

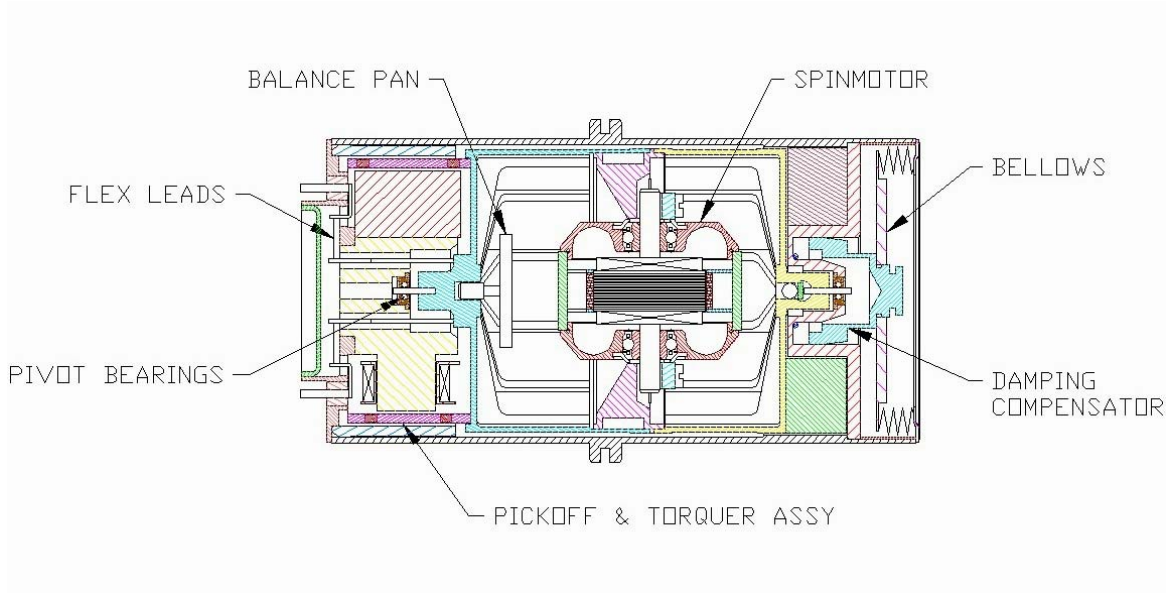
The 446 gyro is an all-welded, hermetic construction, capable of meeting performance requirements in extreme operating environments of vibration, shock, altitude, humidity and temperature. The heart of the gyro consists of a synchronous hysteresis motor whose high reliability is enhanced by preloaded inertial grade ball bearings and advanced lubricants. The spin motor assembly is dynamically balanced using state-of-the-art high precision balancing equipment and then run-in for a minimum of 96 hours to fully channel the lubricants. Instead of jewel bearings that yield a surface contact with the gimbal shaft, miniature high precision ball bearings are used to provide a point contact with the shaft reducing friction and drag. This enables precise alignment and axial positioning of the gimbal within the gyro case and for high performance applications radial play can be limited to 20 millionths of an inch. Dynamic characteristics of the gyro are maintained throughout the temperature range by means of a bellows-operated, variable-orifice, damping compensator. The compensator is a mechanical device and requires no power source. With an internal gimbal balancing device both g-sensitive and g-insensitive drift components can be precisely trimmed after final assembly. All gyros are temperature cycled from -65 deg F to +240 deg F for 48 hours to stress relieve all components and assure maximum drift stability.



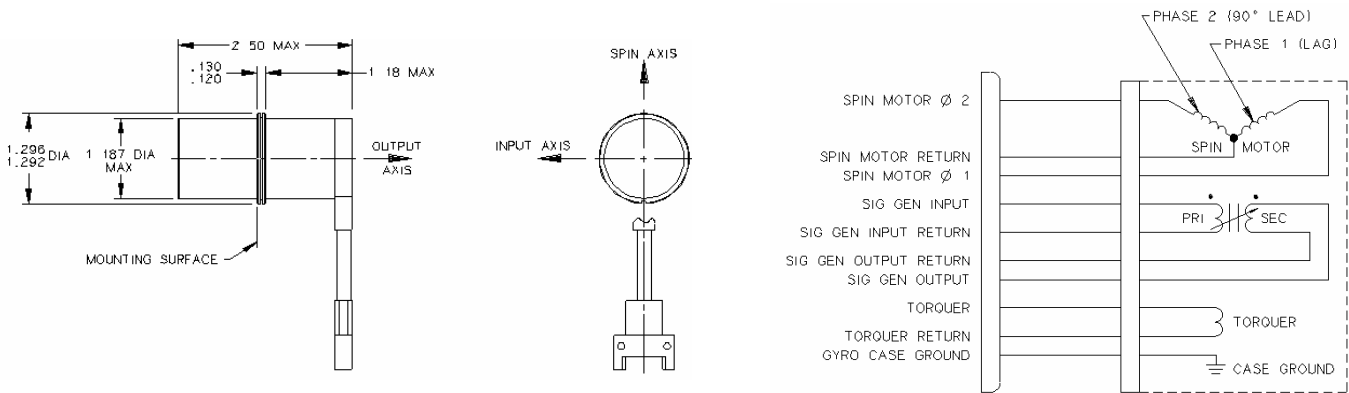
446 Series Applications

Program	Application	Comments
A-4	Aircraft	Radar Stabilization
A-6	Aircraft	Target Recognition
AAQ-15 and AAQ-17	Aircraft	FLIR
F-15	Aircraft	Radar Stabilization
F-16	Aircraft	Radar Stabilization
F-16	Aircraft	Heads Up Display Rate Sensor
F-18	Aircraft	Radar Stabilization
P-3	Aircraft	FLIR
Standard Missile	Missile	Seeker Head
Tow Cobra	Missile	Sight Stabilization
Aegis	Shipboard	Gun Fire Control
Seawolf	Sub	Missile System
M60A3	Tank	Fire Control
K1	Tank	Fire Control
Phalanx	Weapon System	Gun & FLIR Stabilization
V22 Osprey	Aircraft	HNVS Stabilization

Form, Fit and Function replacements for Honeywell GG1111
and BAE GI-G6 Series



Typical 446 Gyro Assembly



Typical 446 Gyro Outline & Schematic



Rate Integrating Gyroscopes

446 Series

USD Part Number		446700	446200	446760	446350-2	446926
NSN		6615010187787	6615010350744	6615010637235	6615010088242	
Honeywell Part Number		GG1111LC01	GG1111LC02	GG1111LC03	GG1111LC04	GG1111LC05
BAE Part Number		67522-301			67683-302	
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	7	7	7.5	7	7
Frequency	Hz	900 sine	900 sine	850 sq.	900 sine	900 sine
Current - Start/phase	amps rms max	0.45	0.45	0.475	0.45	0.45
- Run/phase	amps rms max	0.35	0.35	0.375	0.35	0.35
Power (Total) - Start	watts max	4	4	4	4	4
- Run	watts max	3	3	3	3	3
Angular Momentum	GM-CM ² /sec	14000	14000	13200	14000	14000
Rotor Speed	rps	450	450	425	450	450
SIGNAL GENERATOR:						
Voltage	volts rms	20	20	20	20	20
Frequency	Hz	4000	4000	3400	4000	4000
Current	ma max	40	40	50	40	40
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K,500
Phase Shift - Room	deg	0±5	0±5	0±5	0±5	0±5
- OTR	deg	0±7	0±7	0±7	0±7	0±7
Sensitivity	v/rad nominal	15	15	23	23	23
Null - Room	mv max	10	10	10	10	10
- OTR	mv max	15	15	15	15	15
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	120	120	100	120	120
- Intermittent	deg/sec	180	180	200	180	180
Resistance	ohms @ 20°C	89±13	125±20	160±30	50±8	170±20
Scale Factor	deg/sec/ma	0.6	1	1	0.6	0.6
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	175+35/-87	175+35/-87	290±71	300±60	300±60
Time Constant	millisec	1.5 max	1.5 max	1.2 nom	1.5 max	1.5 max
IA Freedom	± deg	1.0 to 3.0	1.0 to 3.0	0.5 to 2.0	0.5 to 3.0	0.5 to 3.0
Drift Max -						
G - Insensitive	deg/hr	12	12	12	12	12
G - Sensitive	°/hr/GVect	25	25	18	18	18
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.4	0.3	0.3
Damping (Nominal)	dyne-cm-sec	21000	21000	18000	18500	18500
ENVIRONMENTS:						
Operating Temp.	°F	-65 to 200	-65 to 200	-20 to 150	-30 to 160	-30 to 160
Storage Temp.	°F	-80 to 240	-80 to 240	-65 to 200	-65 to 200	-80 to 200
Shock, Duration	g-peak,msec	180,10	180,10	180,10	180,10	180,10
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	20g's sine
20-2000 Hz	g ² /Hz	1	1	1	1	1

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446 Series

USD Part Number		446400	446800	446350-1	446925	446450
NSN			661501199917	6615010088241	6615010685018	
Honeywell Part Number		GG1111LC06	GG1111LC07	GG1111LC08	GG1111LC09	GG1111LC10
BAE Part Number			103122-004	67683-301		
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	7	7	7	7.5	7
Frequency	Hz	900 sine	900 sine	900 sine	850 sq.	900 sine
Current - Start/phase	amps rms max	0.45	0.45	0.45	0.475	0.45
- Run/phase	amps rms max	0.35	0.35	0.35	0.375	0.35
Power (Total) - Start	watts max	4	4	4	4	4
- Run	watts max	3	3	3	3	3
Angular Momentum	GM-CM ² /sec	14000	14000	14000	13200	14000
Rotor Speed	rps	450	450	450	425	450
SIGNAL GENERATOR:						
Voltage	volts rms	7	7	20	20	7
Frequency	Hz	4000	4000	4000	3400	4000
Current	ma max	115	125	40	50	125
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K,500
Phase Shift - Room	deg	0±5	0±5	0±5	0±5	0±5
- OTR	deg	0±5	0±7	0±7	0±7	0±7
Sensitivity	v/rad nominal	27	15	23	23	23
Null - Room	mv max	10	10	10	10	15
- OTR	mv max	10	15	15	15	20
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	30	120	120	100	120
- Intermittent	deg/sec	180	180	180	200	180
Resistance	ohms @ 20°C	50±8	14±2	50±8	160±20	50±8
Scale Factor	deg/sec/ma	0.6	0.39	0.6	1	0.6
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	0.02 max	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	350±35	175+35/-87	300±60	290±71	300±60
Time Constant	millisec	1.5 max	1.5 max	1.5 max	1.2 nom	1.5 max
IA Freedom	± deg	0.5 to 3.0	1.0 to 3.0	0.5 to 3.0	2.0 min	0.5 to 3.0
Drift Max -						
G - Insensitive	deg/hr	5	12	12	12	12
G - Sensitive	°/hr/GVect	10	25	18	18	18
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.3	0.4	0.3
Damping (Nominal)	dyne-cm-sec	19000	21000	18500	18000	18000
ENVIRONMENTS:						
Operating Temp.	°F	180 ± 2 Htd.	-65 to 220	-30 to 160	-20 to 190	-30 to 160
Storage Temp.	°F	-80 to 200	-65 to 220	-65 to 200	-65 to 200	-80 to 200
Shock, Duration	g-peak,msec	180,10	180,10	180,10	180,10	180,10
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	20g's sine
20-2000 Hz	g ² /Hz	1	1	1	1	1

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446 Series

USD Part Number		446450-1	446737	446927	446928	446929
NSN						
Honeywell Part Number		GG1111LC10A		GG1111LC11	GG1111LC12	GG1111LC13
BAE Part Number			642AS2754-2			
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	7	28	7	7	26
Frequency	Hz	900 sine	400 sine	900 sine	900 sine	800 sine
Current - Start/phase	amps rms max	0.45	0.15	0.6	0.45	0.25
- Run/phase	amps rms max	0.35	0.125	0.4	0.35	0.2
Power (Total) - Start	watts max	4	4	5	4	5
- Run	watts max	3	3	3.5	3	3.5
Angular Momentum	GM-CM ² /sec	14000	18000	14000	14000	25000
Rotor Speed	rps	450	400	450	450	400
SIGNAL GENERATOR:						
Voltage	volts rms	7	8	20	20	10
Frequency	Hz	4000	4000	4000	4000	4000
Current	ma max	125	125	40	40	70
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K,500
Phase Shift - Room	deg	0±5	0±7	0±10	0±5	0±5
- OTR	deg	0±7	0±10	0±12	0±5	0±7
Sensitivity	v/rad nominal	23	23	23	23	24
Null - Room	mv max	15	15	15	10	15
- OTR	mv max	20	20	20	10	20
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	120	120	90	30	10
- Intermittent	deg/sec	180	180	-	180	80
Resistance	ohms @ 20°C	50±8	50±8	50±8	170±20	174±43
Scale Factor	deg/sec/ma	0.6	0.6	0.6	0.6	0.8
Temp. Dependence Max	%/°F	-0.01	-0.01	±.0025	-0.01	±.005
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	0.02 max	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	300±60	300±60	300±60	350±35	436+87/-218
Time Constant	millisec	1.5 max	1.5	1.5 max	1.5 max	1.3 nom
IA Freedom	± deg	0.5 to 3.0	3.0	0.5 to 3.0	0.5 to 3.0	2.0 min
Drift Max -						
G - Insensitive	deg/hr	12	12	12	5	10
G - Sensitive	°/hr/GVect	18	18	10	10	15
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.3	0.3	0.3
Damping (Nominal)	dyne-cm-sec	18000	18000	18500	17000	24000
ENVIRONMENTS:						
Operating Temp.	°F	-30 to 160	-30 to 160	-40 to 160	180 ± 2 Htd.	-15 to 194
Storage Temp.	°F	-80 to 200	-80 to 160	-65 to 190	-80 to 203	-65 to 212
Shock, Duration	g-peak,msec	180,10	180,10	180,10	180,10	150,11
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	25g's sine
20-2000 Hz	g ² /Hz	1	1	1	1	0.2



Rate Integrating Gyroscopes

446 Series

USD Part Number		446930	446931	446932	446735	446725
NSN					6615012608214	
Honeywell Part Number		GG1111LC14	GG1111LC15	GG1111LC16	GG1111LC22	GG1111LC22A
BAE Part Number						
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	15	7	8	7	7
Frequency	Hz	800 sine	900 sine	900 sine	900 sine	900 sine
Current - Start/phase	amps rms max	0.16	0.6	0.6	0.57	0.57
- Run/phase	amps rms max	0.125	0.4	0.45	0.4	0.4
Power (Total) - Start	watts max	4	4	4	4	5
- Run	watts max	3	3	3	3	3
Angular Momentum	GM-CM ² /sec	12400	14000	14000	14000	14000
Rotor Speed	rps	400	450	450	450	450
SIGNAL GENERATOR:						
Voltage	volts rms	7	20	8	8	8
Frequency	Hz	4000	4000	4000	9000	9000
Current	ma max	125	40	145	10	10
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K
Phase Shift - Room	deg	0±9	0±5	-	0±7	0±7
- OTR	deg	-	0±7	0±6	-	-
Sensitivity	v/rad nominal	15	23	31	8.8	17
Null - Room	mv max	10	-	-	6	6
- OTR	mv max	15	20	10	15	15
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	100	115	160	100	60
- Intermittent	deg/sec	230	-	-	180	75
Resistance	ohms @ 20°C	15±3	50±8	110±20	66 max	80 max
Scale Factor	deg/sec/ma	0.44	0.6	1.1	0.6	0.6
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	82±20	300±60	250±20	73±11	140±21
Time Constant	millisec	0.6 nom	1.5 max	1.5 max	1.0 max	1.0 nom
IA Freedom	± deg	1.0 min	0.5 to 3.0	2.8 min	1.0 to 3.0	1.0 to 3.0
Drift Max -						
G - Insensitive	deg/hr	8	12	25	12	15
G - Sensitive	°/hr/GVect	18	18	20	15	15
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.5	0.3	0.5
Damping (Nominal)	dyne-cm-sec	40000	18500	30000	32500	32500
ENVIRONMENTS:						
Operating Temp.	°F	-20 to 150	-25 to 125	-25 to 165	-54 to 165	-54 to 165
Storage Temp.	°F	-65 to 220	-65 to 160	-65 to 185	-80 to 185	-80 to 185
Shock, Duration	g-peak,msec	180,10	180,10	50,11	180,10	180,10
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	15g's sine	20g's sine	20g's sine
20-2000 Hz	g ² /Hz	1	1	0.2	1	1

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446 Series

USD Part Number		446230	446231	446227	446232	446233
NSN				6615011958335		
Honeywell Part Number		GG1111AJ01	GG1111AJ03	GG1111AJ04	GG1111AJ05	GG1111AJ06
BAE Part Number						
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	26	7	26	7	26
Frequency	Hz	800 sine	800 sq.	400 sine	800 sine	800 sine
Current - Start/phase	amps rms max	0.18	0.6	0.15	0.45	0.18
- Run/phase	amps rms max	0.16	0.45	0.09	0.35	0.14
Power (Total) - Start	watts max	4	5	4	4	4
- Run	watts max	3	4	3	3	3
Angular Momentum	GM-CM ² /sec	25000	12400	18000	12400	25000
Rotor Speed	rps	400	400	400	450	400
SIGNAL GENERATOR:						
Voltage	volts rms	5	5	10	5	5
Frequency	Hz	3200	12800	10000	12800	3200
Current	ma max	170	6	10.7	6	170
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K,500
Phase Shift - Room	deg	0±5	-	0±7	0±7	0±5
- OTR	deg	0±7	-3±7	0±7	0±7	0±7
Sensitivity	v/rad nominal	26	6	12	6	26
Null - Room	mv max	6	7	6	7	6
- OTR	mv max	6	12	6	7	6
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	80	100	150	100	80
- Intermittent	deg/sec	150	-	360	175	150
Resistance	ohms @ 20°C	174±26	89±12	55±9	89±14	174±26
Scale Factor	deg/sec/ma	0.75	1.1	0.6	1.1	0.75
Temp. Dependence Max	%/°F	-0.01	-0.01	0.0025	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	700+70/-58	68±6.8	130±26	68±17	280±105
Time Constant	millisec	2.4 max	1.3 nom	1.0±.25	2.0 max	1.2 max
IA Freedom	± deg	1.5 min	0.35 min	0.5 min	0.5 min	2.5 min
Drift Max -						
G - Insensitive	deg/hr	10	58 uncomp	12	38 uncomp	12
G - Sensitive	°/hr/GVect	15	17	10	12	18
G ² - Sensitive	°/hr/g ² pk	0.3	0.2	0.3	0.2	0.3
Damping (Nominal)	dyne-cm-sec	16500	19000	29000	19000	33000
ENVIRONMENTS:						
Operating Temp.	°F	-65 to 165	185 ± 5 Htd	40 to 160	105 ± 3 Htd.	0 to 140
Storage Temp.	°F	-80 to 185	-32 to 190	-65 to 220	-32 to 165	-65 to 220
Shock, Duration	g-peak,msec	100,11	180,10	100,11	180,10	100,11
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	20g's sine
20-2000 Hz	g ² /Hz	0.6	1	0.6	1	0.6



Rate Integrating Gyroscopes

446 Series

USD Part Number		446226	446234	446228	446235	446236
NSN		6615010716610		6615012633649		6615011020748
Honeywell Part Number		GG1111AJ07	GG1111AJ08	GG1111AJ10	GG1111AJ11	GG1111AJ12
BAE Part Number						
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	26	26	10(3 phase)	26	7
Frequency	Hz	800 sine	800 sine	400 sine	800 sine	800 sq.
Current - Start/phase	amps rms max	0.18	0.18	0.3	0.18	0.6
- Run/phase	amps rms max	0.16	0.16	0.2	0.16	0.45
Power (Total) - Start	watts max	4	4.5	4	4	5
- Run	watts max	3	3.5	3	3	4
Angular Momentum	GM-CM ² /sec	12400	24000	8500	12400	8000
Rotor Speed	rps	400	400	400	400	400
SIGNAL GENERATOR:						
Voltage	volts rms	5	5	2.4	8	5
Frequency	Hz	12800	3200	1600	4000	12800
Current	ma max	55	165 nom.	100 nom.	150 nom.	6
Load	ohms, Pf max	10K,500	10K,500	10K,500	10K,500	10K,500
Phase Shift - Room	deg	0±7	-	-	-	-
- OTR	deg	0±7	0±7	22±10	0±7	-3±7
Sensitivity	v/rad nominal	24	25	9	36	6
Null - Room	mv max	10	-	-	-	7
- OTR	mv max	10	7	12	10	12
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	120	100	60	180	350
- Intermittent	deg/sec	180	150	-	500	360
Resistance	ohms @ 20°C	48±8	174±30	15±3	55±10	69±12
Scale Factor	deg/sec/ma	0.75	0.75	0.573	0.86	1.75
Temp. Dependence Max	%/°F	±.003	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	220+55/-105	350±53	110±30	330+66/-132	46±12
Time Constant	millisec	1.1 nom	1.0 nom	2.5 nom	1.5 max	1.6 nom
IA Freedom	± deg	1.0 min	0.5 min	6 min	0.5 min	0.7 min
Drift Max -						
G - Insensitive	deg/hr	100 uncomp	5	40	50 uncomp	75 uncomp
G - Sensitive	°/hr/GVect	43	10	60	20	30
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.3	0.3	0.3
Damping (Nominal)	dyne-cm-sec	23000	30000	12000	23500	16000
ENVIRONMENTS:						
Operating Temp.	°F	-40 to 195	190 ± 2 Htd	0 to 190	-40 to 195	-40 to 160
Storage Temp.	°F	-65 to 220	-65 to 165	-65 to 220	-65 to 220	-65 to 220
Shock, Duration	g-peak,msec	180,10	100,11	180,10	180,10	180,10
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	25g's sine
20-2000 Hz	g ² /Hz	1	0.6	1	1	1

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446 Series

USD Part Number		446225	446237	446238	446736	446325
NSN						6615011594340
Honeywell Part Number		GG1111AJ13	GG1111AK01	GG1111AL01	GG1111AM02	GG1111BB01
BAE Part Number						
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	26	26	26	7	12.5
Frequency	Hz	800 sine	400 sine	1600 sine	900	1498
Current - Start/phase	amps rms max	0.14	0.15	0.22	0.45	3.0
- Run/phase	amps rms max	0.12	0.09	0.18	0.35	0.3
Power (Total) - Start	watts max	4	4	4	6.5	
- Run	watts max	3	3	3	4	
Angular Momentum	GM-CM ² /sec	12400	18000	48000	14000	40000
Rotor Speed	rps	400	400	800	450	500
SIGNAL GENERATOR:						
Voltage	volts rms	5	8	5	8	5
Frequency	Hz	12800	4000	12800	9000	4800
Current	ma max	55	165	5	10	10
Load	ohms, Pf max	10K	10K,500	10K,500	10K	10K
Phase Shift - Room	deg		5±7	-	0±7	0±7
- OTR	deg	-3±7	5±7	-3±7	0±7	0±7
Sensitivity	v/rad nominal	15	36	6	17	12
Null - Room	mv max	10	7	-	6	6
- OTR	mv max	10	7	12	6	6
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	60	125	60	60	40
- Intermittent	deg/sec	75	200	120	75	150
Resistance	ohms @ 20°C	48±8	50±15	55±9	110 max	35 max
Scale Factor	deg/sec/ma	0.75	0.6	0.25	0.5	0.33
Temp. Dependence Max	%/°F	±.003	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.3	<0.3
GYRO PERFORMANCE:						
Transfer Function	mv/deg	210±35	312±90	185±20	140±7	96±17
Time Constant	millisec	1.1 nom	1.25 max	1.5 max	1.0 max	0.6±0.3
IA Freedom	± deg	1.0 min	1.0 min	0.16 min	1.5	2.0 min
Drift Max -						
G - Insensitive	deg/hr	15	40	5	8	30
G - Sensitive	°/hr/GVect	20	40	5	10	20
G ² - Sensitive	°/hr/g ² pk	0.5	4	0.15	0.5	0.2
Damping (Nominal)	dyne-cm-sec	23000	36000	27000	32500	36000
ENVIRONMENTS:						
Operating Temp.	°F	-40 to 160	-65 to 200	185 ± 2 Htd.	0 to 140	140±10 Htd
Storage Temp.	°F	-65 to 220	-65 to 220	-30 to 200	-80 to 185	-40 to 160
Shock, Duration	g-peak,msec	180,10	100,11	100,11	180,10	40,11
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	30g's sine	20g's sine	2g's sine
20-2000 Hz	g ² /Hz	1	0.6	0.6	1	0.2

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Rate Integrating Gyroscopes

446 Series

USD Part Number		446182	446900	446000	446275	446276
NSN				6615010682150		
Honeywell Part Number		GG1111BC02	GG1111BD01	GG1163AA01		
BAE Part Number						
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	11.5	7	6.5	7	7
Frequency	Hz	1488 sine	900 sine	900 sine	1200 sine	800 sine
Current - Start/phase	amps rms max	1.600	0.45	0.425	0.9	0.9
- Run/phase	amps rms max	0.300	0.35	0.325	0.5	0.5
Power (Total) - Start	watts max		4	4.0	15	15
- Run	watts max		3	3.0	3	3
Angular Momentum	GM-CM ² /sec	39000	14000	9000	14000	9300
Rotor Speed	rps	496	450	450	600	400
SIGNAL GENERATOR:						
Voltage	volts rms	5	7	29.5	5	5
Frequency	Hz	5950	4000	900	12800	12800
Current	ma max	14	125	70	6	6
Load	ohms, Pf max	10K,2200	10K,500	10K,.5	10K	10K
Phase Shift - Room	deg	0±7	0±5	0±5	0±10	0±10
- OTR	deg	0±10	0±7	0±7	0±10	0±10
Sensitivity	v/rad nominal	3.2 to 21	15	18	6.6	5.5
Null - Room	mv max	10	10	10	3	3
- OTR	mv max	15	15	15	6	6
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	60	120	120	200	200
- Intermittent	deg/sec	150	180	180	450	500
Resistance	ohms @ 20°C	35	14±2	86	110	150
Scale Factor	deg/sec/ma	0.75	0.39	1.7	1.1	2.48
Temp. Dependence Max	%/°F	-0.015	-0.01	-0.01	-0.01	-0.02
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.03	<0.05
GYRO PERFORMANCE:						
Transfer Function	mv/deg	2.5 to 8.0	175+35/-87	280+/-80	50±15	23±8
Time Constant	millisec	2.0 max	1.5 max	2.6 nom	2.0 max	2.0 max
IA Freedom	± deg	15 to 150	1.0 to 3.0	2.6 nom	0.7 min	1.5 min
Drift Max -						
G - Insensitive	deg/hr	75	12	20	30	35
G - Sensitive	°/hr/GVect	15	25	30	15	20
G ² - Sensitive	°/hr/g ² pk	0.4	0.3	1.6	0.3	0.5
Damping (Nominal)	dyne-cm-sec	16500	21000	10000	32000	32000
ENVIRONMENTS:						
Operating Temp.	°F	40 to 140	-65 to 220	-65 to 160	-4 to 168	-40 to 168
Storage Temp.	°F	0 to 160	-65 to 220	-80 to 203	-30 to 195	-40 to 195
Shock, Duration	g-peak,msec	100,6	180,10	30, 11	50, 11	100, 11
Vibration 20-2000 Hz	g-peak	20g's sine	20g's sine	20g's sine	20g's sine	20g's sine
20-2000 Hz	g ² /Hz	0.8	1	1	1	1



Rate Integrating Gyroscopes

446 Series

USD Part Number		446241	446242	446243	446244	446245
NSN						6615011007372
Honeywell Part Number						
BAE Part Number		GIG6-310C	GIG6-321A	GIG6-321C	GIG6-321E	GIG6-321F
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	27.4	7	7	7	7
Frequency	Hz	400	900	800	900	900
Current - Start/phase	amps rms max		0.600			
- Run/phase	amps rms max		0.400			
Power (Total) - Start	watts max	4.5		5.0	7	5
- Run	watts max	3.5		4.0	4	3
Angular Momentum	GM-CM ² /sec	9300	14000	9300	14000	14000
Rotor Speed	rps	400	450	400	450	450
SIGNAL GENERATOR:						
Voltage	volts rms	10	20	8	8	8
Frequency	Hz	4800	4000	9600	9000	9000
Load	ohms, Pf max	10K	10K, 500	10K	10K	10K
Phase Shift - Room	deg	0±7	0±7	0±7	0±5	0±7
- OTR	deg	0±10	0±10	0±10	0±10	0±10
Sensitivity	v/rad nominal	24	24	19	8	8
Null - Room	mv max	10	10	10	6	6
- OTR	mv max	15	15	15	12	12
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	75	60	75	60	60
- Intermittent	deg/sec	200	90	100	75	75
Resistance	ohms @ 20°C	145 max	108 max	108 max	108 max	130 max
Scale Factor	deg/sec/ma	1	0.6	0.6	0.8	0.6
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.2	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	201	175	209	140	140
Time Constant	millisec	1.0 max	0.6 nom	0.6 nom	0.6 nom	1.0 nom
IA Freedom	± deg	2.0 to 3.0	2.0 to 3.0	2.0 to 3.0	2.0 to 3.0	2.0 to 3.0
Drift Max -						
G - Insensitive	deg/hr	27	12	15	10	15
G - Sensitive	°/hr/GVect	25	18	15	10	15
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.3	0.3	0.3
ENVIRONMENTS:						
Operating Temp.	°F	-50 to 240	-50 to 220	-67 to 150	-54 to 150	-54 to 150
Shock, Duration	g-peak,msec	100,11	80,11	80, 11	80, 11	80, 11
Vibration 20-2000 Hz	g-peak	38	10	10	10	10
20-2000 Hz	g ² /Hz	1	1	1	1	1



Rate Integrating Gyroscopes

446 Series

USD Part Number		446246	446247	446248	446249	446264
NSN						
Honeywell Part Number						
BAE Part Number		GIG6-321G	GIG6-321H	GIG6-321M	GIG6-326C	GIG6-329B
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	7	7	7	15	13
Frequency	Hz	787.5	900	875	1250	1498
Current - Start/phase	amps rms max					2
- Run/phase	amps rms max					0.3
Power (Total) - Start	watts max	7	7	6.5	6	
- Run	watts max	6	4	5	4	
Angular Momentum	GM-CM ² /sec	9000	14000	13500	13000	40000
Rotor Speed	rps	394	450	438	417	499
SIGNAL GENERATOR:						
Voltage	volts rms	8	8	7	9	5
Frequency	Hz	3937	9000	4375	3125	4800
Load	ohms, Pf max	10K	10K	10K	20K	10K
Phase Shift - Room	deg	0±10	0±5	0±5	0±10	0±7
- OTR	deg	0±12	0±8	0±8	0±15	0±10
Sensitivity	v/rad nominal	10	8	9	25	12
Null - Room	mv max	10	6	4	6	6
- OTR	mv max	15	12	8	10	10
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	60	60	80	10	40
- Intermittent	deg/sec	75	75	150	200	150
Resistance	ohms @ 20°C	108 max	125 max	121 max	350 max	35 max
Scale Factor	deg/sec/ma	0.8	0.6	0.75	1.75	0.33
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.1	<0.1	<0.15	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	262	140	175	262	96
Time Constant	millisec	1.2 nom	1.0 nom	0.9 nom	2.0 max	1.3
IA Freedom	± deg	2 to 3	2 to 3	1 to 3	1 to 3	1 to 2
Drift Max -						
G - Insensitive	deg/hr	40	10	12	30	15
G - Sensitive	°/hr/GVect	12	15	12	15	10
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.2	0.2	0.2
ENVIRONMENTS:						
Operating Temp.	°F	-20 to 140	-65 to 167	-40 to 167	120 to 185	130 to 150 Htd
Shock, Duration	g-peak,msec	80,11	80,11	80,11	85, 5	40,11
Vibration 20-2000 Hz	g-peak	10	10	10	12	6
20-2000 Hz	g ² /Hz	1	1	1	1	1



Rate Integrating Gyroscopes 446 Series

USD Part Number		446265	446266	446267	446268	446269
NSN						
Honeywell Part Number						
BAE Part Number		GIG6-342A	GIG6-342C	GIG6-344B	GIG6-346A	GIG6-351A
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	26	26	20	12	6.5
Frequency	Hz	400	400	1563	1600	893
Current - Start/phase	amps rms max					0.600
- Run/phase	amps rms max					0.400
Power (Total) - Start	watts max	3.5	3.5	6	6	
- Run	watts max	3	3	2	1	
Angular Momentum	GM-CM ² /sec	9000	9000	42000	42500	24000
Rotor Speed	rps	400	400	521	533	447
SIGNAL GENERATOR:						
Voltage	volts rms	4.5	4.5	5	8	7
Frequency	Hz	400	400	4800	4800	4465
Load	ohms, Pf max	10K	10K	10K	10K	10K
Phase Shift - Room	deg	0±10	0±10	0±7	0±10	0±10
- OTR	deg	0±15	0±15	0±10	0±14	0±14
Sensitivity	v/rad nominal	3.6	3.6	13	19	16
Null - Room	mv max	10	10	6	5	15
- OTR	mv max	15	15	10	8	15
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	75	60	175	60	60
- Intermittent	deg/sec	150	120	185	100	120
Resistance	ohms @ 20°C	85 max	28 max	425 max	45 max	58 max
Scale Factor	deg/sec/ma	0.63	0.69	2.7	0.35	0.62
Temp. Dependence Max	%/°F	-0.01	-0.01	-0.01	-0.01	-0.01
Linearity (capability)	% F.S.	<0.1	<0.3	<0.2	<0.2	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	59	59	70	332	175
Time Constant	millisec	1.25	1.25	1.3	0.75	1.0
IA Freedom	± deg	2	2	1 to 2	1 to 2	1 to 2
Drift Max -						
G - Insensitive	deg/hr	25	25	50	10	20
G - Sensitive	°/hr/GVect	25	25	15	10	30
G ² - Sensitive	°/hr/g ² pk	0.3	0.3	0.2	0.2	0.2
ENVIRONMENTS:						
Operating Temp.	°F	-40 to 160	-30 to 160	40 to 185	0 to 120	140 to 160 Htd
Shock, Duration	g-peak,msec	50, 11	30, 11	50, 11	100, 11	
Vibration 20-2000 Hz	g-peak	22	15	35	15	
20-2000 Hz	g ² /Hz	1	1	1	1	



Rate Integrating Gyroscopes

446 Series

USD Part Number		446270	446271	446272	446273	446274
NSN						
Honeywell Part Number						
BAE Part Number		GIG6-353B	GIG6-650B	GIG6-650E	GIG6-651A	GIG6-651B
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	16.8	26	26	26	30
Frequency	Hz	400	400	400	800	400
Current - Start/phase	amps rms max					
- Run/phase	amps rms max					
Power (Total) - Start	watts max	5	3.8	3.8	5	5
- Run	watts max	4	3.5	3.5	4	4
Angular Momentum	GM-CM ² /sec	9000	9000	9000	13000	9000
Rotor Speed	rps	400	400	400	400	400
SIGNAL GENERATOR:						
Voltage	volts rms	12	8	8	8	8
Frequency	Hz	6567	4000	5000	4800	4800
Load	ohms, Pf max	10K	10K	10K	10K	10K
Phase Shift - Room	deg	0±7	0±5	0±7	0±7	0±7
- OTR	deg	0±10	0±10	0±10	0±10	0±10
Sensitivity	v/rad nominal	30	29.5	23	19	19
Null - Room	mv max	20	10	5	5	5
- OTR	mv max	25	15	10	10	10
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	200	125	105	105	105
- Intermittent	deg/sec	250	200	200	200	200
Resistance	ohms @ 20°C	285 max	50 max	50 max	45 max	108 max
Scale Factor	deg/sec/ma	2.38	0.6	0.6	0.4	1.25
Temp. Dependence Max	%/°F	-0.02	-0.02	-0.02	-0.02	-0.02
Linearity (capability)	% F.S.	<0.3	<0.1	<0.1	<0.1	<0.1
GYRO PERFORMANCE:						
Transfer Function	mv/deg	173	312	314	244	332
Time Constant	millisec	0.5	1.0	1.0	1.25	1.25
IA Freedom	± deg	1 to 3	0.6 to 1.2	2 to 3	2 to 3	2 to 3
Drift Max -						
G - Insensitive	deg/hr	30	30	30	30	30
G - Sensitive	°/hr/GVect	25	25	25	25	25
G ² - Sensitive	°/hr/g ² pk	0.3	0.2	0.2	0.2	0.2
ENVIRONMENTS:						
Operating Temp.	°F	40 to 225	-50 to 212	-25 to 165	-50 to 200	-50 to 200
Shock, Duration	g-peak,msec	30, 11	50, 11	50, 11	100, 11	100, 11
Vibration 20-2000 Hz	g-peak	10	20	20	20	20
20-2000 Hz	g ² /Hz	1	1	1	1	1



Rate Integrating Gyroscopes

446 Series

USD Part Number		446291	446292			
NSN						
Honeywell Part Number						
BAE Part Number		GIG6-653A	GIG6-654A			
PARAMETER	UNIT					
SPINMOTOR:						
Voltage (2 phase)	volts rms	26	19			
Frequency	Hz	400	400			
Current - Start/phase	amps rms max					
- Run/phase	amps rms max					
Power (Total) - Start	watts max	5	5			
- Run	watts max	4	3.5			
Angular Momentum	GM-CM ² /sec	9000	9000			
Rotor Speed	rps	400	400			
SIGNAL GENERATOR:						
Voltage	volts rms	8	10			
Frequency	Hz	4000	3840			
Load	ohms, Pf max	10K	1K			
Phase Shift - Room	deg	0±10	0±5			
- OTR	deg	0±15	0±7			
Sensitivity	v/rad nominal	29.5	12.3			
Null - Room	mv max	10	10			
- OTR	mv max	15	15			
TORQUE GENERATOR:						
Max Rate - Continuous	deg/sec	75	200			
- Intermittent	deg/sec	125	250			
Resistance	ohms @ 20°C	60 max	230 max			
Scale Factor	deg/sec/ma	0.35	2.0			
Temp. Dependence Max	%/°F	-0.2	-0.2			
Linearity (capability)	% F.S.	<0.1	<0.2			
GYRO PERFORMANCE:						
Transfer Function	mv/deg	314	44			
Time Constant	millisec	1.1	0.5			
IA Freedom	± deg	1 to 2	1 to 2			
Drift Max -						
G - Insensitive	deg/hr	30	30			
G - Sensitive	°/hr/GVect	25	25			
G ² - Sensitive	°/hr/g ² pk	0.2	0.2			
ENVIRONMENTS:						
Operating Temp.	°F	-50 to 200	32 to 125			
Shock, Duration	g-peak,msec	100, 11	50, 11			
Vibration 20-2000 Hz	g-peak	30	20			
20-2000 Hz	g ² /Hz	1	1			