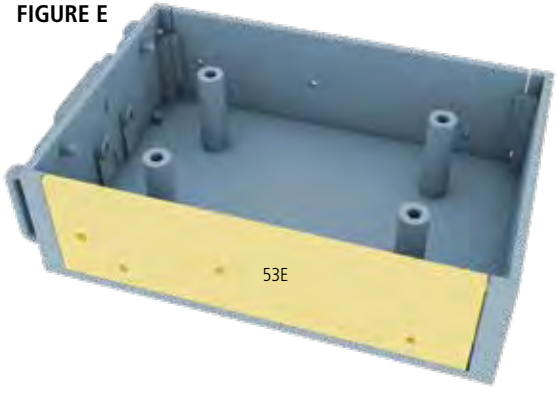
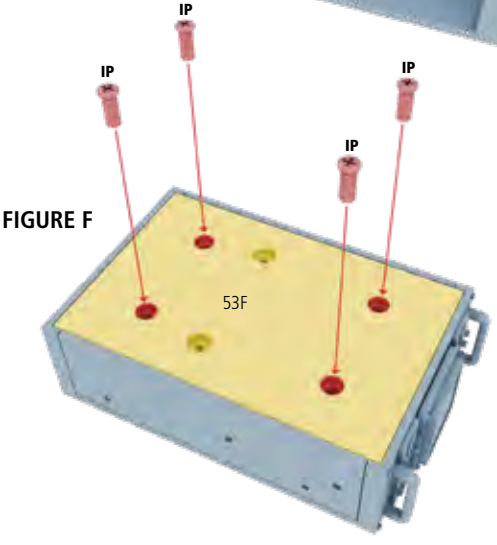
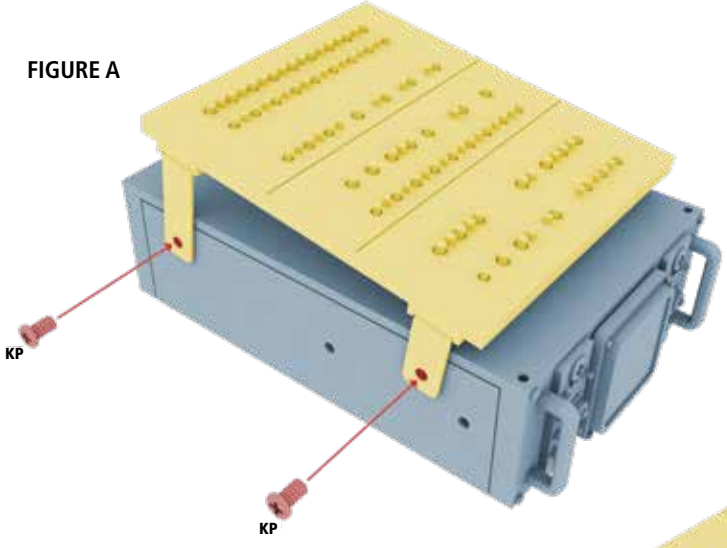


FIGURE F



03 **FITTING THE CONTROL BOX TO THE OSCILLOSCOPE:** Take the control panel you assembled in stage 1 and attach it to the oscilloscope by driving four KP screws through the supports (figure A and B).

FIGURE A



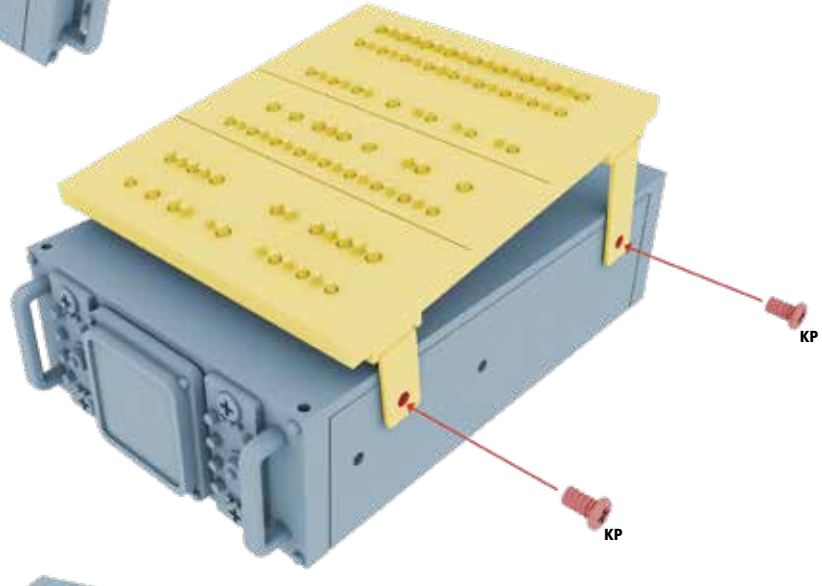


FIGURE B

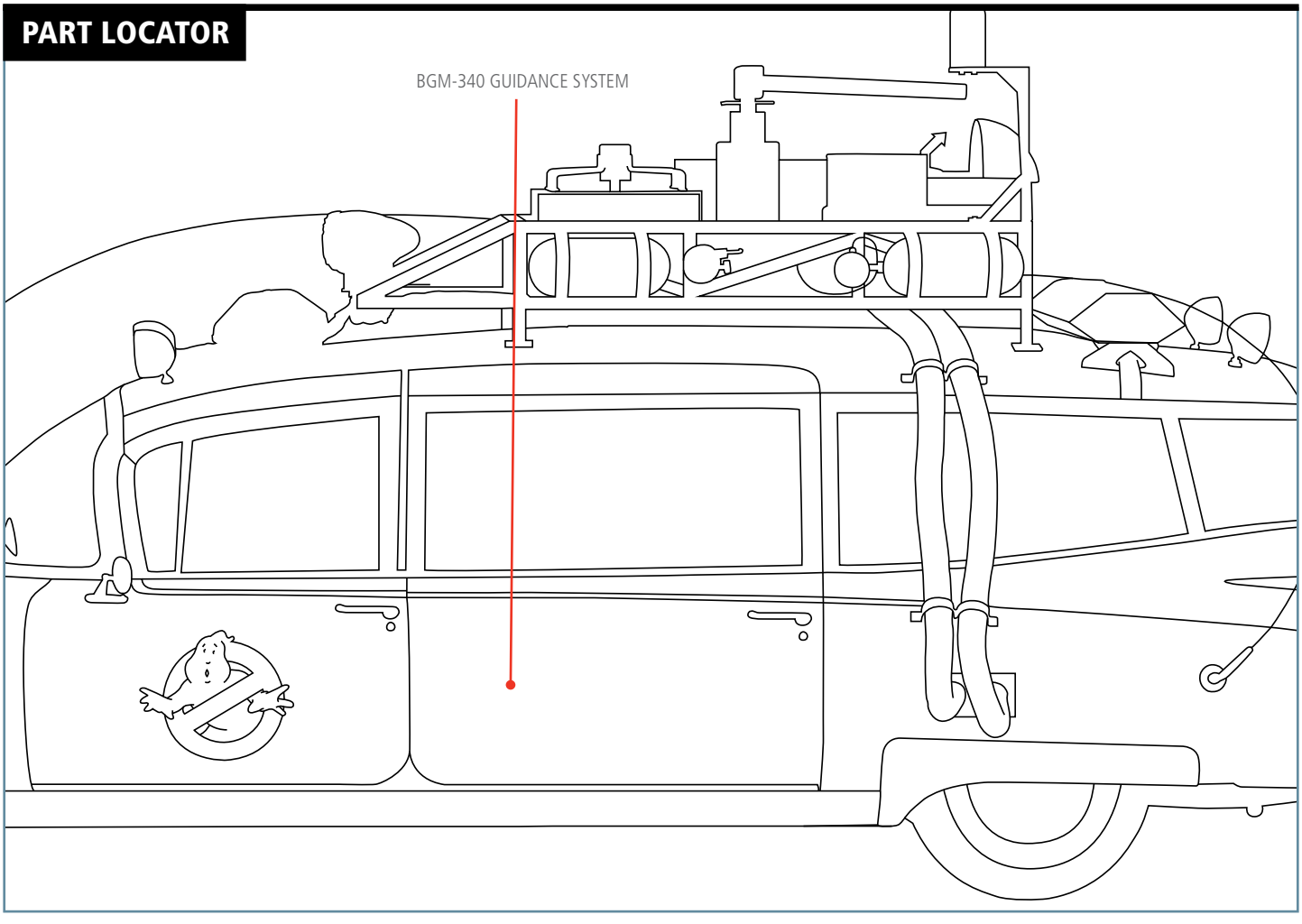
STAGE 53 BUILD

This is what the assembled piece should look like.

STAGE 54
BGM-340 GUIDANCE SYSTEM

In this stage, you assemble the BGM-340 guidance system and fit it to the control panel and cargo area floor.

PART LOCATOR



TIP: HANDLE CAREFULLY

Screws with codes ending in the letter M (such as BM and CM) drive into metal. Those ending in the letter P (such as BP and CP) drive into plastic.

Self-tapping screws for metal cut their own thread in the pre-drilled socket. To prevent the screw from jamming before it is fully tightened, drive the screw only halfway in at first. Then unscrew it to release the shavings (swarf) created as the screw cuts its thread. Finally, drive the screw fully into the socket.

Do not over-tighten screws into plastic. For screws into metal, ensure that they are tightened securely so that the head makes firm contact with the fixing surface.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY–BLUE** Indicates the previous assembly on to which the new part is fitted.

01 **BUILDING THE GUIDANCE SYSTEM:** Take the two BGM-340 guidance system side panels (54C) and slot them into the sides of the guidance system (54B) (figure A). Then, place the guidance system top (54A) on top of these parts, securing with four AP screws (figure B).

FIGURE A

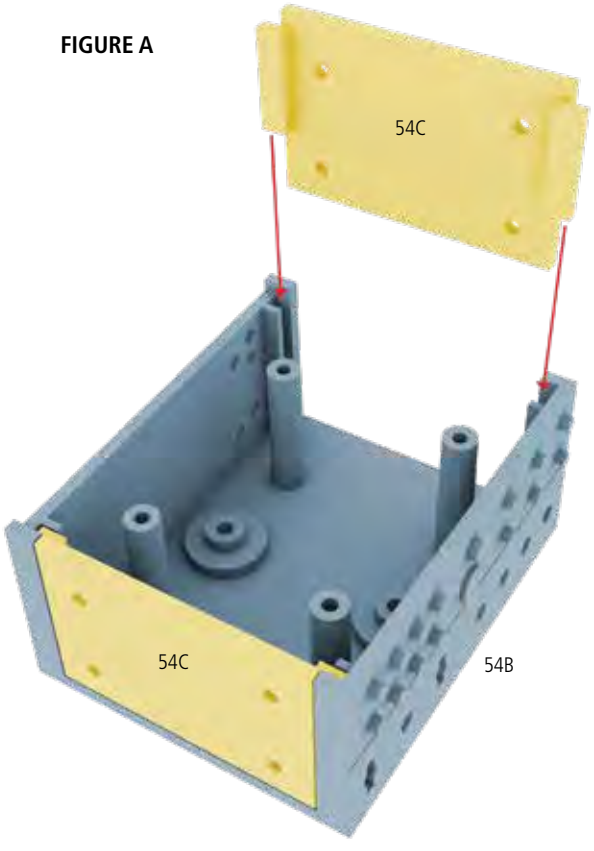
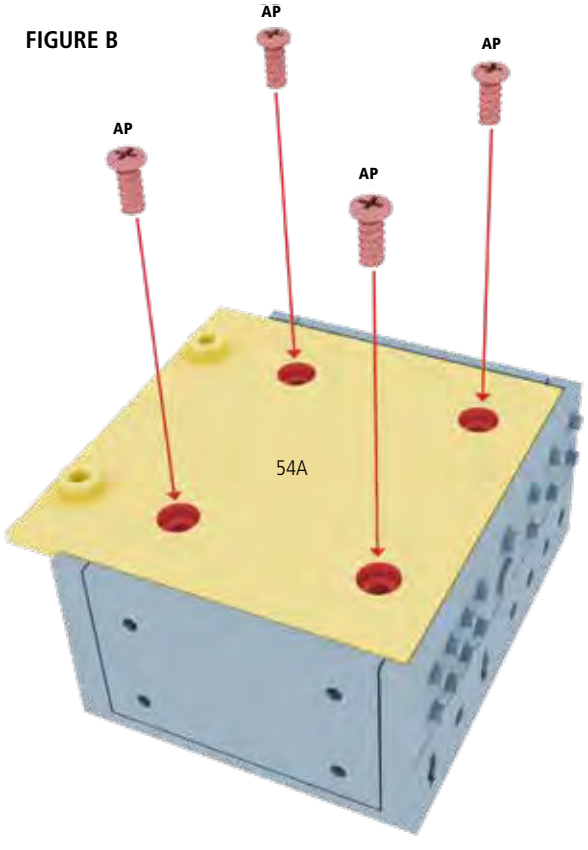


FIGURE B



02 **FITTING THE KNOBS:** Begin by carefully removing the "A" knobs (54E) from their sprues. These are the longer of the two types. Push these into the front of the guidance system (54B) as shown (figure A). Then, remove the "B" knobs (54F) from their sprues and fit them into the two remaining holes in the front of the guidance system (figure B).

FIGURE A

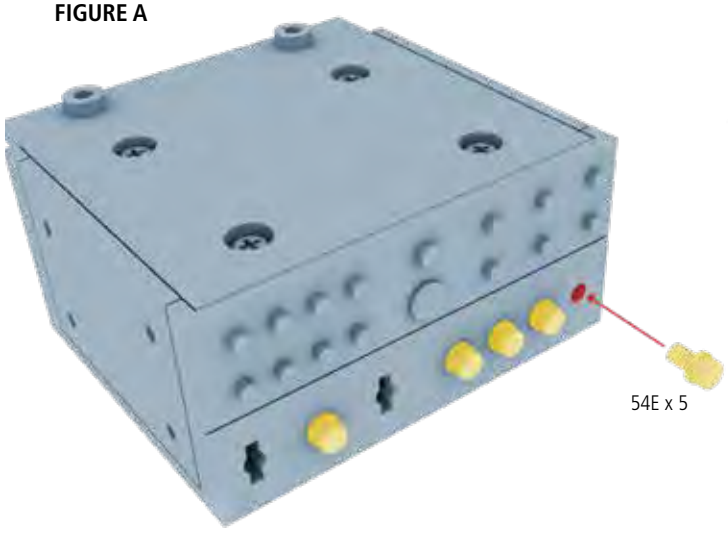
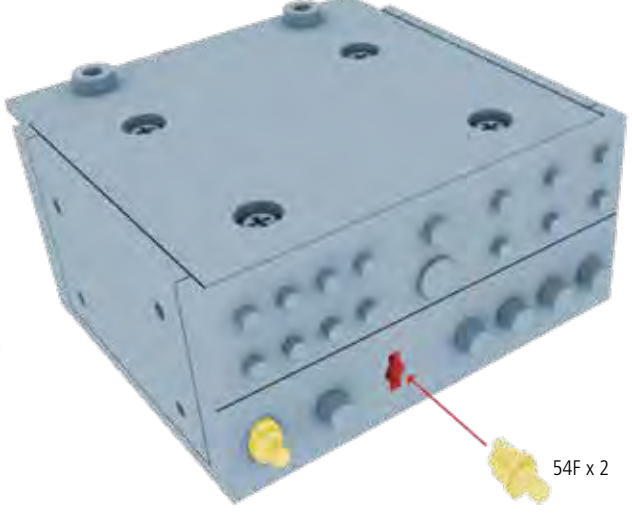


FIGURE B



03 **FITTING THE GUIDANCE SYSTEM TO THE CONTROL PANEL:** Take the assembled BGM-340 guidance system and secure it to the oscilloscope base (53F) with two AP screws (figure A). Place these assembled parts on the guidance system base (54D) and fix them together with two IP screws (figure B).

Next, attach the first two oscilloscope support struts (54G) to the oscilloscope and guidance system base using eight KP screws (figure C). Finally, turn the assembly around and affix the two remaining support struts with eight more KP screws (figure D).

FIGURE A

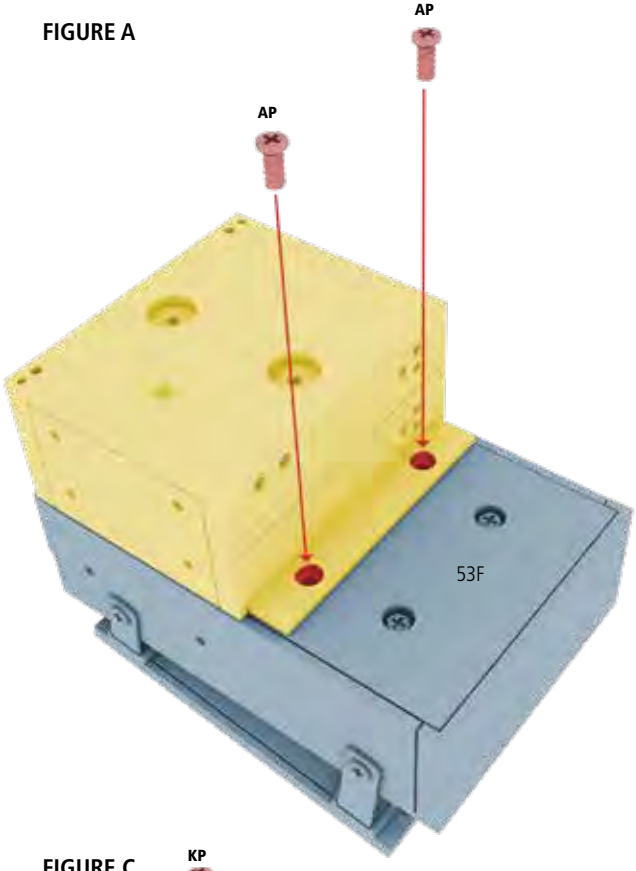


FIGURE B

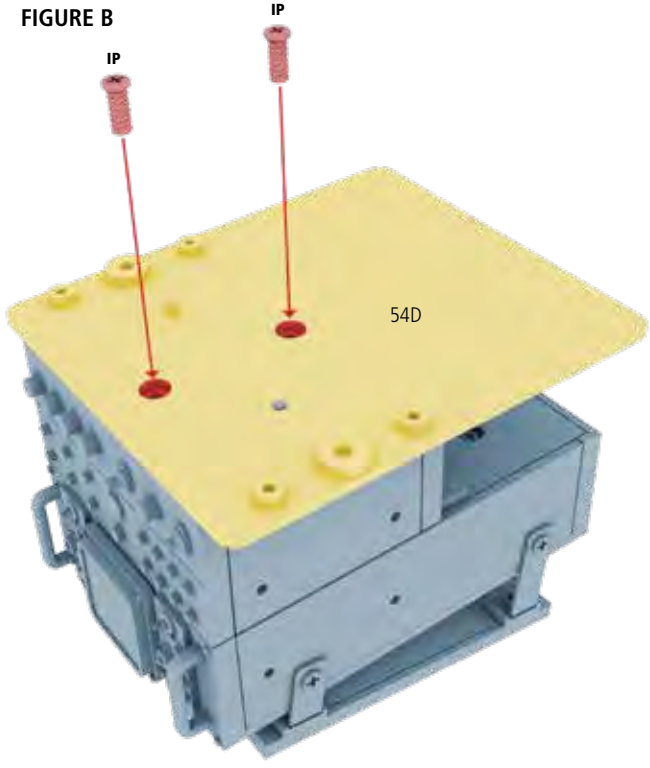


FIGURE C

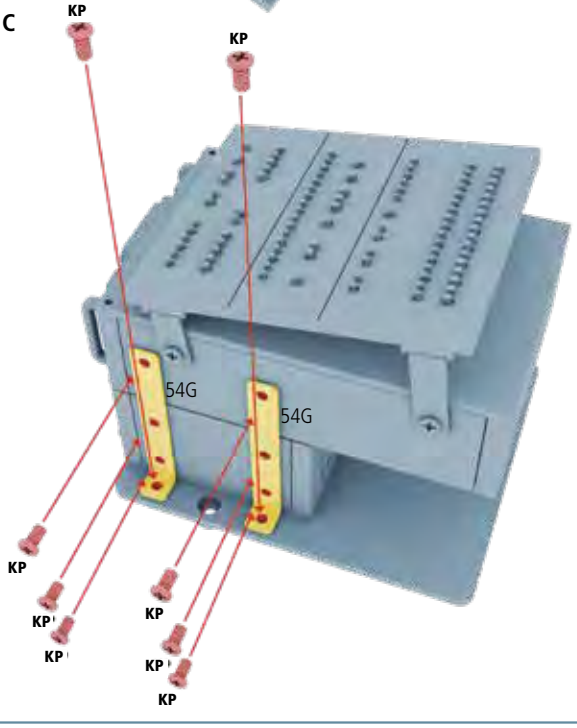
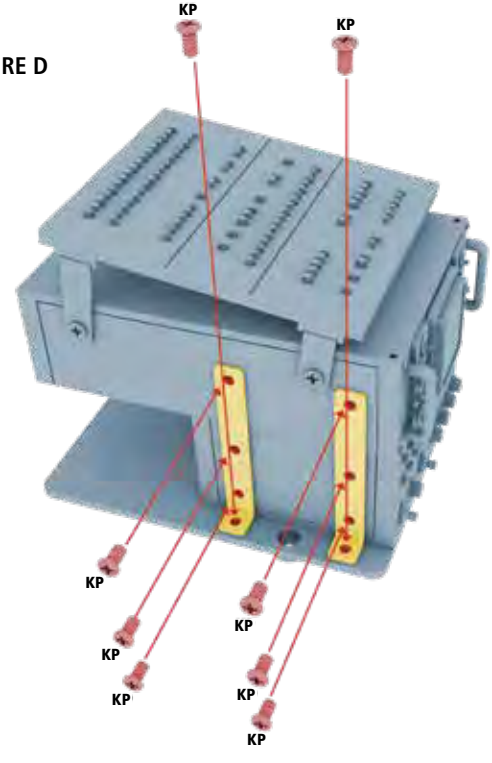
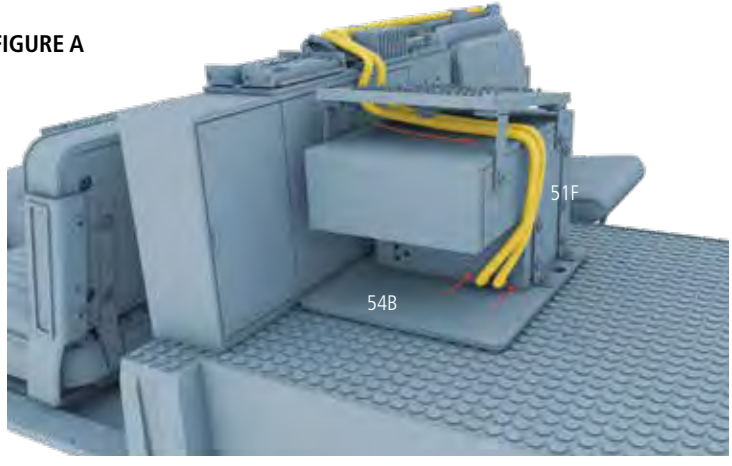


FIGURE D



04 **FITTING THE PARTS TO THE CARGO AREA FLOOR:** Locate the cargo area floor assembly you were working on before. With care, push the free ends of the flex tube 3 parts (51F) into the two holes in the BGM-340 guidance system (54B) as shown in figure A. Place the guidance system on the cargo area floor and secure with two IP screws (figure B).

FIGURE A



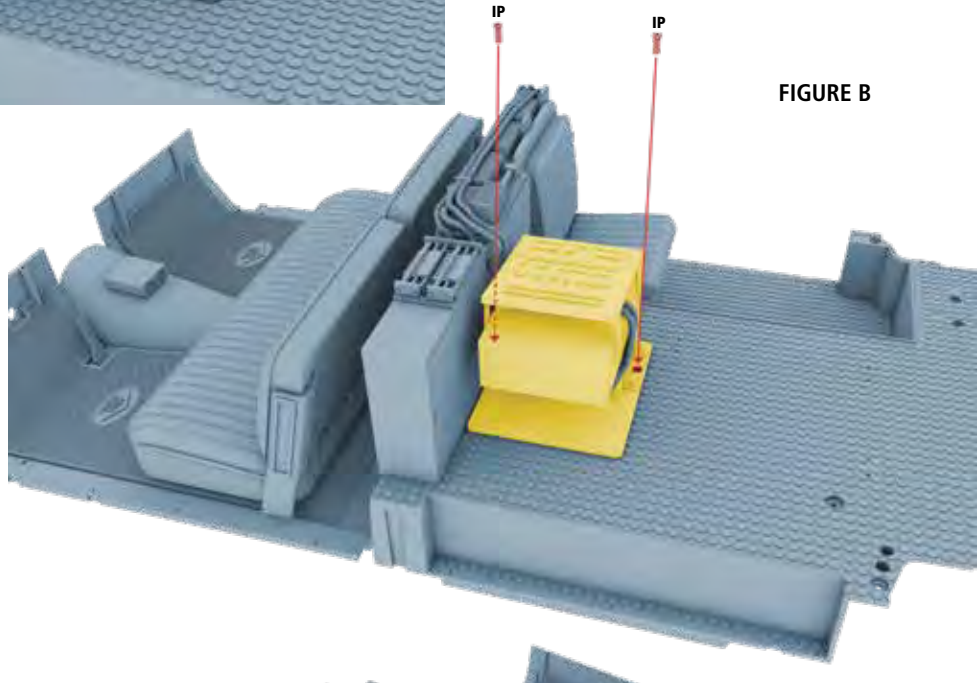
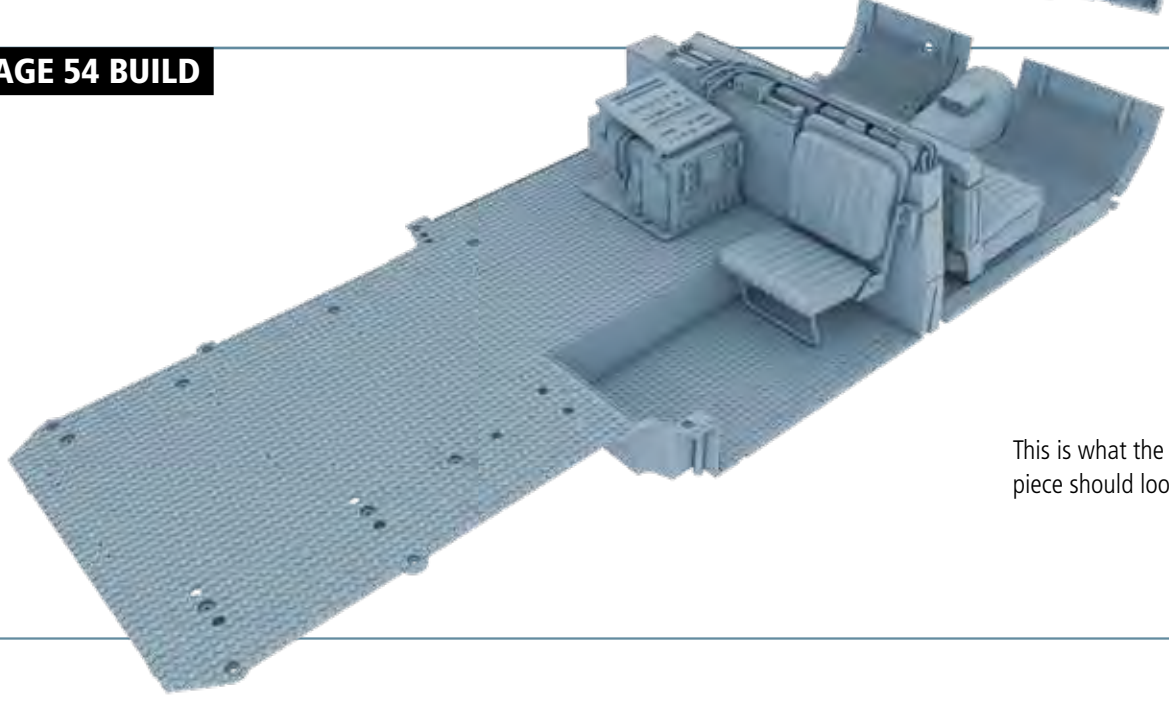


FIGURE B

STAGE 54 BUILD



This is what the assembled piece should look like.

LEFT Model maker Nick Seldon at work on the Temple of Gozer miniature in the model shop.

SMALL WORLD

Model shop supervisor Mark Stetson and model makers Adam Gelbart and Leslie Ekker reveal how they recreated Central Park West and the intricate Temple of Gozer in miniature.

***GHOSTBUSTERS* IS A MOVIE OF GIANTS, BOTH** on screen in the form of the lumbering, car-squashing Stay Puft and behind the scenes, with the full-size Temple of Gozer standing as one of the largest indoor sets ever built. But miniatures were key to the success of both sequences – thanks largely to the work of the model shop at Boss Film Studios.

Supervised by *Blade Runner*'s chief model maker Mark Stetson, the model shop was responsible for creating the scale replica of the Shandor Building that the flaming Stay Puft climbs up; it was this model that exploded so spectacularly in the film's climax. In addition, the model shop recreated a large chunk of Central Park West for the Marshmallow Man to stomp on. Working over eight months, Stetson's team of carpenters, sculptors, mold-makers, and artists had to construct miniatures that would blend seamlessly into the live action footage.

ABOVE Scale model cars are arranged on the replica Central Park West set, while Mark Stetson helps Kento Gabe prepare the Gozer Temple for detonation.

When it came to constructing a miniature of the upper floors of the Shandor Building – including the ornate Temple of Gozer that adorns its rooftop – the model shop was given a head-start by production designer John DeCuir, who supplied them with construction drawings. "That was the first time I remember a production department ever doing that, and it was great that we could build from them," says Stetson.

These drawings were passed on to the talented carpenter Milius Romyn, the main fabricator of the miniature. Model maker Adam Gelbart – whose work on *Ghostbusters* marked the start of a long career in the industry – has fond memories of Romyn. "He was a Scandinavian cabinet maker, and you could have eaten off the things he made for the film. It was so beautiful. It was a shame we had to clad them [the wooden parts] and mess them up, as we needed to make them look like they'd been around forever."

The replica was built at 1/18th scale of the actual set, but was still an imposing construction at 20 feet high on top of an eight-foot riser. It also required incredibly decorative detailing, and Stetson points to the importance of Tom Silveroli, who sculpted the crucial door panels. Stetson's *Blade Runner* colleague Leslie Ekker (who would later be nominated for an Oscar for his model work on *Apollo 13*) was another artist who worked on the building. "It was a large model, especially towards the bottom, and we needed to sculpt many ornate, vintage architectural details like cornices and caryatids," he recalls.

While the model needed to look ornate, it also needed to be hardy enough to withstand being moved around on stage. "We made things like windows and fire escapes out of acid-etched brass," explains Stetson. "Brass is good as it's pretty durable and malleable – you can bend it into kits. That technology was later replaced by laser-cut materials."

PRIMED TO EXPLODE

After pyrotechnics supervisor Thaine Morris briefed Stetson on the cruciform-shaped explosion he wanted to achieve, Stetson oversaw the construction of a metal framework and blast plate inside the model. Once the model was primed with explosives, it detonated in four directions, exactly as Morris had specified.

One of Gelbart's roles on the movie was casting molds for chief mold-maker Daveed Shwartz. "We needed hundreds and hundreds of parts for Gozer's Temple as it was blown up repeatedly," he says. "You'd have 50 new parts [after each explosion], so we'd have hundreds of bricks, finials, and other details to mold. They only wanted certain key areas blown off – it wasn't about the [whole] building blowing up, it was about how beautiful the explosions were. There had to be something left, but what was left was pretty charred. So you'd have to go in and tear off the burnt bits and glue new bits on. But you had to wear gloves as the building was covered in naphthalene – mothballs. That stuff's gross!"

The model was blown up in a parking lot at Boss Film over two nights, according to Gelbart. "We'd do it three

ABOVE Model maker Adam Gelbart adds details to the highly ornate replica of the Shandor Building, while Nick Seldon works on other segments of the construction.

times each night to get different angles and try different techniques. They were big explosions – though it looks much bigger on screen. It was controlled mayhem!"

WALKING SMALL

The other key sequence that the Model Shop worked on was Stay Puft's destructive stomp through the streets of New York City. Stetson and his team again worked to a 1/18th scale, based on specifitions from Ivan Reitman that Stay Puft was 112½ feet tall.

"We had to bear in mind certain constraints as it wasn't shot on a large stage," says Stetson. "To fit it in, we created a forced perspective for the background." Ekker elaborates on how this forced perspective worked: "In the foreground, the perspective was normal; the street was parallel and flat. But we shot on a platform that ramped upwards and tapered in width. We reduced the scale of the models towards the background, so the furthest objects were in a smaller scale than the foreground objects. From the perspective of the camera, it looked like a normal street. The perspectives aligned and everything fell into place, but it looked many times longer than it really was."

Because of the forced perspective, the larger models at the front were much more detailed than those at the back. "We found a model car that was an appropriate scale for the Marshmallow Man [in the foreground]," remembers Stetson. "We went to all the Toys R Us stores in Southern California and cleared out all their stock! We turned them into fire chief cars, taxis, police cars, and normal cars. We also scratch-built some cars, such as the fire engine. For the background cars, we used smaller 24th scale cars – they're a lot more common and easier to find. As we were shooting, we would roll them down the tilt-plane of the background of the street. We also wire-pulled some of the cars in the foreground."

"We would repaint the cars and add details like a flat tire, a broken windshield and bumper stickers, adds Ekker. "We'd gunge up the paint a bit to make them look more real and lived in."

When it came to creating the multitude of cars for the background, it was all hands on deck, according to Gelbart. "The best two were made by the guy who was answering the phones at the front desk. He made a police car with a crime scene inside it, which you'd never get to see on screen. He also made a pick-up truck that looked like it came from *Invasion of the Body Snatchers*. It was peeled away and had what looked like corn husks in there. It was brilliant! But he could afford to take the time to do that in between answering phones. We had to just crank out cars for the background and couldn't take the time to for that."

The trees in Central Park also required producing on mass. "That was not trivial to do in miniature," says Stetson. "We came up with the concept of finding twigs of local trees that would represent the trunks and branches, and then using material like hemp to create their bodies. For branch-like foliage, Daveed Shwartz came up with the idea of using a household blender to grind up foam, dying it green and then spray-gluing it to the body of the model trees."

The buildings surrounding Central Park and Times Square in the sequence were, according to Stetson, a mixture of plates that matte department supervisor Neil Krepala had shot in New York City and approximations

ABOVE A costumed Bill Bryan, fabricator Diana Hamann, VFX art director John Bruno, and DoP Bill Neill get ready to film on the tilt platform.

of real buildings. "We recycled some of the model buildings from *Blade Runner* for that moment when Stay Puft is revealed behind that skyline, though we had to make them appear more conventional first," he adds. "We also added in some water towers for the tops of buildings for that first reveal shot."

Another trick that Stetson's crew concocted was the jet of water created as Stay Puft kicks a fire hydrant, which Pete Gerard created using air-blasted silica sand. It is attention to detail like this that is so vital in model building, Stetson emphasizes. "I hate to hear a director or producer say, 'Oh, they'll never notice.' Audiences have become much more critical than they were in 1983, especially if you don't have a script as strong as *Ghostbusters* did."

Expanding on this, Ekker recalls the approach of *Blade Runner*'s effects supervisor Doug Trumbull. "Doug had a theory he called 'subliminal detail.' Some of the details we're talking about would not register on film, but Doug always felt that the eye would feel those details if they were there. He has a point: [the details] change a particular piece of film grain – the way something is hit by light in a different way. So on *Ghostbusters* we went all-out, the whole hog, on the models we built. You really have to focus on the tiny details."

TREE SURGERY

Constructing trees for the Central Park set turned into something of a competition for the model team, according to Adam Gelbart. "We had a bet: who could make a tree the fastest. I painted my tennis shoe green, and it went into the back of the set! It was out of focus; it just had to be something green. So we took some liberties. But Mark kept a careful eye to make sure nothing too outrageous got through. It wouldn't have looked bad on camera, but if anyone important came by they might have asked, 'What's that doing there? We're paying for this?!'

BELOW Patrick McClung operates an R/C transmitter while Pete Gerard prepares to operate the fire hydrant gag.

THEATER GHOST

Concept artist Henry Mayo and monster maker Rick Lazzarini remember the winged beast that terrorized a screening of *Cannibal Girls* in *Ghostbusters II*.

A SEQUENCE WITH A GHOST FREAKING OUT cinema-goers was originally due to appear in the first *Ghostbusters*, but was cut for being too expensive and time-consuming. In the original script the screening was described simply as "an all-night horror marathon," but by the sequel it had become *Cannibal Girls*, Ivan Reitman's sophomore movie.

Ghostbusters II's theater ghost was largely based on one of Henry Mayo's concept designs. "I think [producer] Michael Gross mentioned the movie *Night of the Demon* and said he wanted something scary like that," Mayo says. "They'd already come up with other ghosts that were human, so they wanted a non-human

CLOCKWISE FROM LEFT Henry Mayo's original concept art; John Blake, sculptor of the ghost's head; Rick Lazzarini and his monster puppet. Lazzarini used a custom 'waldo' to manipulate the theater ghost's expressions.

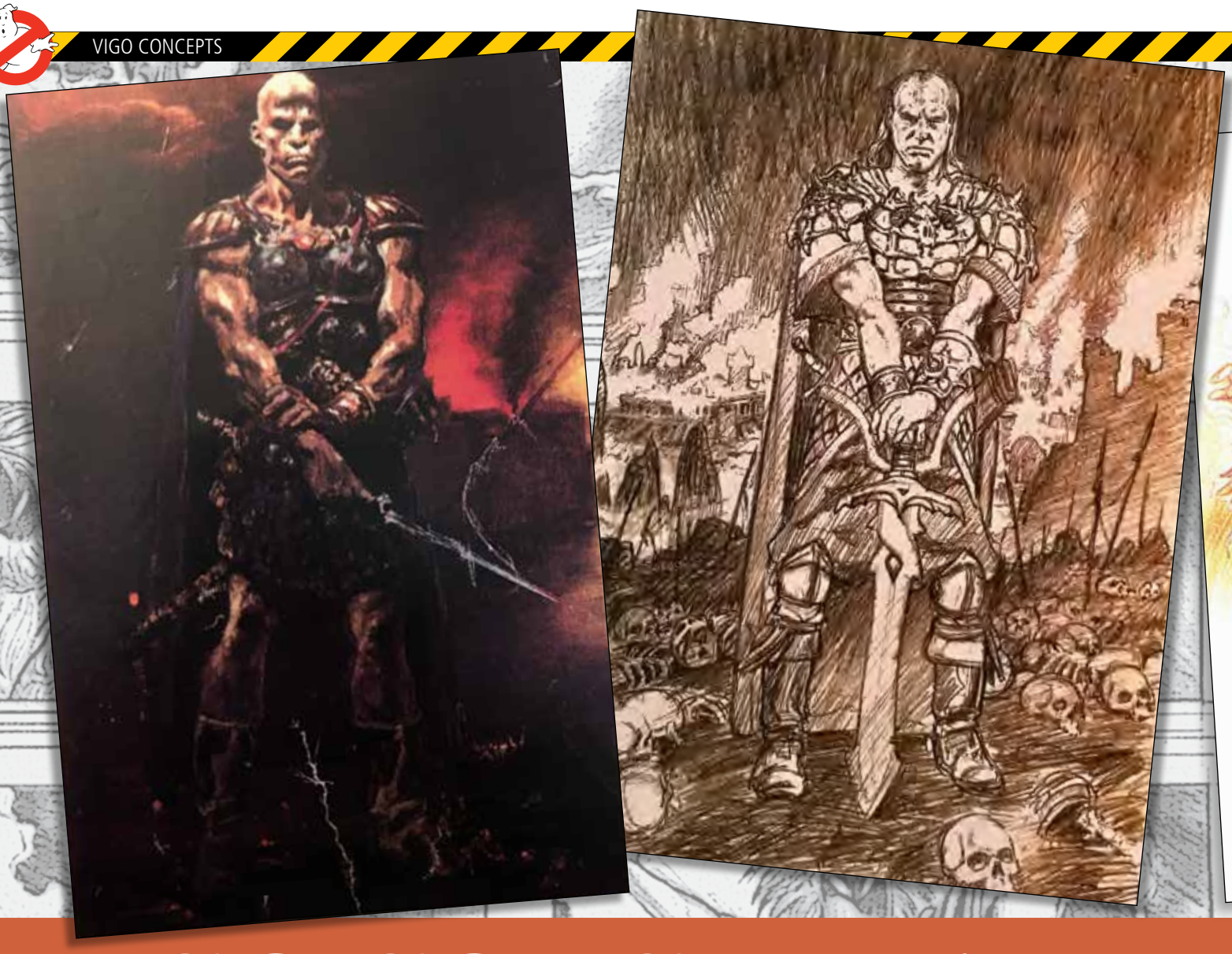
ghost for this sequence. Michael wanted something really out-there. I did a ton of drawings and they'd feed them to Aykroyd and Ramis, who would laugh and come up with more crazy ideas. I probably did 30 or 40 ideas. They settled on one design, which was handed to Rick Lazzarini. They told him to go crazy."

WALDO SYSTEM

The ghost – a winged creature with four arms, fangs and six eyes – was added to the film late in the process, and Lazzarini had just three weeks to create the sculpt, mold, and rubber skin for the puppet. "The skins had internal armatures for the arms and they were rod-operated," he says. "The wings were also rod-operated."

Lazzarini incorporated a custom animatronic 'facial waldo' system into the lightweight foam head, allowing it to rotate, move up and down, and move its jaws. The waldo could also manipulate all six eyebrows into a sinister 'V' shape. "Rather than having a joystick to make those things move, I wore a cap and vest, so if I tilted my head it pulled a string which turned a control which in turn sent a wireless signal to tell the puppet to do the same thing," Lazzarini explains. "If I opened my jaw, the puppet opened its jaw, and so on. That way you get a very seamless connection between performance and result." The sequence was filmed at the visual effects studio Apogee as ILM was at capacity, before being composited into the live-action sequence.

"It was pretty straightforward because we had a beautiful design to go from," Lazzarini remembers. "Trying to go from design to shooting within three weeks was a challenge, but it was fun to create and operate. It's a big tickle when you know you're going to be working on something in the *Ghostbusters* franchise. You're like,'Ooh, people are going to be so jealous!' And the additional tickle is that there have been two toys made of that creature so far!"



VIGO CONCEPT ART

Before ILM decided to use a treated photograph as Vigo's portrait, several top concept artists created some stunning illustrations. Three artists share their artwork and memories.

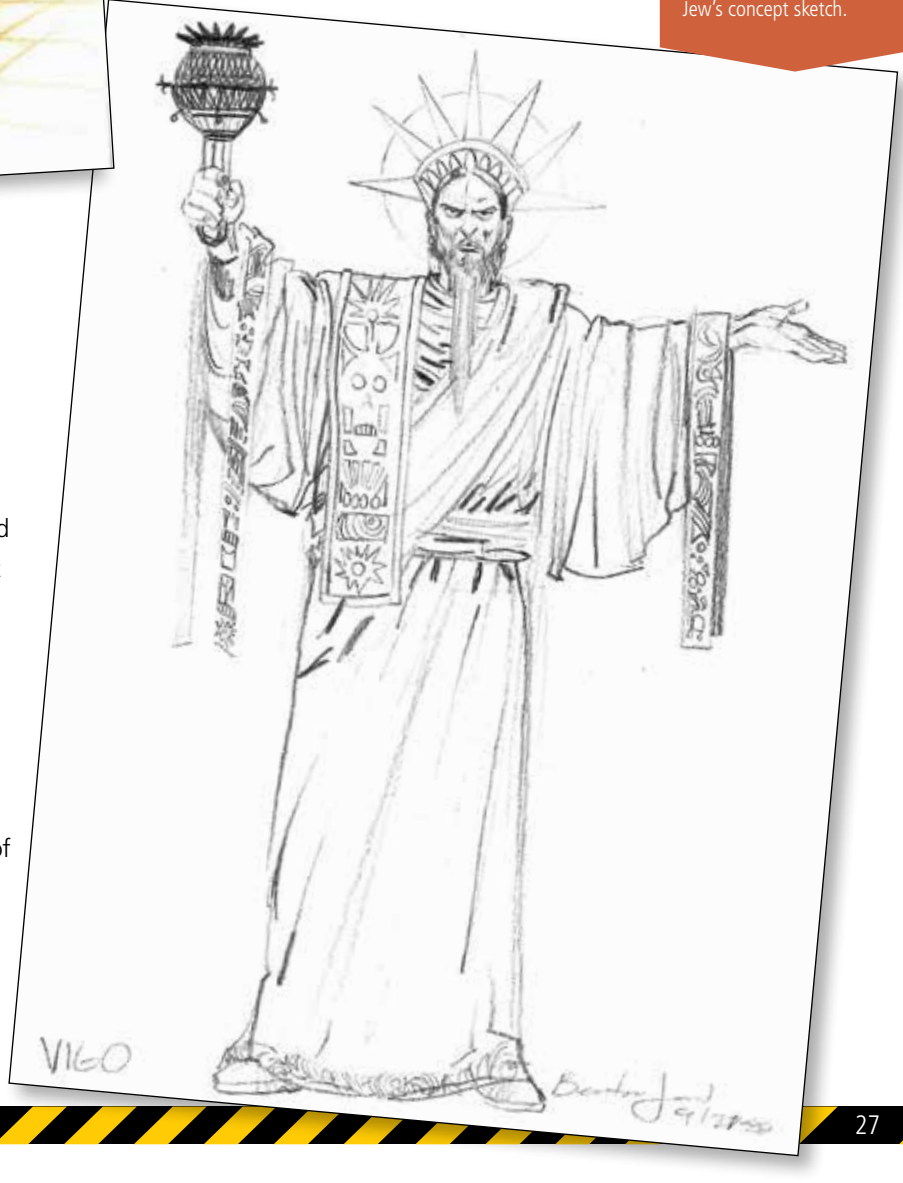
▲ **SEAN JOYCE:** "ILM called me up and said, 'There's this thing we want you to help us out with.' I had created matte paintings at ILM but I'm also a classical painter, sculptor and fantasy artist. I was [initially] thinking of something like Frazetta's *Conan*, but ILM said, 'We're looking for something sort of like Velázquez, something sort of Rembrandt-ish.' Figurative artists from the Renaissance. I did three or four little color illustrations, then I went down to the studio and the actor [Wilhelm von Homburg] posed for me so I could get his likeness. Then I did my drawing of the Vigo painting, which was also a costume design."

OPPOSITE PAGE Sean Joyce's design and costume illustrations for Vigo.

LEFT Two of Henry Mayo's designs for Vigo. The larger image shows Vigo throwing aside 'Justin' (Janosz in the final movie).

▼ BENTON JEW: "This picture is of Vigo as the Statue of Liberty from very early during the bidding phase.The full script may not have been finalized at that point. I don't think people realize how fluid some shows can be script-wise, especially during the early phases. They can ask us to brainstorm and contribute our own ideas to see if something different works. I don't remember how solid this idea was, but there were hundreds of ideas and gags that were played with and discarded. There's a lot more stuff that didn't make it on screen than did. Most of the big FX films are like that. Only a tiny percentage makes it on screen."

BELOW In an early draft of the *Ghostbusters II* script, Vigo takes over the Statue of Liberty, as seen in Benton Jew's concept sketch.



▲ HENRY MAYO: "I did a lot of effects storyboards of Vigo, where his head comes out of the painting. They were a lot of fun. I think it was Dennis Muren who came up with the idea of having Vigo lean out of the painting because they wanted to do that effect. At one point I had Vigo turn his head inside out, and when he was blasted [by the Ghostbusters] he would transform into weird things. My storyboards were effects storyboards not conventional 'story' storyboards – I had to show them how the transformation would work. When they wanted to do the final painting, Dennis Muren came up with the idea that he wanted Vigo to look something like a Frazetta painting. I did a bunch of little sketches of the giant Vigo painting. At one point they were going to have me do the painting of Vigo at the end, but I was leaving ILM at that point. At the time I had so much to do I didn't care, but I regret that – it would have been really great to do that painting."

ABOVE Doug and Jessica Hogan, and their homemade proton pack replica.

PACK BUILDING

Compositing artist Doug Hogan reveals how he and his wife constructed two faithful-looking proton packs – and learnt many new skills along the way.

BUILDING A PROTON PACK IS ONE OF THE WAYS *Ghostbusters* fans can express their love for the franchise while unleashing their own creativity. Anyone who has been fortunate enough to wander around a *Ghostbusters* convention will have set eyes on dozens of home-made packs of varying complexities. "It's almost like a rite of passage in the *Ghostbusters* fan community," says compositor and weekend model-builder, Doug Hogan. It's a rite of passage that Hogan has completed, having spent three weeks building two impressively faithful replica packs with his wife (and fellow compositing artist) Jessica. "Some of the packs we've seen online and at conventions are just mind-blowing and super-creative! It's fun to see how *Ghostbusters* inspires makers out there to express themselves."

ABOVE Close-ups of the neutrona wand, which was built using an electronics box and craft wood ribbing.

Hogan remembers that the idea for building their own proton packs came up while they were discussing costume ideas one Halloween. Figuring that they needed proton packs to accompany their jump suits, they began researching how to build a pack that was as screen-accurate as possible. The fact that they hadn't built props before didn't put them off. "Once we started to get the plan together, we found that it was also a project that was going to teach us some really interesting skills," Hogan says. "Soldering, circuit building, fabrication, mold making. The proton packs quickly spurred us to start going down the rabbit hole of making, and we never looked back!"

LEADERS OF THE PACK

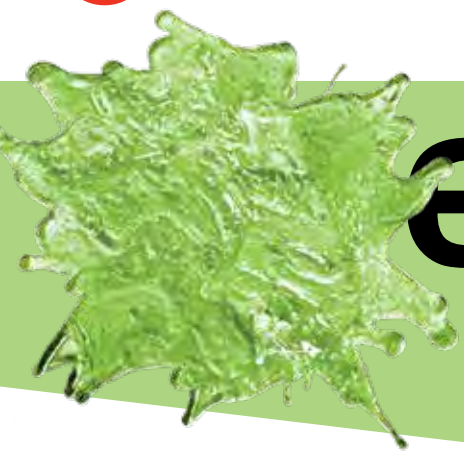
As the couple began their research for the build, they found various resources online, especially the forum at the website *GBFans.com*, where fans share blueprints and advice. They then began to search for suitable parts for the proton packs, aiming to purchase them as cheaply as possible. While some elements could be purchased from dollar stores, including food containers for the Cyclotron and colored document folders for gels in the battery pack, others required even more creative solutions. "Any pieces that we couldn't modify from something pre-made meant we had to fabricate it ourselves," says Hogan. "So we went down to the big box home store and that's where we discovered probably our favorite item for prop-making ever: pink insulation foam. It comes in these huge sheets of different densities and thicknesses and gives you just so many possibilities. Especially once we used some contact cement and laminated them together, it gave us a medium you can carve."

The biggest challenge, Hogan says, was figuring out how to incorporate the lighting and circuits. "Thankfully there are a lot of electronic stores online that have all the pieces you need and even some tutorials for the absolute beginners."

Hogan says that the total cost of the build was $100, including a few parts that they ended up having to rebuild. So how screen-accurate would he say his version is? "Our packs are probably 80% accurate after all is said and done. But given all that we learned making them, we could get that up to 99% now – though they would be much heavier. Ours were lightweight rubber, but the original stunt packs were foam rubber and the hero packs were molded fiberglass. We don't even want to imagine how heavy wearing one of those all Halloween night would be!"

Since building their proton packs, Doug and Jessica Hogan have continued constructing both physical and 3D *Ghostbusters* models, including sculpts of the Scoleri brothers' heads and Ecto-1 hood ornaments, which they display on the Instagram page *Prototypes and Pixie Dust*. And where are their proton packs now? "They rest proudly on the wall of our two kids' playroom," says Hogan. "They're a little dusty, but the energy cells have a half-life of 5,000 years, so they still work great."

BELOW Much of the proton packs was built from insulation foam, with additional parts added using Gorilla Glue.



ECTO-101

A MONTHLY LIST OF ALL THE THINGS THAT MAKE GHOSTBUSTERS GREAT.

#15 NEW YORK PUBLIC LIBRARY

The New York Public Library plays a pivotal role in *Ghostbusters*. It appears in the very first shot of the film and is the setting for the pre-credits sequence featuring the understandably freaked-out librarian (Alice Drummond) and the subsequent scene of Ray, Peter and Egon confronting the apparition.

The public library, located on Fifth Avenue, was established in 1895 and is the third largest in the world. The building was constructed in a similar Beaux-Arts style to the Hook & Ladder Company firehouse. *Ghostbusters* made full use of the building's distinctive exterior – complete with twin marble lion statues (prefiguring the later appearance of the Terror Dog statues) – and its voluminous reading room. However, the footage of both the librarian and the Ghostbusters coming face-to-face with the library ghost was actually shot across the country at Los Angeles Public Library. Ruth Oliver, who played the ghost itself, was filmed at Boss Film Studios and inserted into the footage by the optical team.

The New York Public library – which is also known as the Stephen A. Schwarzman Building and the Main Branch – has also appeared in *Ghostbusters: The Video Game* and several IDW comics. The building is today firmly on the trail for *Ghostbusters* fans wishing to visit the locations of their favorite movie.

> *[Ghost shop supervisor Stuart Ziff] asked me if [casting] a woman would make a Terror Dog more feminine. And for those of you whoever audition for something like this, the answer is always 'Yes!'. Absolutely if I'm cast as a Terror Dog I can make it look like Sigourney Weaver...*

▲ *Puppeteer Terri Hardin recalls being cast as the performer behind Zuul in an interview with* The Driven Entrepreneur *podcast.*

> *If you don't have something to say about a person, then why are you playing them? If you don't respond to it, then you're in the wrong part.*

▲ *Harris Yulin, the actor behind Judge Wexler, tells* The Irish Times *about connecting to his characters.*

> *We were creating monster suits, costumes, puppets and experimenting with stop-motion animation, doing shows at the old Alexander Brest Planetarium and things like that. Many of the people in our original group are still working in Hollywood.*

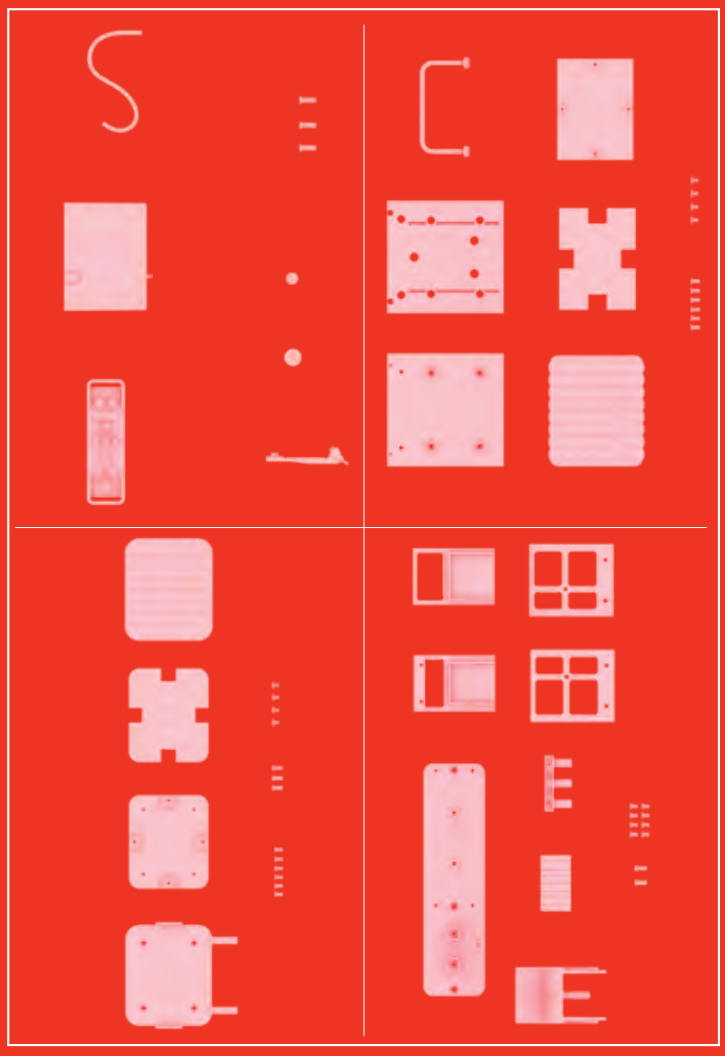
▲ *The late Tim Lawrence looks back on forming a 'rubber monster band' as a kid in a 2015 interview with the* Jacksonville Magazine.

COMING IN ISSUE 16

SIGOURNEY WEAVER
How the actress shaped Dana's character.

STRANGE NOISES
We talk to sound designer Richard Beggs.

YOUR PARTS



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