Project: Mobile Hydrogen Generation Unit, Gen. 2
Last Update: 6/30/2020
Modified by: Sean Dimmer
Project Manager: Ian Richardson
(360) 509-8438
irichardson@wsu.edu

MHGU GENERATION 2 BILL OF MATERIALS

PN	P&ID Tag	Make/buy	Status	Description	Manufacturer	Model #	Qty	Cost Per Unit(\$)	Total Unit(s) Cost(\$)	Web Link	Company contact	Specifications
00	Document	5										
	0	Misc										
MHGU00-0-0001	N/A	MAKE	NEEDS SIGNATURE	BILL OF MATERIALS	HYPER	N/A	N/A	N/A	N/A	N/A	N/A	N/A
											Sean Dimmer	
MHGU00-0-0002	N/A	MAKE	NEEDS APPROVAL	CONCEPT, CAGE REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
											Sean Dimmer, Andy Mei	
MHGU00-0-0003	N/A	MAKE	NEEDS APPROVAL	CONCEPT, FLOORPLAN, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
											Sean Dimmer	
MHGU00-0-0004	N/A	MAKE	UNDER REVISION	CONCEPT, VENT STACK, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
MHGU00-0-0005	N/A	MAKE	NEEDS SIGNATURE	TEMPLATE, ENGINEERING REPORT, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	Hannah Gardner	N/A
											Sean Dimmer	
MHGU00-0-0006	N/A	MAKE	NEEDS APPROVAL	CONCEPT, PLUMBING PLAN REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
	1	Electrical Schen	natics	•	•	•	•	•				
	2	Control Docum	entation		•	•		•	'			
	3	HVAC Documer	ntation	•	•	•	•	•		•		
MHGU00-3-0001		MAKE		CONCEPT, Air Flow HVAC Gen2	HYPER	N/A	N/A	N/A	N/A	N/A	Luis Dominguez, Marcelo Ruiz	N/A
		Quotes			•				•			
01	Piping											
		Assemblies										
											Sean Dimmer	
MHGU01-0-0001	N/A	MAKE	IN PROGRESS (CAD)	LAYOUT, CONTROL MANIFOLD, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
	l '		,	,		<i>'</i>	· ·	<u> </u>	,	<i>'</i>	Sean Dimmer	,
MHGU01-0-0002	N/A	MAKE	IN PROGRESS (CAD)	PIPING, CONTROL MANIFOLD, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
	l '		,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		<i>'</i>	<u> </u>	<u> </u>	<i>'</i>	<i>'</i>	Sean Dimmer	,
MHGU01-0-0003	N/A	MAKE	IN PROGRESS (CAD)	CASE, CONTROL MANIFOLD, REV.1	HYPER	N/A	N/A	N/A	N/A	N/A	(425) 246-1128	N/A
		Equipment	,	1 ,		· ′	1.		. ,		137	1 '
	2	Steel Tube Sect	tions					•			'	
MHGU01-2-0001	N/A	MAKE		TUBE, 0.5 IN, STRAIGHT 21.96			1			I		
MHGU01-2-0002	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.5 IN, STRAIGHT 7.79								
MHGU01-2-0003	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.5 IN, STRAIGHT 2.38								
MHGU01-2-0004	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.5 IN, 90 BEND, 1.19 x 2.75								
MHGU01-2-0005	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.5 IN, BENDS								
MHGU01-2-0006	N/A			OPEN (0.5 in. tube section TBD)								
	<u> </u>			TUBE, 0.5 IN, BENDS								
				TUBE, 0.5 IN, STRAIGHT								
MHGU01-2-0007	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.25, STRAIGHT 1.63								
MHGU01-2-0008	N/A	MAKE	IN PROGRESS (CAD)	TUBE, 0.25, STRAIGHT 4.29								
MHGU01-2-0009	.,,											
MHGU01-2-0010												
MHGU01-2-0011												
MHGU01-2-0012												
MHGU01-2-0013												
MHGU01-2-0014	N/A	MAKE	IN PROGRESS (CAD)	1								
MHGU01-2-0015	N/A	MAKE	IN PROGRESS (CAD)								İ	
		Instruments		·	•		-	•			'	
							1					
												Pressure Gauge with Rubber Cover and
	1							1		1	1	Bottom Connection, 1/4 NPT Male,
MHGU01-3-0001	TBD	BUY	TBD	PRESSURE GAUGE, 160 PSI	McMaster Carr	2201T29	1	\$ 31.11	\$ 31.11	https://ww	N/A	Plastic Case, 3-1/2" Dial, 0-160 PSI
	1	T .	T -				1	1. 32.11	T. 31.11		1	3,0,0,0,0,0
												Pressure Gauge with Rubber Cover and
	1							1		1	1	Bottom Connection, 1/4 NPT Male,
MHGU01-3-0002	TBD	BUY	TBD	PRESSURE GAUGE, 300 PSI	McMaster Carr	2201T29	1	\$ 31.11	\$ 31.11	https://ww	J _{N/A}	Plastic Case, 3-1/2" Dial, 0-300 PSI
10001-3-0002		Valves	1.00	The source and de, and that	I CIAIGOCCI COLL	12201123	J-	1 9 31.11	1 7 31.11	cps.// ww	314/1	1 10500 C03C, 5-1/2 Diai, 0-300 F31
	T	- 0.763	I		1		1		1	I	I	Stainless Steel 1-Piece 40G Series Ball
	1							1		1	1	Valve, 1.4 Cv, 1/4 in. Swagelok Tube
MHGU01-4-0001	TBD	BUY	TBD	BALL VALVE, 0.25 IN	Swagelok	SS-43GS4	TBD	\$ 102.88		https://ww	N/A	Fitting, 3000 PSIG @ 100°F
WITGUU1-4-UUU1	100	100	IBU	DALL VALVE, U.23 IIV	Swagelok	33-43034	IBU	3 102.88		inttps://ww	IN/A	FILLING, SOUD PSIG @ 100 F
	1							1		1	1	Stainless Steel Poppet Check Valve, Fixed
												Pressure, 1/2 in. Swagelok Tube Fitting, 1
MHGU01-4-0002	TBD	BUY	TBD	CHECK VALVE, 0.5 IN	Swagelok	SS-8C-1	TBD	\$ 115.40		https://ww	JN/A	psig (0.07 bar), 3000 PSIG @ 100°F
141110001-4-0002	1100	1001	1100	CITECK VALVE, U.J IIV	PANARCION	22-0C-T	1100	115.40	1	rictps.//ww	117/0	paig (0.07 bal), 3000 raid @ 100 r

					1	l .				l l			
					İ								Stainless Steel Poppet Check Valve, Fixed
					i								Pressure, 1/4 in. Swagelok Tube Fitting, 1
IGU01-4-0003		BUY	TBD	CHECK VALVE, 0.25 IN	Swagelok	SS-4C-1	TBD	\$	54.03		https://ww	N/A	psig (0.07 bar), 3000 PSIG @ 100°F
		Flexible Tubing											
	-	5 Fittings											
						1							
					i								Stainless Steel Swagelok Tube Fitting,
								Ι.				L	Union Tee, 1/4 in. Tube OD, 316 SS,
HGU01-6-0001	N/A	BUY	TBD	TUBE TEE, 0.25 IN	Swagelok	SS-400-3	TBD	\$	25.77		https://ww	N/A	MAWP is tubing working pressure
					i								Stainless Steel Suppolely Tube Sitting
					i								Stainless Steel Swagelok Tube Fitting, Union Tee, 1/2 in. Tube OD, 316 SS,
IGU01-6-0002	N/A	BUY	TBD	TUBE TEE, 0.5 IN	Swagelok	SS-810-3	TBD	s	51.23		https://ww	N/A	MAWP is tubing working pressure
												,	
					i								Stainless Steel Swagelok Tube Fitting,
					i								Union Cross, 1/4 in. Tube OD, 316 SS,
GU01-6-0003	N/A	BUY	TBD	TUBE CROSS, 0.25 IN	Swagelok	SS-400-4	TBD	\$	46.89		https://ww	N/A	MAWP is tubing working pressure
					i								Stainless Steel Swagelok Tube Fitting,
					i								Union Cross, 1/2 in. Tube OD, 316 SS,
IGU01-6-0004	N/A	BUY	TBD	TUBE CROSS, 0.5 IN	Swagelok	SS-810-4	TBD	\$	67.48		https://ww	N/A	MAWP is tubing working pressure
SU01-6-0005		BUY	TBD	TUBE RED, 0.5 OD 0.25 TUBE	Swagelok		TBD	\$	12.32		https://ww		
-					<u> </u>								
	1				İ								Stainless Steel Swagelok Tube Fitting,
IGU01 6 0006	N/A	BUY	TBD	BRANCH TEE, 0.25 IN	Swagolok	SS-400-3-4TTF	d TRD		37.26		https://ww	N/A	Female Branch Tee, 1/4 in. Tube OD x 1/4 in. Tube OD x 1/4 in. Female NPT
GU01-6-0006	N/A	BUT	עפון	DIMINUT IEE, U.23 III	Swagelok	33-40U-3-411F	טפו	,	37.20		nttps://ww	IN/M	Stainless Steel Swagelok Tube Fitting,
					i								Female Connector, 1/4 in. Tube OD x 1/4
IGU01-6-0007	N/A	BUY	TBD	ADAPTER, 0.25 TUBE x 0.25 FNPT	Swagelok	SS-400-7-4	TBD	\$	13.35		https://ww	N/A	in. Female NPT
02	2 Electrical												
	1	Assemblies	I			_		1		1		<u> </u>	T
	1	1 Equipment						_					
IGU02-1-0001	N/A	BUY	PURCHASED	UPS, ELECTROLYZER	Toshiba	H3BG2L140C6	,	1					
		Wiring											
		1			<u> </u>	Ь							
	T	Conduit	Γ										
	-	1 Enclosures						_					
													T
		Switches											
		6 Recepticles											
	T	Recepticies						1					T
03	3 Thermal:	systems											
		Assemblies		1								<u> </u>	
	1				1	l .							
HU03-1-0001	IN/A	1 Equipment	NFFDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange	DAYTON	20UA40	1	Ts.	354.00	\$ 354.00	https://ww	N/A	IN/A
	N/A N/A	BUY	NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange Stationary Intake Louvers Drainable w/ Flange kit	DAYTON DAYTON	20UA40 20UA08	1 1	\$	354.00 319.00	\$ 354.00 \$ 319.00	https://ww	N/A N/A	N/A N/A
HU03-1-0002	N/A	BUY						\$ \$ \$		\$ 354.00 \$ 319.00 \$ 1,098.40	https://ww https://ww	N/A	
HU03-1-0002 HU03-1-0003 HU03-1-0004	N/A N/A N/A N/A	BUY BUY BUY BUY	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$	319.00	\$ 319.00	https://ww	N/A N/A	N/A
SHU03-1-0002 SHU03-1-0003 SHU03-1-0004 HGU03-1-0005	N/A N/A N/A N/A N/A	BUY BUY BUY BUY	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM	20UA08 SD08-XPF	1 2	\$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005	N/A N/A N/A N/A N/A N/A Liquefact	BUY BUY BUY BUY BUY	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005	N/A N/A N/A N/A N/A N/A Liquefact	BUY BUY BUY BUY	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005	N/A N/A N/A N/A N/A N/A 1 Liquefact	BUY BUY BUY BUY BUY	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
6HU03-1-0002 6HU03-1-0003 6HU03-1-0004 IGU03-1-0005 04	N/A N/A N/A N/A N/A N/A A Liquefact	BUY BUY BUY BUY BUY BUY BUY On D Assemblies	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005 04	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY BUY BUY CON D Assemblies L Equipment	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005 04	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY Con D Assemblies L Equipment D Assemblies	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD)	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A N/A
HU03-1-0002 HU03-1-0003 HU03-1-0004 GU03-1-0005 04 05 GU05-0-0001	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY BUY BUY CON D Assemblies L Equipment	NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A N/A N/A Currently mocked up for preliminary design
U03-1-0002 U03-1-0003 U03-1-0005 04 U03-1-0005 04 U05-0-0001 U05-0-0002 U05-0-0002	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY BUY Ton D Assemblies L Equipment D Assemblies MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD)	Stationary Intake Louvers Drainable Wy Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LYOUT, PLATFORM, CLASSIFIED SIDE	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A N/A
05 05 05 05 06 07 07 08 09 09 09 09 09 09 09 09 09 09	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY On O Assemblies L Equipment I Assemblies MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A N/A N/A Currently mocked up for preliminary design
HU03-1-0002 HU03-1-0003 HU03-1-0005 04 05 GU05-0-0001 GU05-0-0003 GU05-0-0003 GU05-0-0003	N/A N/A N/A N/A N/A N/A N/A N/A Solution N/A Solution Sol	BUY BUY BUY BUY BUY On O Assemblies L Equipment J Assemblies MAKE MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable Wy Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LYOUT, PLATFORM, CLASSIFIED SIDE	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ 5 5 5 5	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A	N/A N/A N/A N/A Currently mocked up for preliminary design
HU03-1-0002 HU03-1-0003 HU03-1-0005 04 05 GU05-0-0001 GU05-0-0003 GU05-0-0003 GU05-0-0003	N/A N/A N/A N/A N/A N/A N/A N/A Solution N/A Solution Sol	BUY BUY BUY BUY BUY On O Assemblies L Equipment I Assemblies MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww	N/A N/A N/A	N/A N/A N/A N/A Currently mocked up for preliminary design
HU03-1-0002 HU03-1-0003 HU03-1-0005 04 05 IGU05-0-0001 IGU05-0-0002 IGU05-0-0003 IGU05-0-0004 IGU05-0-0005	N/A N/A N/A N/A N/A N/A N/A S S Structura	BUY BUY BUY BUY BUY On O Assemblies L Equipment J Assemblies MAKE MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE FULL ASSEMBLY	DAYTON CANARM CANARM Sumitomo	20UA08 SD08-XPF SD10-XPF CSA-71A	1 2 2	S	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww	N/A N/A N/A N/A Eddie Hughes	N/A N/A N/A N/A Currently mocked up for preliminary design
HU03-1-0002 HU03-1-0003 HU03-1-0005 04 05 IGU05-0-0001 IGU05-0-0002 IGU05-0-0003 IGU05-0-0004 IGU05-0-0005	N/A N/A N/A N/A N/A N/A N/A S Structura	BUY BUY BUY BUY BUY On D Assemblies L Equipment MAKE MAKE MAKE MAKE MAKE L Equipment	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) PURCHASED	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE	DAYTON CANARM CANARM	20UA08 SD08-XPF SD10-XPF	1 2 2	S	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww	N/A N/A N/A	N/A N/A N/A N/A Currently mocked up for preliminary design
SHU03-1-0002 SHU03-1-0003 SHU03-1-0005 04 GU03-1-0005 05 GU05-0-0001 GU05-0-0003 GU05-0-0003 GU05-0-0005	N/A N/A N/A N/A N/A N/A N/A S Structura	BUY BUY BUY BUY BUY On O Assemblies L Equipment O Assemblies MAKE MAKE MAKE MAKE MAKE BUY BUY BUY D Priping Hardwar	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) PURCHASED	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE FULL ASSEMBLY CONTAINER, ISU 90 4 DOOR	DAYTON CANARM CANARM Sumitomo	20UA08 SD08-XPF SD10-XPF CSA-71A	1 2 2	5 5 5 5 5	319.00 549.20 569.10	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww	N/A N/A N/A N/A Eddie Hughes Eddie.Hughes@aarcorp.com	N/A N/A N/A N/A N/A Currently mocked up for preliminary design currently design currently design
SHU03-1-0002 SHU03-1-0003 SHU03-1-0004 IGU03-1-0005 04 05 IGU05-0-0001 IGU05-0-0002 IGU05-0-0003 IGU05-0-0004 IGU05-0-0005	N/A N/A N/A N/A N/A N/A N/A S Structura	BUY BUY BUY BUY BUY On O Assemblies L Equipment O Assemblies MAKE MAKE MAKE MAKE MAKE MAKE MAKE MAKE	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) PURCHASED	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE FULL ASSEMBLY	DAYTON CANARM CANARM Sumitomo	20UA08 SD08-XPF SD10-XPF CSA-71A	1 2 2	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	319.00 549.20	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww	N/A N/A N/A N/A Eddie Hughes Eddie.Hughes@aarcorp.com	N/A N/A N/A N/A N/A N/A Currently mocked up for preliminary design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently de
GHU03-1-0003 GHU03-1-0004 HGU03-1-0005 04 05 HGU05-0-0001 HGU05-0-0002 HGU05-0-0003 HGU05-0-0005 HGU05-1-0001	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	BUY BUY BUY BUY BUY D SUY BUY D Assemblies L Equipment MAKE MAKE MAKE MAKE MAKE MAKE MAKE MAK	IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD)	Stationary Intake Louvers Drainable Wy Flange kit. 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, CLASSIFIED SIDE LAYOUT, PLATFORM, CLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE CAYOUT, PLATFORM, UNCLASSIFIED SIDE CONTAINER, ISU 90 4 DOOR PEGBOARD, 21.5 x 45.5	DAYTON CANARM CANARM Sumitomo AARCorp McMaster-Carr	20UA08 SD08-XPF SD10-XPF CSA-71A S6X02-000	1 2 2 1	1 5	319.00 549.20 569.10	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww https://ww	N/A N/A N/A N/A Eddie Hughes Eddie.Hughes@aarcorp.com	N/A N/A N/A N/A N/A N/A N/A Currently mocked up for preliminary design of the second
05 NGU05-1-0001 NG	N/A N/A N/A N/A N/A N/A N/A S Structura	BUY BUY BUY BUY BUY On O Assemblies L Equipment O Assemblies MAKE MAKE MAKE MAKE MAKE BUY BUY BUY D Priping Hardwar	NEEDS APPROVAL NEEDS APPROVAL NEEDS APPROVAL IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) IN PROGRESS (CAD) PURCHASED	Stationary Intake Louvers Drainable w/ Flange kit 8" Exhaust fan 360 CFM explosion proof 10" Exhaust fan 620 CFM explosion proof Cryocooler Compressor Model PLATFORM, CLASSIFIED SIDE PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE LAYOUT, PLATFORM, UNCLASSIFIED SIDE FULL ASSEMBLY CONTAINER, ISU 90 4 DOOR	DAYTON CANARM CANARM Sumitomo	20UA08 SD08-XPF SD10-XPF CSA-71A S6X02-000	1 2 2	1 5 5	319.00 549.20 569.10	\$ 319.00 \$ 1,098.40	https://ww https://ww https://ww	N/A N/A N/A N/A Eddie Hughes Eddie.Hughes@aarcorp.com	N/A N/A N/A N/A N/A N/A Currently mocked up for preliminary design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently design currently de

/HGU05-2-0004	N/A	MAKE	TBD	LOW PROFILE STRUT, 20 IN			6						Cut from MHGU05-5-0001
HGU05-2-0005	N/A	MAKE	TBD	LOW PROFILE STRUT, 8 IN			1						Cut from MHGU05-5-0001
HGU05-2-0006	N/A	MAKE	TBD	LOW PROFILE STRUT, 4 IN			1						Cut from MHGU05-5-0001
HGU05-2-0007	N/A	MAKE	TBD	BOSCH 45 x 45 MM, 91.77 IN									Cut from MHGU05-5-0002
/HGU05-2-0008	N/A	MAKE	TBD	BOSCH 45 x 45 MM, 32.23 IN									Cut from MHGU05-5-0002
/HGU05-2-0009	N/A	MAKE	TBD	BOSCH 45 x 45 MM, 76.23 IN									Cut from MHGU05-5-0002
ИHGU05-2-0010	N/A	MAKE	TBD	BOSCH 45 x 45 MM, 34.23 IN									Cut from MHGU05-5-0002
MHGU05-2-0011	N/A	MAKE	TBD	BOSCH 45 x 45 MM, 44 IN									
													Cylinder Rack, Wall-Mount, Plastic, 10-
													1/2" Wide x 4" High x 2-1/2" Deep
													Overall, 4-12" Diameter, OSHA and NFPA
ИНGU05-2-0011	N/A	BUY	TBD	WALL MOUNT, CYLINDER	McMaster-Carr	2283T11	4	\$ 33.2	4 \$	132.96	https://ww	N/A	Code 1 Compliant
	. 3	Electrical Hard	ware										
		General Hardv			,			,					
	N/A	MAKE		FLOOR, CLASSIFIED SIDE									Currently mocked up for preliminary design
1HGU05-4-0002		MAKE		FLOOR, UNCLASSIFIED SIDE									Currently mocked up for preliminary design
	5	Material Stock						,					
													Strut Channel, Low-Profile, Slotted Hole,
1HGU05-5-0001	N/A	BUY	TBD	STOCK, LOW PROFILE STRUT	McMaster-Carr	33085T94	TBD	\$ 108.2	0		https://ww	N/A	316 Stainless Steel
1HGU05-5-0002	N/A	BUY	TBD	STOCK, BOSCH 45 x 45 MM, 20 FT	Bosch Rexroth								Material: AW 6063-T66
1HGU05-5-0003	N/A	BUY	TBD	STOCK, 0.25 x 0.035 x 240 IN TUBE	Swagelok								
1HGU05-5-0004		BUY	TBD	STOCK, 0.5 x 0.049 x 240 IN TUBE	Swagelok								
	6	Fasteners			,			,					
0	6 Controls												
	0	Assemblies	_	T	1		1		_			ı	
		<u> </u>											
	1	Equipment	1	T	T	1	T	I			ı	CAD Model:	
												Sean Dimmer (HYPER)	
									1			(425) 246-1128	
									1				
									1			H2scan Contact:	
ИНGU06-1-0001		BUY	1	HY-ALERTA 1600	H2scan								
0	7 Tools			T									
	1	1	1	1	1	1	1	ı	1		1		