



**SOLUTION BASED PROJECTS
TURN-KEY PORTFOLIO**

IN NEED OF TURNKEY SPECIALTY GAS SYSTEMS? HARRIS DELIVERS!

SKILLFULLY DESIGNED AND BUILT FOR RELIABILITY

+ HARRIS PRODUCTS GROUP HAS 100 YEARS OF EXPERIENCE PRODUCING GAS DELIVERY SYSTEMS AND CONTROL VALVES YOU CAN DEPEND UPON

+ WE HAVE PROVEN EXPERIENCE WITH THE CRITICAL REQUIREMENTS OF HIGH-PURITY SPECIALTY GAS

+ WE ARE YOUR TRUSTED PARTNER IN CREATING TURNKEY SOLUTIONS FOR THOSE UNIQUE REQUIREMENTS

5 EASY STEPS TO A CUSTOMIZED CONFIGURATION

- 1** PROVIDE THE SPECIALTY GAS APPLICATION AND PARAMETERS TO HARRIS
- 2** HARRIS' TECHNICAL STAFF WILL DESIGN A SYSTEM TAILORED TO THE APPLICATION
- 3** WITHIN 24 HOURS, HARRIS WILL SEND A QUOTE AND A 3-D DRAWING OF THE COMPLETE SYSTEM
- 4** REVIEW THE DESIGN TO ENSURE ALL CUSTOMER EXPECTATIONS ARE MET
- 5** UPON APPROVAL, HARRIS WILL BUILD THE SYSTEM WITH HIGH-QUALITY COMPONENTS AND PARTS

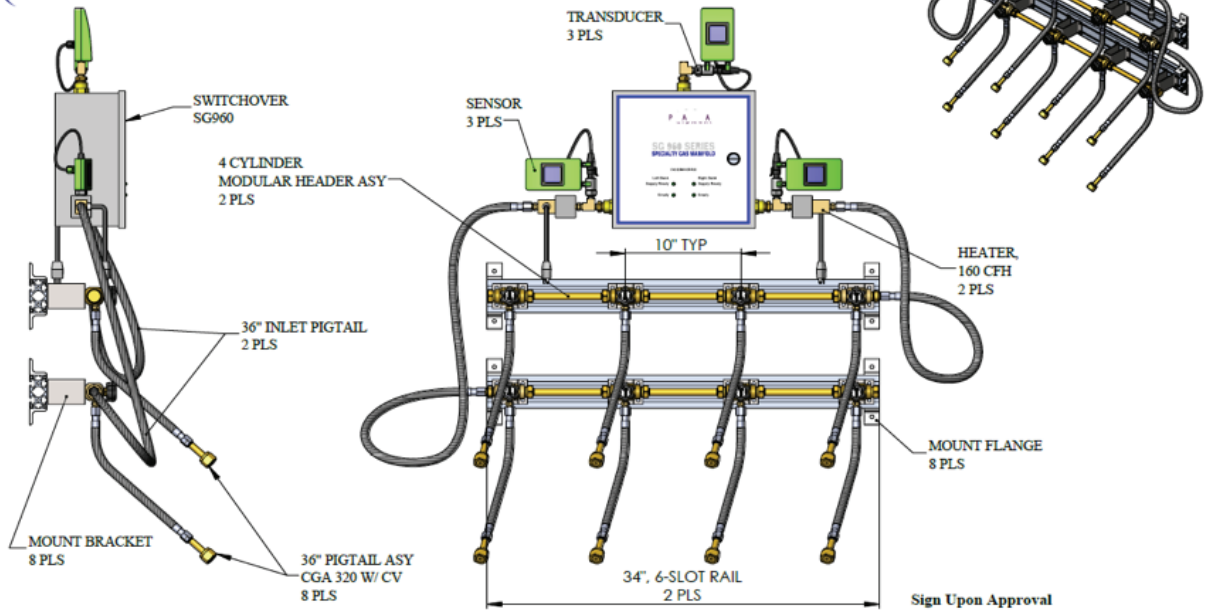


OUTLET
LINE PRESSURE
HARRIS SPECIALTY GAS
MODEL 920 AUTOMATIC
PRIORITY VALVE
LEFT BANK
RIGHT BANK

HARRIS SPECIALTY GAS
ANNUNCIATOR
SILENCE
LEFT RIGHT
GREEN = OPERATIONAL
RED = ALARM
PHONE # 800-733-4043 #2



PROJECT: MODEL SG960-4R36-4L36-320
(800) 733-4043 PROMPT 2
harrisspecgas@lincolnelectric.com
Ordering #: SPPRD11291801TT



MODEL SG960-4R36-4L36-320 WITH HEATERS, TELEMETRY

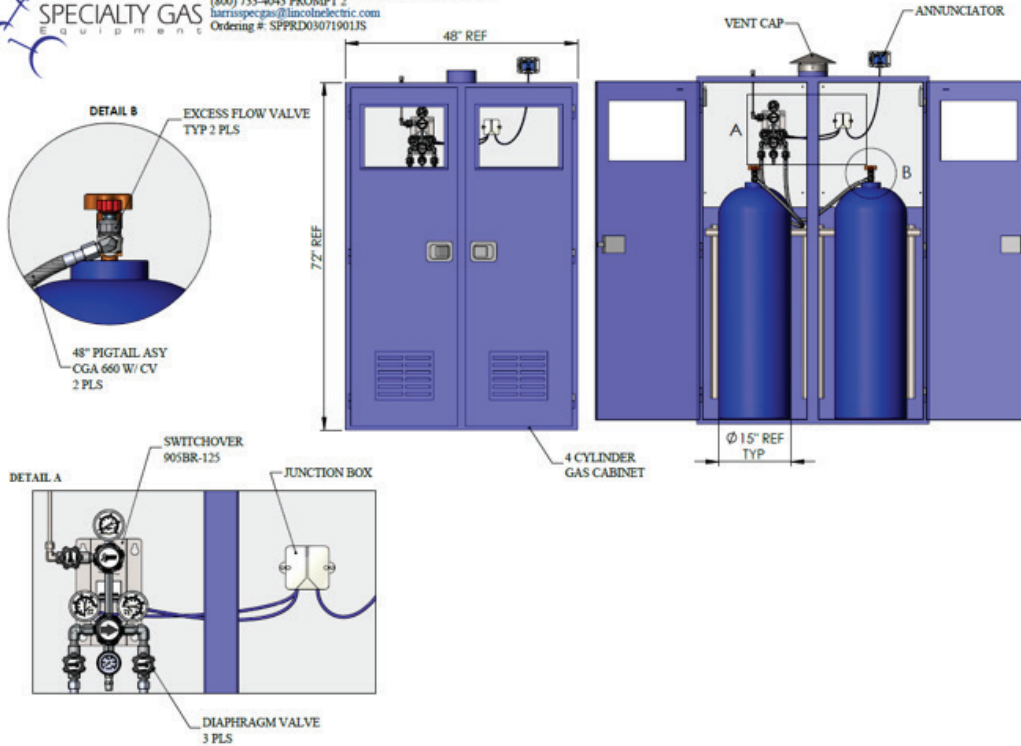
PROBLEM

CUSTOMER HAD A CRITICAL CO2 APPLICATION WITH LIMITED WALL SPACE.THEY NEED UNINTERRUPTED GAS SUPPLY WITH TELEMETRY SYSTEM FOR REMOTE WEB-BASED MONITORING. SYSTEM MUST BE DESIGNED TO PREVENT THE FORMATION OF DRY ICE TO INSURE GAS FLOW IS NOT SHUT DOWN. CUSTOMER ALSO WANTED TO INSTALL 8 CYLINDERS TO MAKE THE GAS SUPPLY LAST AT LEAST 10 DAYS.

SOLUTION

Harris designed a 8-cylinder manifold system utilizing the model 960 fully automatic changeover. We added external telemetry to monitor right side, left side and also delivery pressures. The telemetry system will send alerts to the user when conditions reach critical levels. We installed heaters on the manifold that are thermostat controlled to prevent the formation of dry ice. Because of the limited wall space, we configured the manifold with staggered headers underneath the box so that it would fit in a 3 foot space.

TIME TO COMPLETE **20 DAYS**



NITRIC OXIDE CHANGEOVER IN GAS CABINET

PROBLEM

CUSTOMER WANTS A CHANGEOVER FOR NITRIC OXIDE (NO) INSIDE A VENTED GAS CABINET WITH ALARM ANNUNCIATOR AND ISOLATION VALVES.

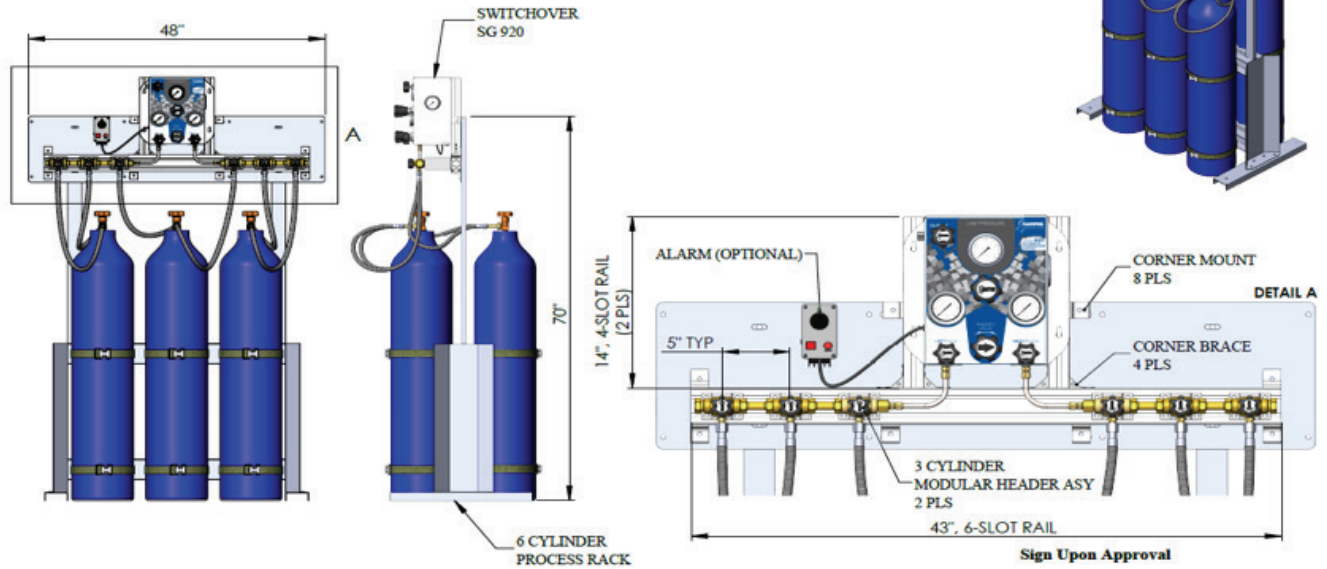
SOLUTION

Harris provided a two cylinder gas cabinet with a 905S ultra-high leak integrity changeover. The changeover had inlet isolation valves and switch gauges with an annunciator alarm mounted outside the cabinet. For safety, an excess flow valve was used in to protect in case of a failure in the SS flex hoses.

TIME TO COMPLETE **20 DAYS**



PROJECT: MODEL 920-3R36-3L36-580 WITH PROCESS RACK
(800) 733-4043 PROMPT 2
harrisspecgas@lincolnelectric.com



MODEL 920-3R36-3L36-580 W/PROCESS RACK

PROBLEM

CUSTOMER HAS NO AVAILABLE WALL SPACE, BUT NEEDS A 6 CYLINDER SWITCHOVER MANIFOLD WITH IN/OUT ISOLATION VALVES AND REMOTE AUDIO/VISUAL ALARM.

SOLUTION

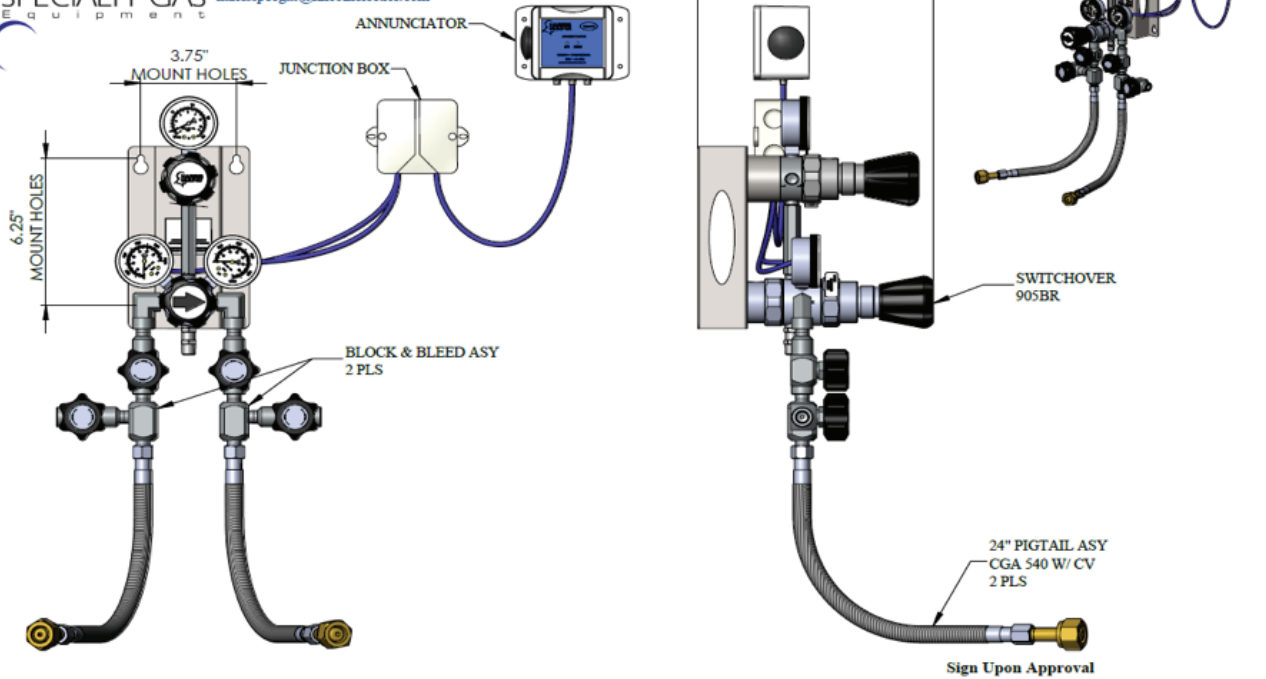
Harris designed a system utilizing our Model 920 Switchover Box, which has isolation valves on the inlet and outlet. We added a remote audio/visual alarm and mounted all hardware onto a mobile 6 cylinder process stand that is free standing and does not require wall mounting. This solution included a modular header system that can be expanded to up to 12 cylinders as demand increases.

TIME TO
COMPLETE

12 DAYS



PROJECT: MODEL 905BR-1R-1L-540, INLET PURGES AND ALARM
(800) 733-4043 PROMPT 2
harrisspecgas@lincolnelectric.com



MODEL 905BR-1R-1L-540, INLET PURGES AND ALARM

PROBLEM

LASER CUTTING APPLICATION, OXYGEN ASSIST GAS. CUSTOMER COMPLAINING THAT PREVIOUS MANIFOLD ALLOWED ATMOSPHERIC MOISTURE IN AND CAUSED DAMAGE TO LASER OPTICS. NEED A SOLUTION THAT WILL GUARANTEE NO CONTAMINANTS WILL GET INTO THE GAS STREAM.

SOLUTION

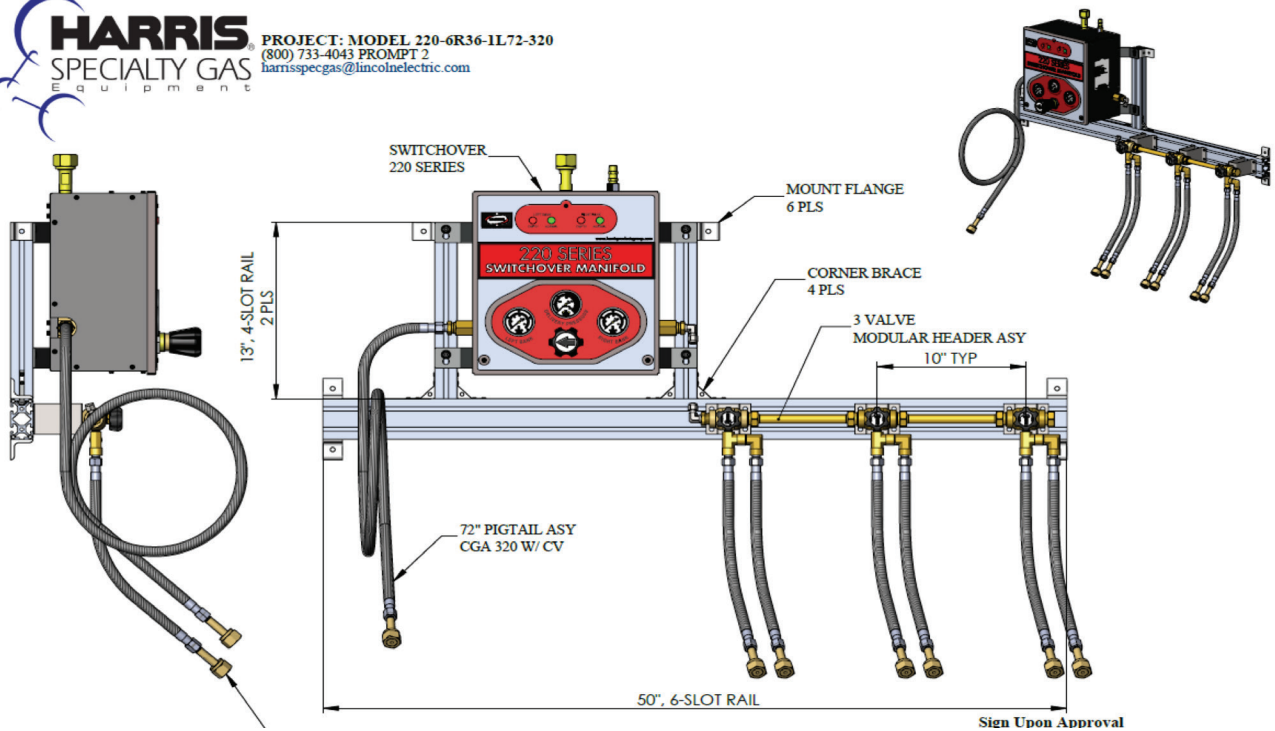
Harris offered a model 905 changeover with built-in block and bleed purges and remote audio/visual alarm to insure uninterrupted gas supply. At each cylinder change-out, the customer will purge atmospheric moisture from the system, eliminating potential damage to the laser. In addition, this system includes upstream and downstream particle filters to

TIME TO
COMPLETE

7 - 10 DAYS



PROJECT: MODEL 220-6R36-1L72-320
(800) 733-4043 PROMPT 2
harrisspecgas@lincolnelectric.com



MODEL 220-6R36-1L-320

PROBLEM

CUSTOMER IS SUPPLYING CO₂ TO A GAS BLENDER FOR A WELDING SHOP WITH 12 STATIONS. NEEDS A CONSTANT GAS SUPPLY WITH NO DOWNTIME. WANTS TO USE A LIQUID DEWAR AS A PRIMARY GAS SOURCE AND HIGH PRESSURE CYLINDERS AS A BACK-UP. LIMITED WALL SPACE.

SOLUTION

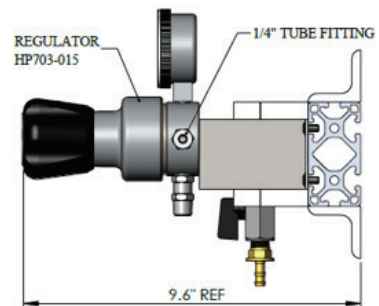
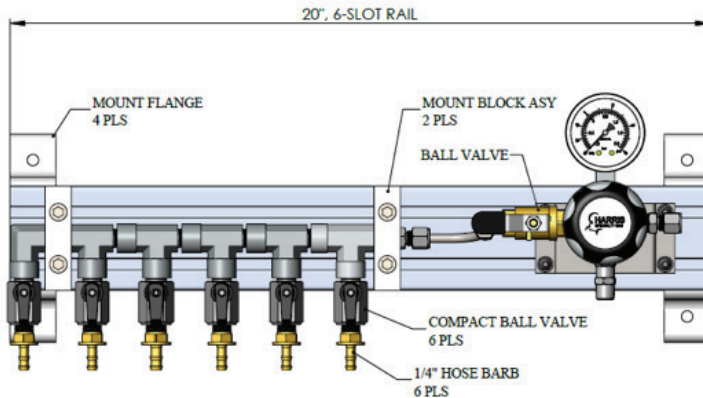
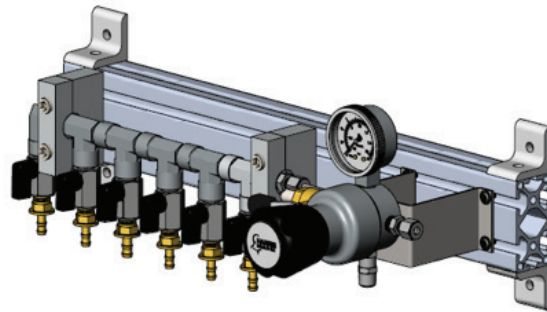
Harris designed a automatic changeover manifold with on-board alarm lights to indicate when the liquid dewar is depleted. The manifold will accommodate 1 liquid dewar on the left side and up to 6 high pressure cylinders on the right. Our modular header system was configured to host two high pressure cylinders at each station to reduce the overall footprint. The complete package was mounted shipped on 80/20 railing for easy installation.

TIME TO COMPLETE

15 DAYS



PROJECT: 6 OUTLET INCUBATOR REGULATOR
(800) 733-4043 PROMPT 2
harrispecgas@lincolnelectric.com



6 OUTLET INCUBATOR REGULATOR

PROBLEM

CUSTOMER HAS SIX CO₂ INCUBATORS IN A LAB. THEY NEED TO SUPPLY ALL SIX WITH 8 PSI USING TYGON TUBING. GAS SOURCE IS A CO₂ LIQUID DEWAR.

SOLUTION

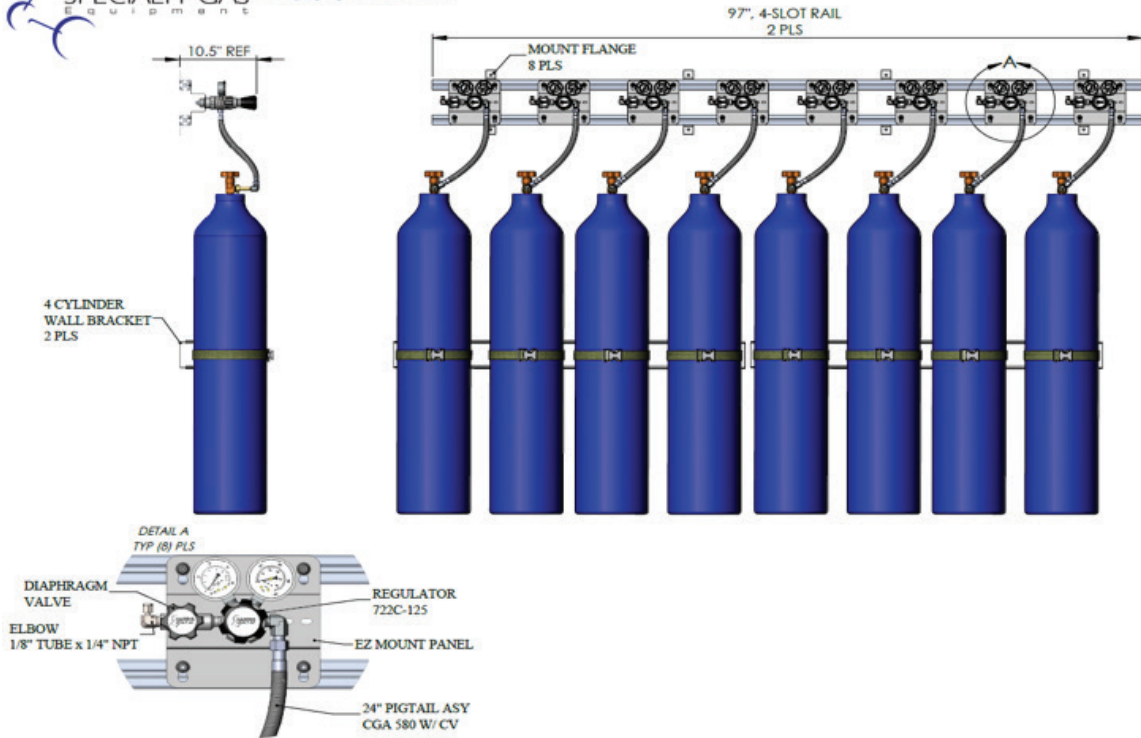
Harris designed a CO₂ "stick" that supplies up to six incubators with regulated gas from a model 703-015 regulator. The stick comes with a master shut-off valve and 6 isolation valves, one for each incubator. Each outlet has a 1/4" hose barb to attach the tubing. All hardware is mounted onto 80/20 railing for easy installation.

TIME TO COMPLETE

15 DAYS



PROJECT: 8 REGULATOR PANEL (TYP 2 PLS)
(800) 733-4043 PROMPT 2
harrispecgas@lincolnelectric.com



MODEL 910EZ EIGHT REGULATOR ARGON PANEL HIGH PRESSURE CYLINDERS, EZ MOUNTS

PROBLEM

NEW WELDING LAB WITH 8 BOOTHS WANTS TO PIPE IN ARGON FOR WELDING TO EACH BOOTH FROM INDIVIDUAL CYLINDERS, INDIVIDUALLY CONTROLLED. AVAILABLE WALL SPACE IS 8 FEET.

SOLUTION

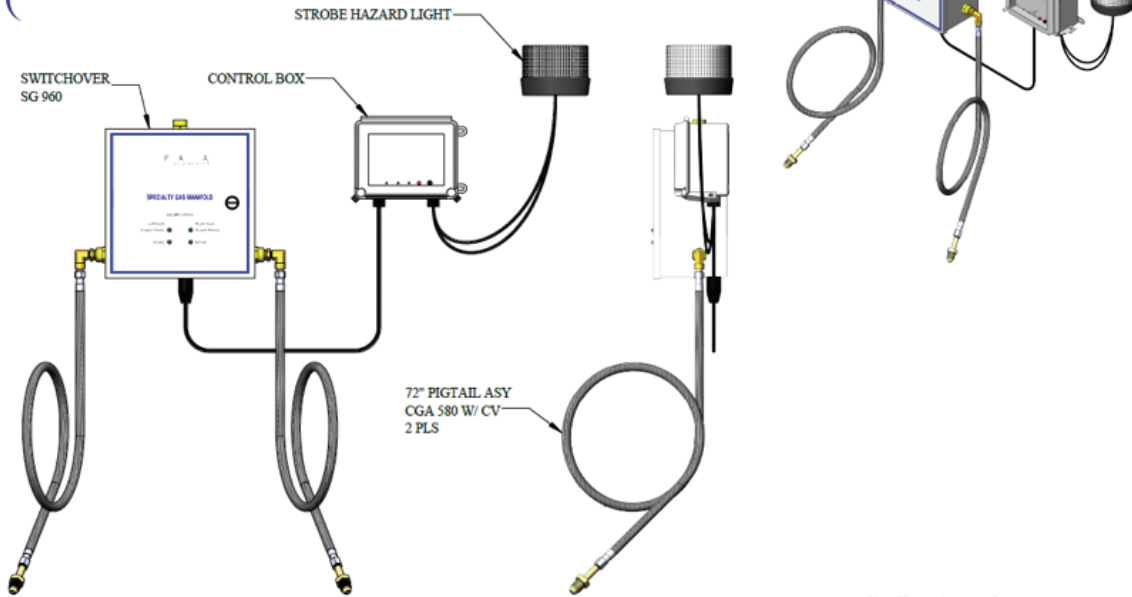
Designed a 8 regulator panel with model 721 regulators on EZ Mounts, 24" pigtails with isolation valve and 1/4" tube fitting elbow for SS piping going to each welding booth. Each regulator can be individually controlled. Pigtail has integral check valve to keep downstream pressurized during cylinder change out.

TIME TO COMPLETE

7 DAYS



PROJECT: MODEL SG960-1R72-1L72-580 WITH STROBE LIGHT
(800) 733-4043 PROMPT 2
harrisspecgas@lincolnelectric.com
Ordering #: SPPRD11121901JS



MODEL SG960-1R72-1L72 W/STROBE LIGHT

PROBLEM

CUSTOMER NEEDS A FULLY AUTOMATIC SWITCHOVER MANIFOLD FOR NITROGEN 12 PACKS OUTSIDE, BUT MAINTENANCE HAS TO BE NOTIFIED WHEN THE SYSTEM SWITCHES SO THAT THEY CAN REPLENISH THE GAS SUPPLY. CUSTOMER REQUESTED A STROBE LIGHT THAT COULD BE MOUNTED INSIDE IN THE SHOP THAT WOULD BE TIED INTO THE MANIFOLD ALARM AND ACTIVATE WHEN THE SYSTEM SWITCHED OVER. HARRIS SUPPLIED THE STROBE, BUT THE CUSTOMER WAS RESPONSIBLE FOR TYING IT INTO THE ALARM.

SOLUTION

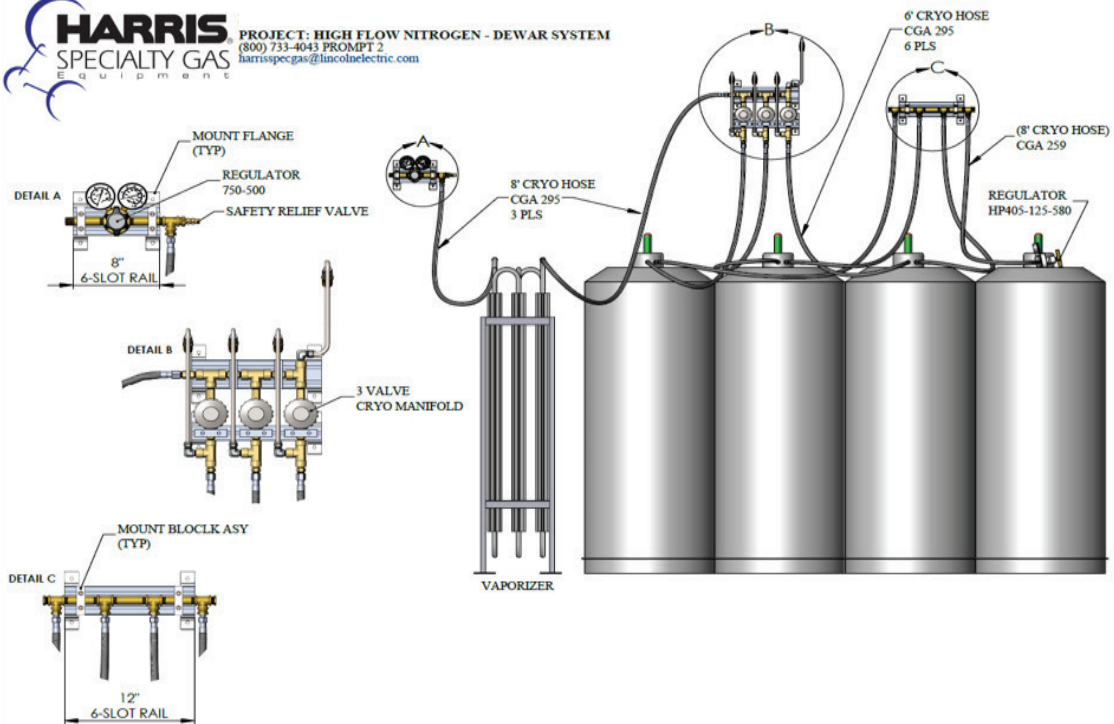
Modified a SG960 fully auto switchover manifold to signal a strobe light when the system switched over. The manifold has 72" flex hoses to allow easy assembly onto the 12 packs.

TIME TO
COMPLETE

12 DAYS



PROJECT: HIGH FLOW NITROGEN - DEWAR SYSTEM
(800) 733-4043 PROMPT 2
harrispecgas@lincolnelectric.com



LIQUID NITROGEN MANIFOLD WITH VAPORIZER AND HIGH FLOW REGULATOR

PROBLEM

CUSTOMER NEEDS HIGH FLOW RATES OF NITROGEN.
INSTALLING A BULK SYSTEM IS TOO EXPENSIVE AND WILL TAKE TOO LONG. NEED A QUICKER, LESS EXPENSIVE SOLUTION.

SOLUTION

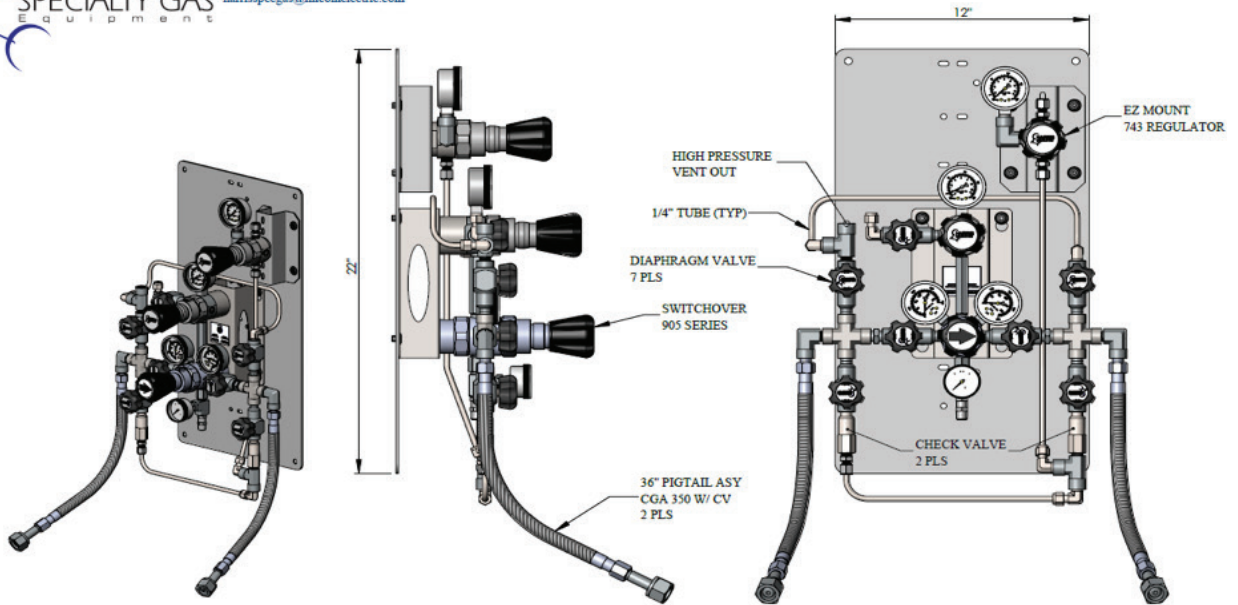
Developed a gas delivery system using our cryogenic liquid nitrogen manifold to tie 4 cylinders together. The liquid is supplied to a 3000 scfh vaporizer to turn the cryogenic liquid into a gas. The outlet of the vaporizer has a high flow model 750-500 regulator to supply nitrogen gas to the process. Bulk system costs were \$30k and delivery time was 6-8 weeks. Alternative system here cost less than \$9k and lead time was 3-4 weeks.

TIME TO COMPLETE

15 DAYS



PROJECT: 905 SERIES CHNAGEOVER WITH N2 PURGE SYSTEM
(800) 733-4043 PROMPT 2
harrispecgas@lincolnelectric.com



Sign Upon Approval

MODEL 905S AUTOMATIC CHANGEOVER SYSTEM FOR UHP HYDROGEN WITH A HIGH PRESSURE NITROGEN PURGE

PROBLEM

CUSTOMER IS USING UHP HYDROGEN IN AN APPLICATION AND NEEDS TO PROTECT THE DOWNSTREAM EQUIPMENT FROM ATMOSPHERIC CONTAMINATION. CUSTOMER REQUESTED A DUAL CROSS PURGE FOR THE CHANGEOVER USING HIGH PRESSURE NITROGEN AS A PURGE GAS.

SOLUTION

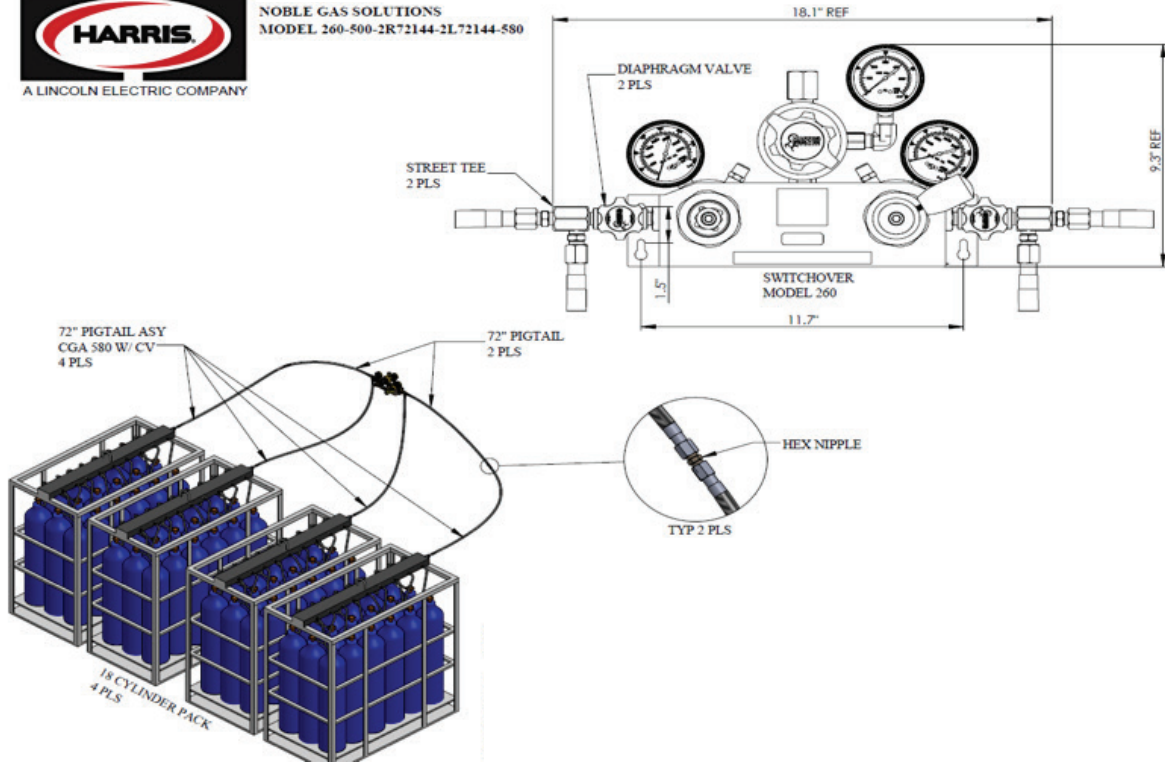
Harris provided a turn-key solution with a automatic changeover mounted on a SS panel with right and left side N₂ cross purges. The purges are tied together with a single vent point. The purge system feeds off of a high pressure cylinder, but regulated using a 743 line regulator.

TIME TO COMPLETE

17 DAYS



NOBLE GAS SOLUTIONS
MODEL 260-500-2R72144-2L72144-580



72 CYLINDER AUTOMATIC CHANGEOVER SYSTEM (MODEL 260-36R144-36L144-580)

PROBLEM

CUSTOMER NEEDS TO SUPPLY A LASER WITH NITROGEN ASSIST GAS USING 18 CYLINDER PACKS. BECAUSE OF THE HIGH VOLUME, TWO CYLINDER PACKS ARE NEEDED ON EACH SIDE.

SOLUTION

Designed an auto-changeover manifold for 72 cylinders (36 x 36). Model 260 high flow manifold is fed by four 16 packs via 12 foot flex hoses with integral check valves to prevent back flow.

TIME TO
COMPLETE

14 DAYS



HARRIS®
SPECIALTY GAS



A LINCOLN ELECTRIC COMPANY

The Harris Products Group
A Lincoln Electric Company
4501 Quality Place - Mason, OH 45040

Customer Service:
1.800.733.4043
+1.513.754.2000

Fax:
513.754.8778

PN 9700349
112019