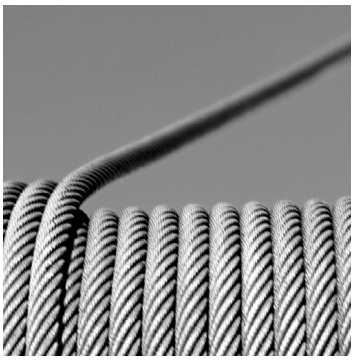
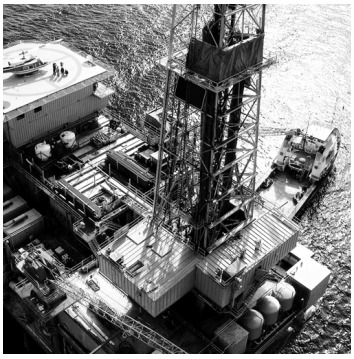
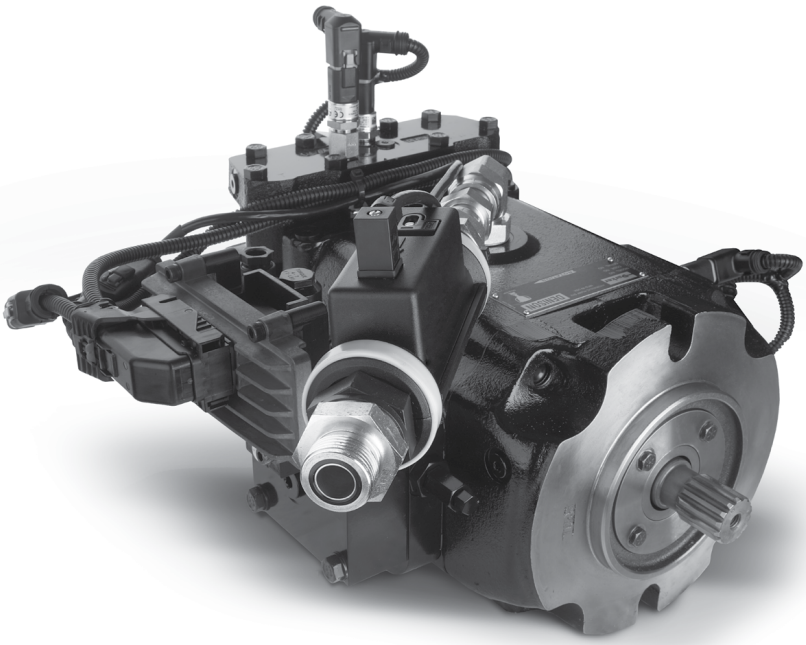
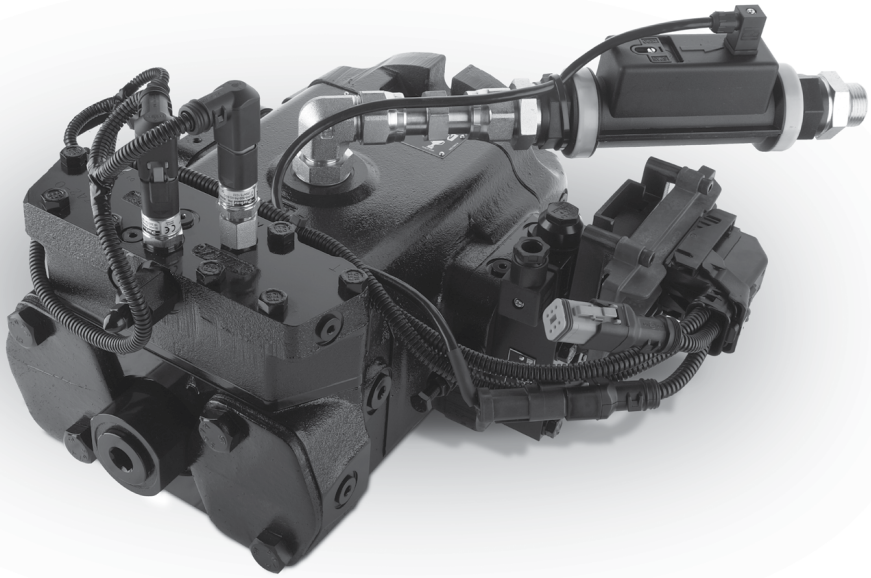








Denison GOLD CUP® – IE

Installation Manual

HY28-2716-02/GC/US

Effective: September 2021

ENGINEERING YOUR SUCCESS.

Gold Cup – IE (Intelligence Enabled) combines the robust design of Gold Cup pump technology with the intelligence of operational sensors and a fully connected predictive analytics engine. This smart pump concept is available factory installed or can be ordered for retrofit of existing Gold Cup applications. This document is intended to provide the tools necessary to install and utilize the capabilities of Gold Cup – IE to maximize performance and operational efficiencies, with insight for solid business decisions.

The plug-and-play design uses the same sensor hardware, wiring harnesses, and control modules across all Gold Cup frame sizes. To simplify the commissioning process, installation steps, drawings, bills of material, sensor specifications, and direct links to related documents are all contained within this manual. Parker's Hydraulic Pump and Power Systems Division is proud to be a part of advancing system designs through innovation. Thank you for using Gold Cup – IE to achieve this goal.

Parker Hannifin Corporation
Hydraulic Pump and Power Systems Division
United States

Pump Mounted Hardware

Electrical Requirements	
Voltage	24 VDC
Power Consumption	6 W
Recommended Fusing	500 mA

Operating Conditions	
Operating Temperature	-40 to 125°C
Storage Temperature	-40 to 140°C
Rupture Pressure (High Pressure Components)	1500 bar
Rupture Pressure (Low Pressure Components)	80 bar
IP Rating (Pump Mounted Equipment)	IP67/9k
Flow Meter	IP65

Direct Battery Input (+VBATT)				
Parameter	Min	Nom	Max	Units
Input voltage for normal operation (see note 1)	6.5 V	--	32	V
Maximum continuous voltage (see note 2)	--	--	36	V
Maximum peak current 3.17, 1.50, 0.74, 0.64 (see note 3) **VBATT = 6.5 V** **VBATT = 13.8 V** **VBATT = 28.0 V** **VBATT = 32.0 V**	--	--	 3.17A 1.50A 0.74A 0.64A	 A A A A
Recommended External Fuse	--	3	--	A

Note 1: It is strongly recommended that Pin 6 of the module be connected directly to the vehicle battery source and to utilize Pin 11 (Power Control) for activating and deactivating, as well as allowing a safe shut-down sequence of the module. Connecting Pin 6 to a switched battery source may result in memory corruption which, in its most severe case, may render the unit inoperable and require device reprogramming to recover.

Note 2: Exposure to maximum voltages for extended periods may affect device reliability.

Note 3: Maximum peak current is a theoretical calculation assuming maximum current draw for each peripheral as specified in datasheets, 85% efficiency for step-down regulators, and peak cellular current during a 1-slot Tx burst at maximum power. The burst duration is typically 1 ms or less, thus not affecting recommended fuse ratings.

Parker Hannifin Corporation
Hydraulic Pump and Power Systems Division
United States

Sensors

Sensor Variable	Case Pressure SP05-035-R6-0D-ECD	System Pressure SCP05-500-R6-0D-ECD	Replenishment Pressure SCP05-250-R6-0D-ECD	Case Drain Flow Meter DFT990	Case Temperature 20073658
General					
Output Type	0-5VDC	0-5VDC	0-5VDC	4-20mA	0-5VDC
Pressure Range	0-35 bar	0-500 bar	0-250 bar	0-10 bar	--
Over Pressure	Max 70 bar	Max 1000 bar	Max 500 bar	--	--
Burst Pressure	Min 140 bar	Min 2000 bar	Min 1000 bar	--	1000 bar
Operating Temperature	--	--	--	5°C-80°C	-50°C - 150°C
Accuracy				+/- 2% FSD	
Total Error (-40°C to 125°C)	Max 2.5% FS	Max 2.5% FS	Max 2.5% FS	--	
Total Error (-25°C to 100°C)	Max 1.5% FS	Max 1.5% FS	Max 1.5% FS	--	
Repeatability	Max 0.2%	Max 0.2%	Max 0.2%	--	
Threaded Interface					
Port Size	SAE-6	SAE-6	SAE-6	1.0 inch	SAE-6
Port Type	ORB	ORB	ORB	BSPP	ORB
Material					
O-ring	FKM	FKM	FKM	Nitrile	Nitrile
Wetted Components	Stainless Steel	Stainless Steel	Stainless Steel	Borosilicate Glass Tube, Glass Filled Nylon	Stainless Steel

Safety and Clean Work Environment

Before performing any work on the hydraulic unit, ensure pump is disconnected from all energy sources and that any residual energy is removed from the system.

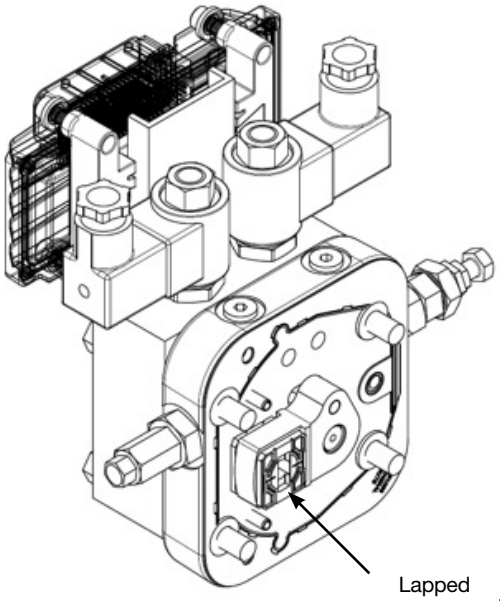
All disassembly and assembly of hydraulic units should be done in a clean environment to prevent contamination.

Prior to assembly, all parts are to be inspected and free of material defects, dirt, scratches, or any foreign material. All parts are to be cleaned with suitable cleaning solvent and all cores and passages blown out with clean, dry compressed air.

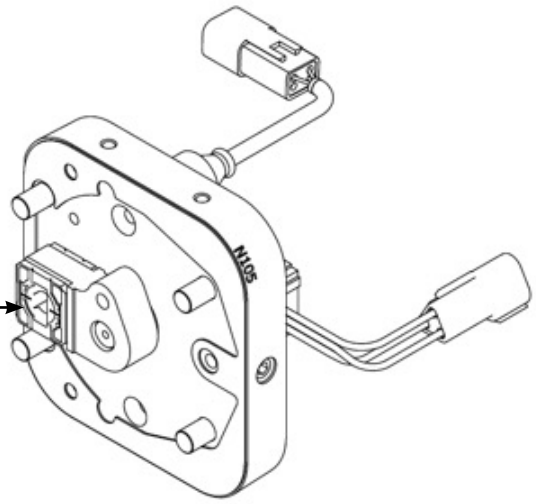
After cleaning and inspection, all parts are to be covered with a light film of oil and should be protected from dirt and excessive handling until assembled onto the unit.

During assembly, lapped and ground surfaces should be kept lubricated and protected from nicks and surface damage.

Input Control

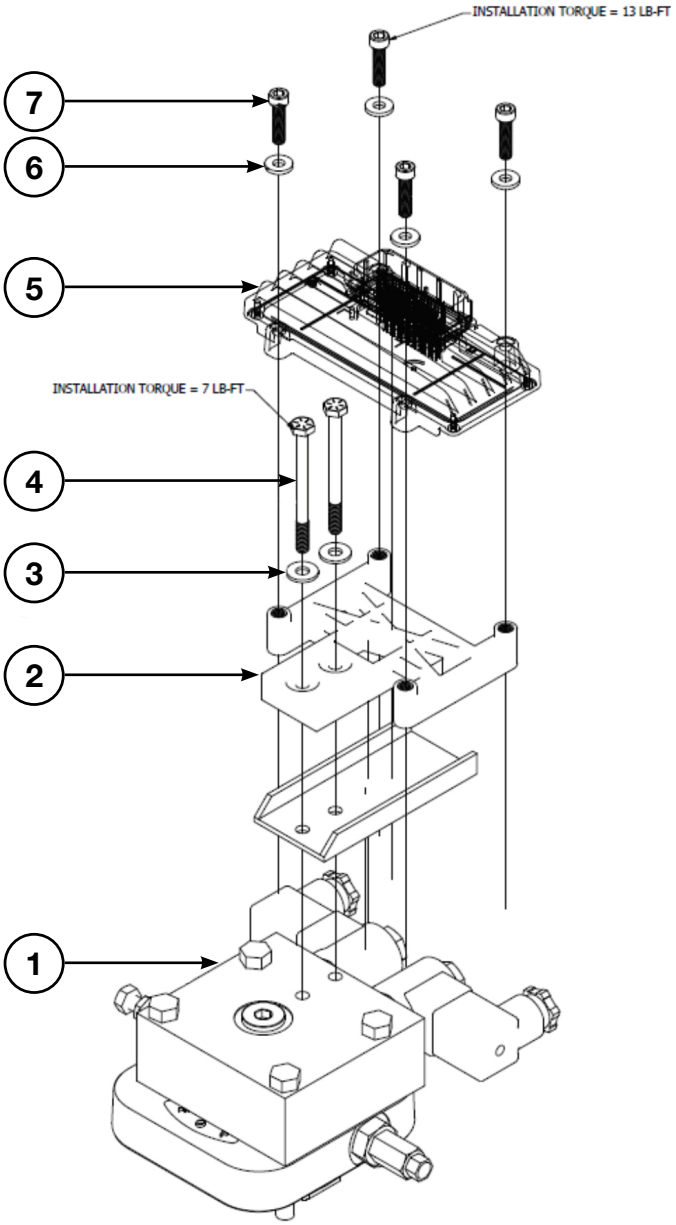


Output Control



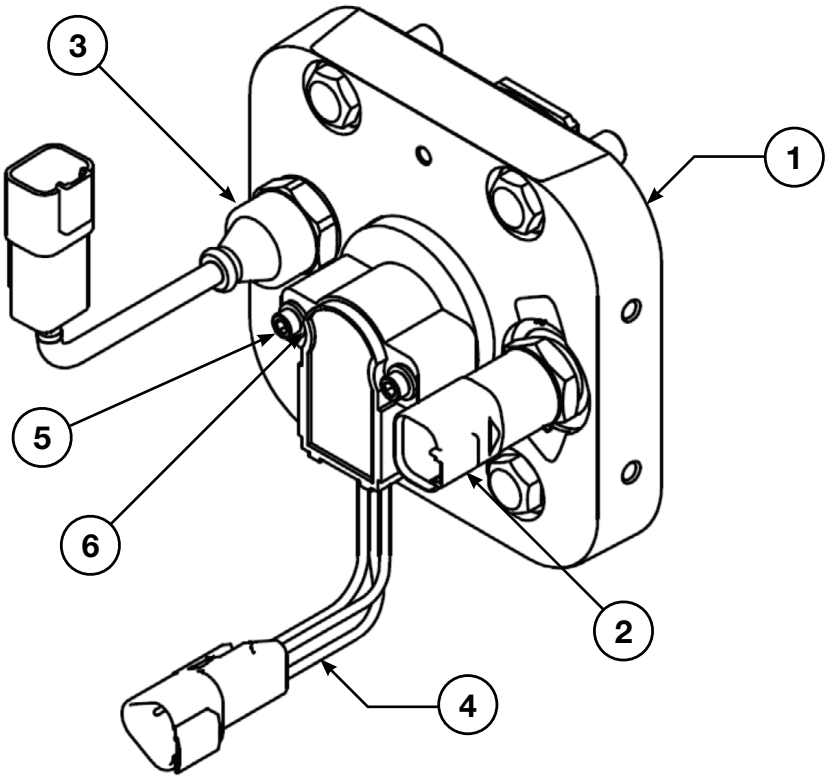
S53-10833-0 (Input Control 9AE00)
S53-10843-0 (Input Control 9AE01)
S53-10844-0 (Input Control 9AE - Retrofit)*

***Note:** Balloon item 1 not included



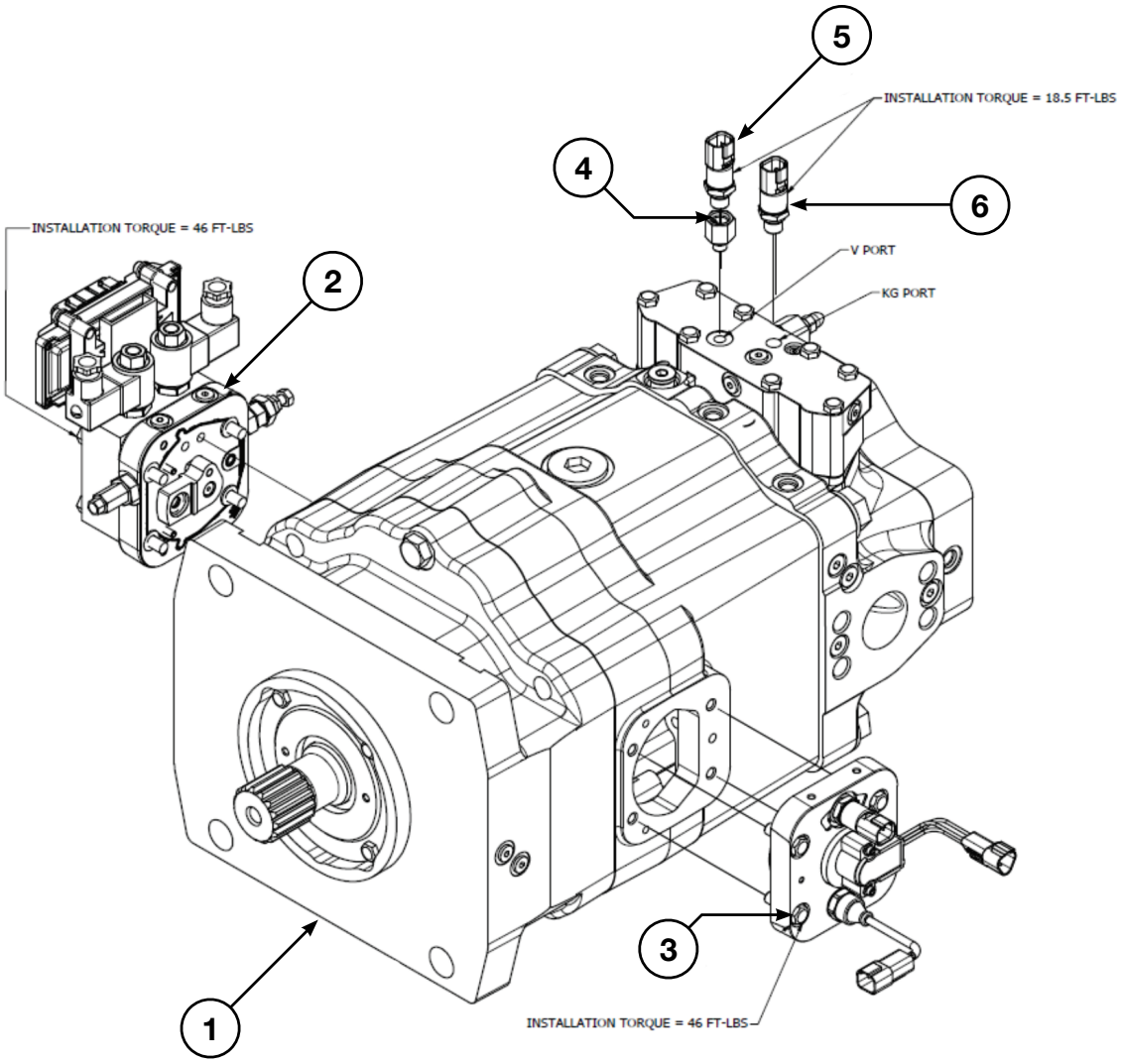
Balloon	Part Number	Description	Qty
1	S23-12957-0	EHS 9A* *01 75-350 A/B 12V	1
	S23-12667-0	EHS-9A*-*00, 75-350 A/B24V1/5	1
2	S53-10855-0	MC41 TO 9A BRACKET	1
3	345-10016-0	WASHER, PLAIN STEEL	2
4	306-40198-0	SCREW, HHC 1/4-20 UNC X 3 LG.	2
5	20085111	MC41	1
6	345-10012-0	WASHER, PLAIN STEEL 1/4	4
7	361-08200-0	SCREW, SHC M6 X 25MM	4

S53-10845-0 (Output Control 9AE)



Balloon	Part Number	Description	Qty
1	033-97105-0	COVER PLATE SENSOR-PAK	1
2	2820012	PRESSURE SENSOR SCP05-035-R6	1
3	20073658	TEMP SENSOR - IQAN-ST	1
4	788-80015-0	SENSOR ROT +/- 22 DEG 01588	1
5	358-08180-0	SCREW, SHC 8-32 UNC X 1 1/4	2
6	345-10008-0	WASHER, PLAIN STEEL 3/16	2

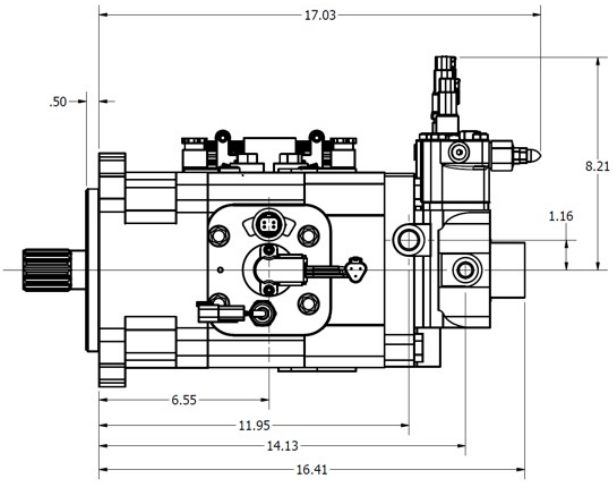
Full Assembly and Part Numbers

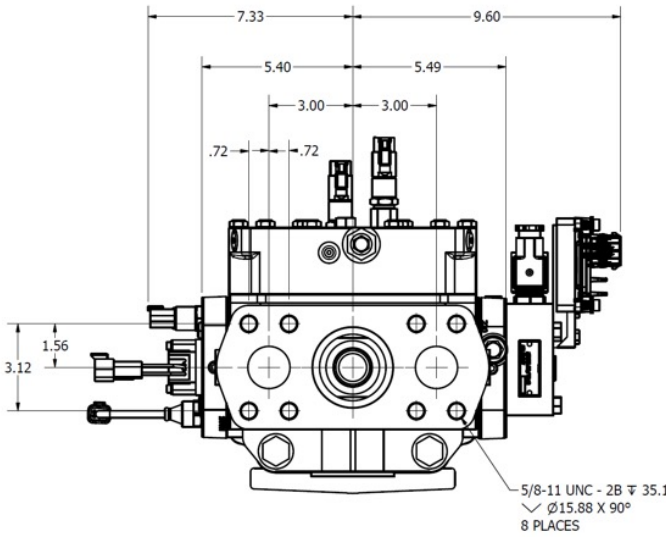


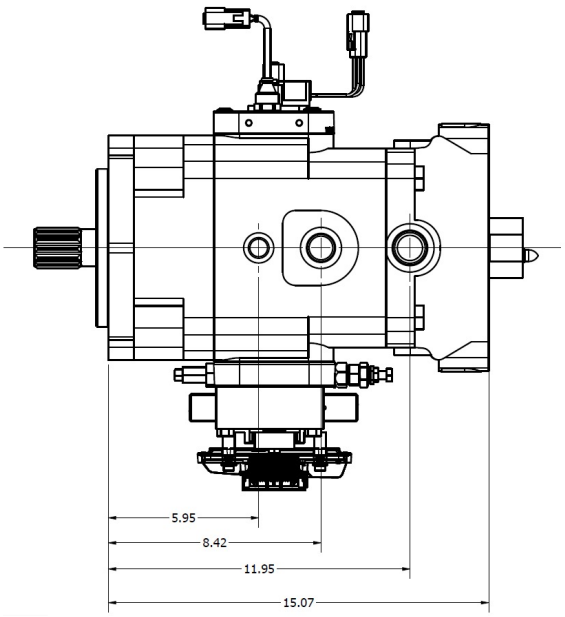
Shown Above: Gold Cup P24

Balloon	Part Number	Description	Qty
1	Pump	Gold Cup Pump	1
2	S53-10833-0	INPUT CONTROL 9AE00 - COMPLETE INPUT CONTROL WITH MC41 INSTALLED (24V COILS)	1
	S53-10843-0	INPUT CONTROL 9AE01 - COMPLETE INPUT CONTROL WITH MC41 INSTALLED (12V COILS)	1
3	S53-10845-0	OUTPUT CONTROL 9AE - COMPLETE OUTPUT CONTROL WITH DISP, TEMP AND PRESSURE SENSORS INSTALLED	1
4	4-6 F5OG5	SAE ADPTR SIZE 4 MALEX SIZE 6 F	1
5	2820013	PRESSURE SENSOR SCP05-500-R6	1
6	2820016	PRESSURE SENSOR SCP05-250-R6	1

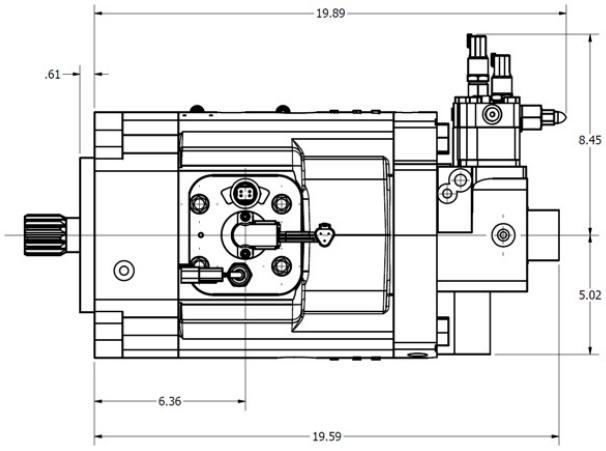
P6/7/8 Dimensions

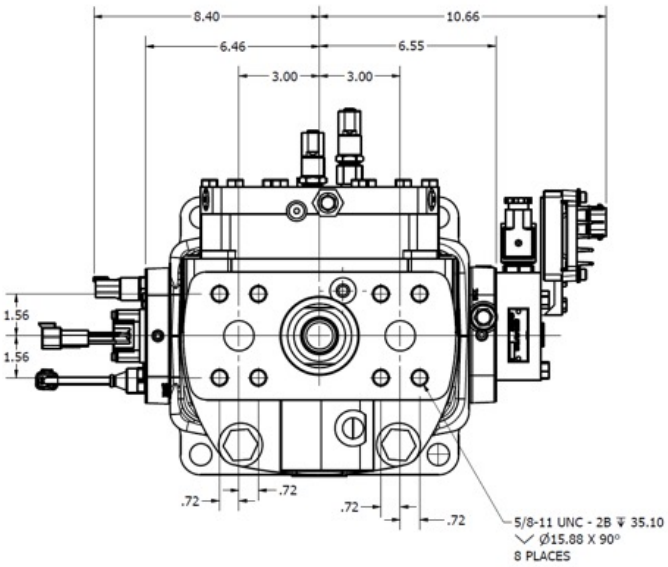


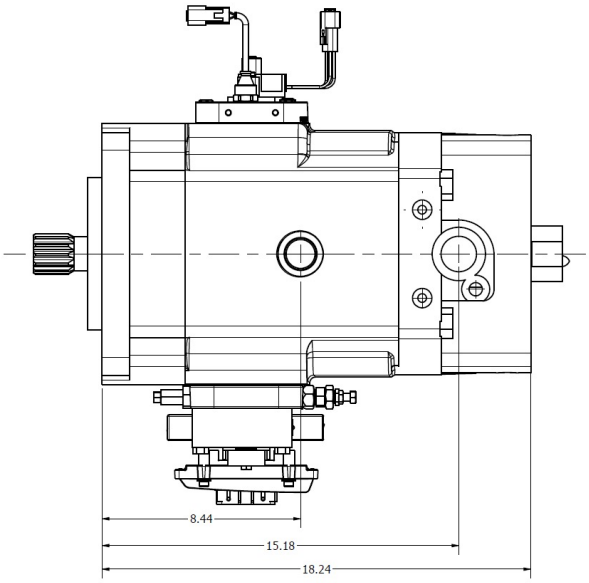




P11/14 Dimensions

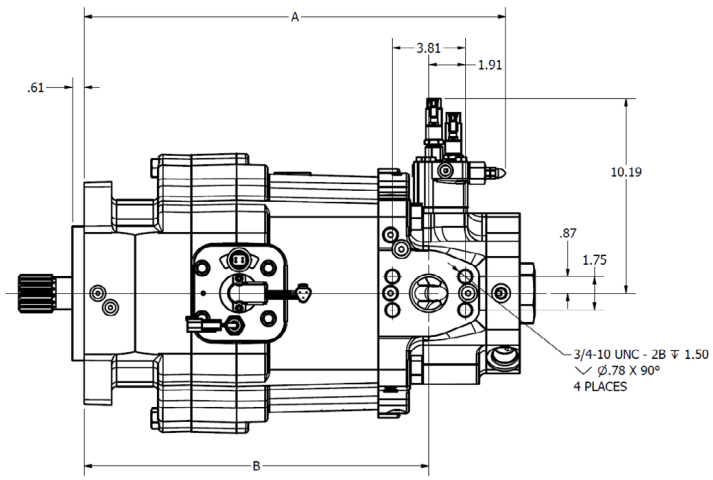


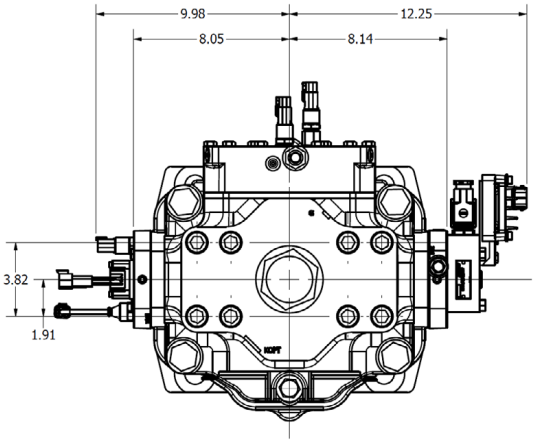


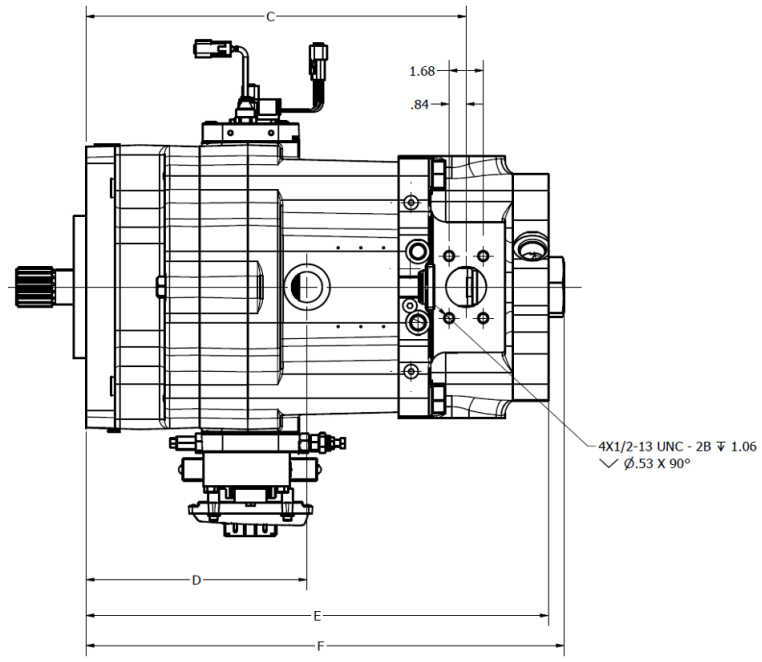


P24/30 Dimensions

Dimension	P24	P30
A	21.95	22.95
B	18.08	19.08
C	18.80	19.80
D	10.92	10.92
E	22.89	23.89
F	23.70	24.70







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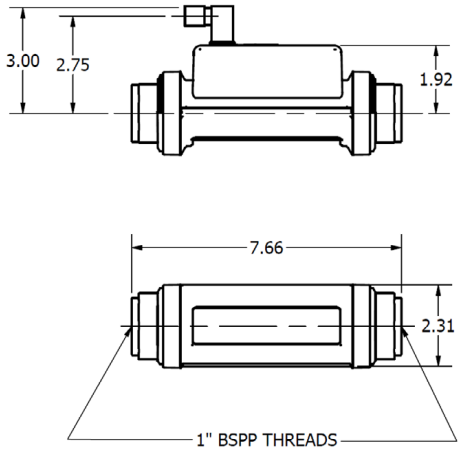
United States

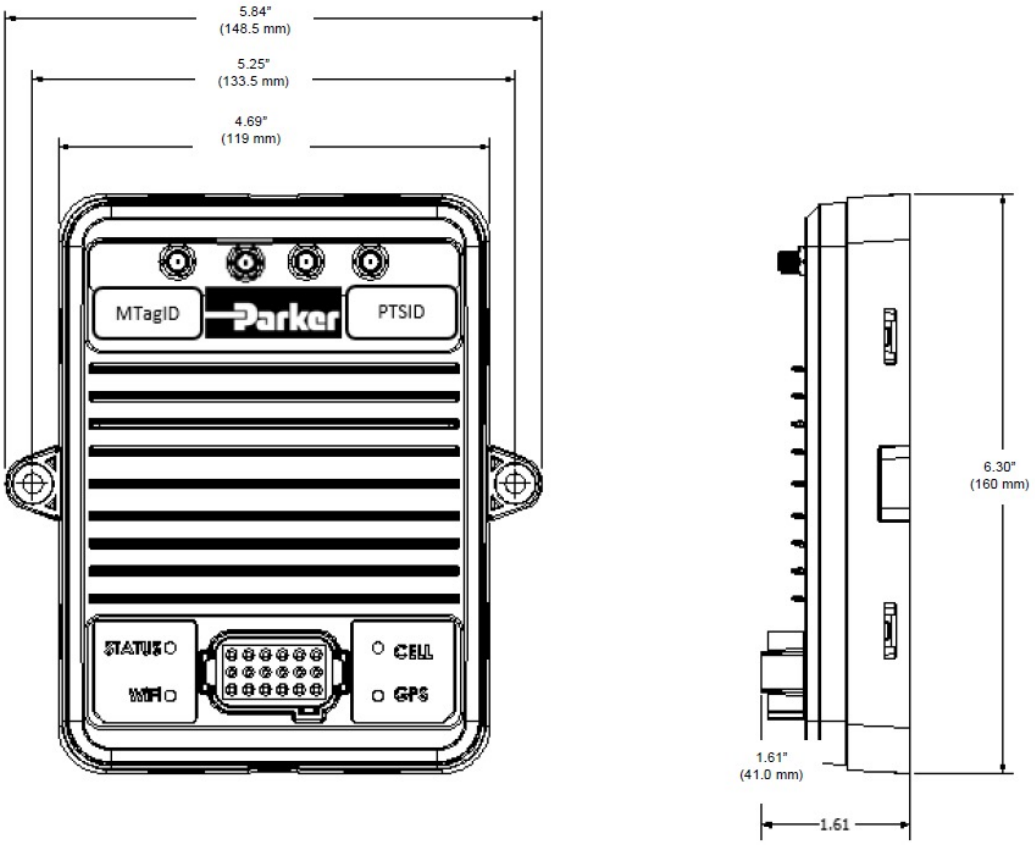
Case Flow/Flowmeter Dimensions

Part Number DFT990



PVSG-IQAN Gateway Dimensions

Part Number 166033



The CAN bus in this system is terminated at each controller. The following table indicates the CAN bus information for each of the system sensors.

Sensor Data PGN Information						
Address	**PGN**	**Name**	**Bit offset**	**Length**	**Offset**	**Resolution**
0	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	49	8	0	1
		Pump_Speed_CAN_OUT	57	8	0	10
1	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	57	8	0	1
		Pump_Speed_CAN_OUT	1	8	0	10
2	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	49	8	0	1
		Pump_Speed_CAN_OUT	57	8	0	10
3	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	57	8	0	1
		Pump_Speed_CAN_OUT	1	8	0	10
4	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	49	8	0	1
5	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	57	8	0	1
		Pump_Speed_CAN_OUT	1	8	0	10
6	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	57	8	0	1
		Pump_Speed_CAN_OUT	1	8	0	10
7	65280	Case_Temp_CAN_OUT	1	8	0	1
		Displacement_CAN_OUT	9	10	-102	0.20
		Case_Press_CAN_OUT	19	8	1	0
		System_Press_CAN_OUT	27	12	0	1.5
		Replin_Press_CAN_OUT	39	10	0	1
		Case_Drain_CAN_OUT	57	8	0	1
		Pump_Speed_CAN_OUT	1	8	0	10

Analytics Model 1						
Address	**PGN**	**Name**	**Bit offset**	**Length**	**Offset**	**Resolution**
0	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
2	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
3	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
4	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
5	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
6	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1
7	65282	Analytics_Response_1	1	2	0	1
		Analytics_Response_2	3	2	0	1
		Analytics_Response_3	5	2	0	1
		Analytics_Response_4	7	2	0	1
		Conf_Analytics_Response_1	9	8	0	1
		Conf_Analytics_Response_2	17	8	0	1
		Conf_Analytics_Response_3	25	8	0	1
		Conf_Analytics_Response_4	33	8	0	1
		ErrCode_Analytics_Response_1	41	16	0	1

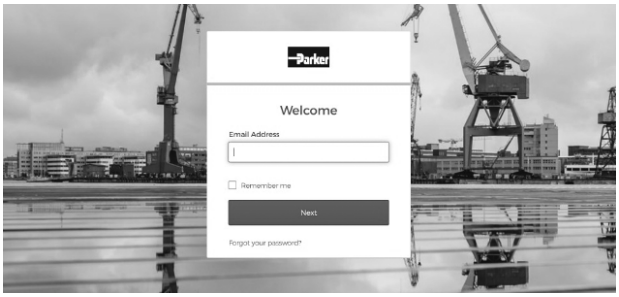
Creating Your Account

To get login credentials, contact your account administrator.

An email/username and password will be sent to your email inbox to create a new user account.

Logging In

Once you have received your login credentials, log in via the web portal at https://parkermobileiot.com/



After the user has logged into their organization, they will be greeted with their fleet overview page.

IQAN Connect Fleet overview page

Creating New Users

In order to start using the Parker Mobile IoT portal, an account administrator should create organizations, users, and assets.

A user is created and assigned a specific role in an organization. These step-by-step instructions show how to create a new user in the system and grant access to Parker Mobile IoT 2.0 portal.

1. Select “Users” from the menu options.
2. Click on “+ User” button on the top right.
3. Complete the user’s details:
    a. First name and Last name
    b. An email address is the username for logging in and accessing the application. Make sure to use a valid email.

Creating New Users Continued...

c. Phone Number North America format (123) 456-7890 Enter: 1234567890

d. Phone Number Int. format +44 (0)1234 123456 Enter: +44 1234123456

e. Organization to which you want to add the new user. This list is searchable. Make sure to assign a home organization to the user, the home organization will be the landing page with visibility to the fleet and other attributes depending on role permissions.

f. User role

4. User will get an email with a temporary password. User needs to reset their password for first login. Temporary password could also be found in the user dialog box.
5. User goes to www.parkermobileiot.com and enters their username (email).
6. User enters their one time password.
7. User confirms the one-time password and sets a new password.
8. User clicks “Change Password” and gets logged to Parker Mobile IoT 2.0.

Creating New Assets

Create new assets by “pairing” the machines or assets with a gateway. Administrators can create and manage the assets on the fleet from the asset page. The asset page lists all assets that belong to the selected organizations in the Org Selector.

1. Click on “Assets” from the navigation menu.
2. Click on “+ Assets” in the Assets page.
3. Select a “Master Tag” from the list of available “whitelisted” master tags. The Master Tag field provides a searchable drop-down list populated with all the Master Tags you have in your organization.
4. Enter an asset name and serial number. The nickname or asset name is a configurable field that can be edited at any time. The serial number is a configurable field that can be edited at any time, we recommend including the Master Tag or machine VIN or identifier in this field for the on-boarding process of the machine.
5. Enter the asset model. We recommend adding the asset model or type in this field, and this field can be edited at any time.
6. The asset will be created in your home organization and can be moved to other organizations later.
7. Select a template from the list. Assets must have an assigned template to be created. The template field is populated by a list of templates in your organization, the template defines the configuration of the signals the gateway will log. It is recommended to reference the knowledge base for more details on how to configure a template.

Additional Information

More information is available in the PVSG-IQAN Users Guide.

Testing

All connections are labeled to ensure the proper sensors are connected to the proper channels. Once all sensors have been installed and the system is powered up, access the user account at parkermobileiot.com. Ensure all sensors are reading properly and that the signal is correct. If there is an error, use following steps to correct the issue:

1. Ensure the proper leads are connected (i.e. replenishment and system pressure transmitters are not switched).
2. Ensure the sensors have been properly installed.
3. If operating a multi-pump system, make sure the proper pump is being accessed in the portal.
4. Ensure the template in parkermobileiot.com is set up properly and matches the CAN addressing information below

If this does not solve the issue, contact technical support.

System Updates

As new analytics features are added, the system will be periodically updated. This will be performed via an over-the-air update (OTA). These updates will be sent out automatically and will be accompanied by an email update that outlines all updated features. All email addresses associated with Gold Cup-IE systems will receive these emails. Any updates that need to be addressed will be highlighted in the update emails and will be added to the next revision of this document.

If your system is not accessible, either by cellular, Wi-Fi, or Ethernet, the update will wait in a cue until the system is reconnected at which point the update will automatically take place.

IQAN

- IQAN Connect Store
- IQAN Connect Landing Page
- Electronic Control Systems IQAN Products Catalog
- IQAN Users Guide
- IQAN Forum

Electronic Motion Controls Division

- Electronic Motion Controls Division Website
- Community Forum

Hydraulic Pump and Power Systems Division

- HPS Division Landing Page
- Distributor Locator
- Literature and Reference Materials

Gold Cup

- Gold Cup Catalog
- Gold Cup Supporting Docs

Contact Parker

- Contact Form

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