INTRODUCTION

The following instructions apply to assembling motor mounts to Venus, Atlas, Luna, Earth, Polaris, Delta, Neptune, Neptune Plus, Orion Plus, Saturn Plus, Titan Plus, and Jupiter Plus Planetgear™ speed reducers. Instructions for Orion Plus, Titan Plus, and Jupiter Plus are also valid for Orion, Saturn, Titan, and Jupiter, respectively. These motor mounts are drilled for standard T-frame and IEC motors. Reference Table 2 (Page 4) for motor frame size capabilities, motor mount part numbers, and possible motor mount orientations.

Note: Each motor mount plate is designed for the motor frame sizes as shown in Table 2. Consult Rexnord for any reducer/motor combination that is not listed.

MOTOR MOUNT ORIENTATION

Motor mounts can be assembled to a reducer with several orientation possibilities. All allowable orientations are listed on Table 2. Reference Planetgear 7000 drawing number 18860026 (Page 6) for orientation details.

Note: Modifications to the output side mounting bracket may be required if the motor is not mounted in the 12 o'clock position. Reference Planetgear 7000 drawing number 18860026 for modifications.

ASSEMBLY OF MOTOR MOUNT

(No Fan and Fan Shroud Requirements)

1. From Table 1 determine the motor mount, orientation and part numbers for the appropriate motor/reducer combination.
2. Remove the appropriate bolts from both the input and output shaft assemblies where the mounting brackets are to go.
3. Position and attach the mounting brackets onto the reducer, reference Figure 2. It is necessary to use bolts that are 1/2" (13 mm) longer than the original bolts removed from the reducer. This is to account for the thickness of the mounting bracket. Reference Table 1 (Page 3) for recommended bolt torques.
4. Position the four tapered socket head cap screws into the mounting plate and hold in place with 1 nut each. Tighten nuts. Reference Figure 1.

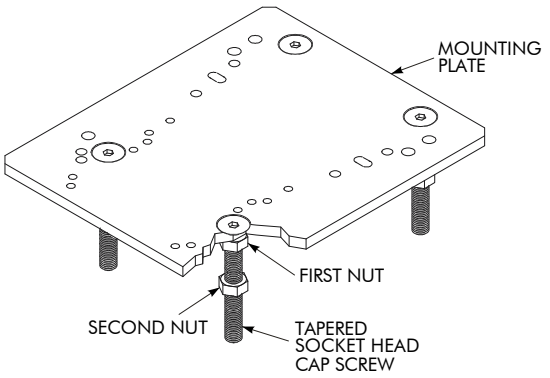


Figure 1 Mounting Plate Assembly

5. Attach a second nut onto each cap screw so that each nut is equal distance from the first nut on the cap screw. Reference Figure 1.
6. Place the mounting plate/cap screw assembly onto the mounting brackets of the reducer so that the part number that is stamped on the plate is towards the output shaft end of the reducer.
7. Attach the third nut loosely onto each cap screw to hold the mounting plate/cap screw assembly onto mounting brackets. Reference Figure 2.

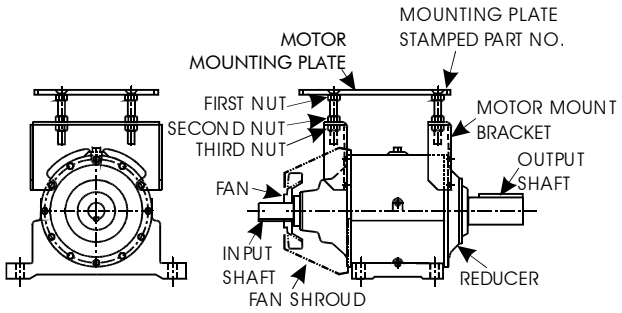


Figure 2 Top Motor Mount Assembly to Reducer

8. Mount motor to mounting plate and tighten motor bolts (use Grade 5 bolts or equivalent). Reference Table 1 for recommended bolt torques.
9. Mount sheaves and install belts.
10. Adjust the belt tension by loosening or tightening the nuts located just above the mounting bracket. Refer to belt manufacturer for correct belt tensioning.

Note: Mount sheaves and belts as close to the reducer as possible to avoid undue overhung loading on the bearings.

11. When motor height is established, tighten the third set of nuts to secure mounting plate in place. Replace or install guarding.

WARNING: *All rotating equipment must be properly guarded in accordance with OSHA standards. Failure to do so may result in personal injury or property damage.*

CAUTION: *Make sure motor mounting plate is level and all bolts are tightened before reducer is put into service.*

ASSEMBLY OF MOTOR MOUNT

(Fan and Shroud Requirements)

1. From Table 2 (Page 4) determine the motor mount, orientation and part numbers for the appropriate motor/reducer combination.
2. Remove fan shroud from input end of reducer. Fan need not be removed. If reducer has not been modified for fan requirements and needs to be modified, refer to step 12 for methods descriptions.
3. Remove the appropriate bolts from both the input and output shaft assemblies where the mounting brackets are to go.
4. Position and attach the mounting brackets to the reducer, reference Figure 2 (Page 1). It is necessary to use bolts that are 1/2" (13 mm) longer than the original bolts removed from the reducer. This is to account for the thickness of the mounting bracket. Reference Table 1 (Page 3) for required bolt torque values. At the same time position and attach the shroud clips over the mounting bracket. Reference Figure 3.

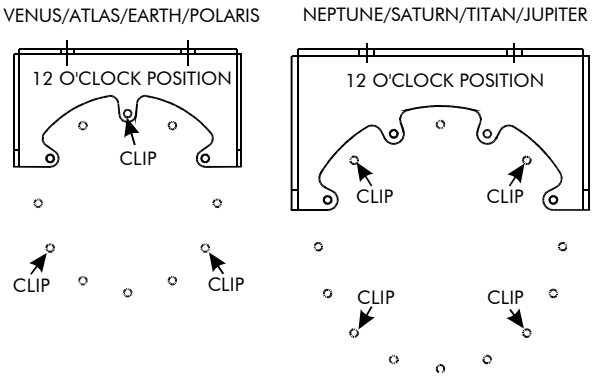


Figure 3 Fan Shroud Clip Locations

5. Position the 4 taper socket head cap screws into the mounting plate and hold in place with 1 nut each. Tighten nut. Reference Figure 1 (Page 1).
6. Attach a second nut onto each cap screw so that each nut is equal distance from the first nut on the cap screw. Reference Figure 1 (Page 1).
7. Place the mounting plate/cap screw assembly onto the mounting brackets on the reducer so that the part number that is stamped on the plate is towards the output shaft end of the reducer.
8. Attach the third nut loosely onto each cap screw to hold the mounting plate/cap screw assembly onto mounting brackets.
9. Mount motor to mounting plate and tighten motor bolts (use Grade 5 bolts or equivalent). Reference Table 1 for recommended bolt torques.
10. Adjust the motor height by loosening or tightening the nuts located just above the mounting bracket.

Note: Mount sheaves and belts as close to the reducer as possible to avoid undue overhung loading on the bearings.

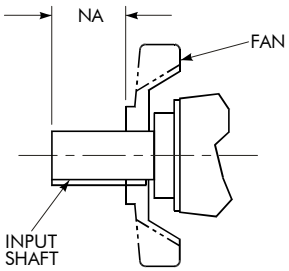
11. When motor height is established, tighten the third set of nuts to secure mounting plate in place. Replace or install guarding.

WARNING: All rotating equipment must be properly guarded in accordance with OSHA standards. Failure to do so may result in personal injury or property damage.

CAUTION: Make sure motor mounting plate is level and all bolts are tightened before reducer is put into service.

12. Modify reducer for fan requirements:
    - From the chart below, determine the distance from the end of the input shaft to the front edge of the fan.

REDUCER SIZE	NA Inch Shaft	NA Metric Shaft
VENUS	2.88"	75mm
ATLAS	2.88"	75mm
LUNA	2.88"	75mm
EARTH	3.25"	85mm
POLARIS	2.88"	75mm
DELTA	2.88"	75mm
NEPTUNE	4.00"	102mm
NEPTUNE PLUS	4.00"	102mm
ORION PLUS	4.00"	102mm
SATURN PLUS	4.69"	119mm
TITAN PLUS	4.69"	119mm
JUPITER PLUS	4.69"	119mm



- Position the fan on the input shaft to the determined distance.
- With fan in place, tighten set screw that is located 90° from the keyway so that it makes a mark on the shaft.
- Remove fan.
- With a 1/8" (3 mm) drill, make a small indentation on the surface of the shaft at the set screw mark.
- With a 5/16" (8 mm) drill, enlarge the indentation made by the 1/8" (3 mm) drill (approximately 1/16" to 1/8" [2 mm to 3 mm] deep).
- Place fan on shaft.
- Locate the set screw which is 90° from the keyway on the fan to the spotting hole on the shaft.
- Tighten set screws.

Note: At this time it is necessary to modify the fan shroud in the order to attach to the reducer. Refer to Planetgear 7000 drawing number 18840061 (Page 5) for the fan shroud modification that corresponds to specific reducer sizes.

13. With tin snips or equivalent, cut away material from the fan shroud as shown in Planetgear 7000 drawing number 18840061.
14. Position the fan shroud so that it fits tight over the shroud clips and also to insure that when the input shaft is rotated, the fan does not interfere with the shroud. Gently bend the shroud clips to position the shroud.

Rexnord Industries, LLC, 3001 W. Canal St., Zip 53208-4200, Milwaukee, WI
Telephone: 414-342-3131 Fax: 414-937-4359
e-mail: falkinfo@falkcorp.com web: www.falkcorp.com

Note: If the shroud clips are mounted over the mounting bracket (as described in Figure 3) then the fan shroud mounting holes need to be relocated for those positions.

15. With a marker on an extension rod, go between the fan and the shroud to mark the position of the shroud clips. Reference Figure 4.

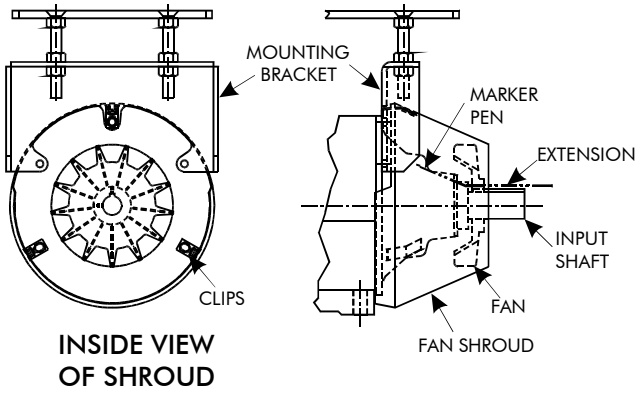


Figure 4 Shroud Clips Positions with Fan Shroud

16. Remove the shroud. Center punch and drill new 3/8" (10 mm) mounting holes at the marked shroud clip positions.
17. Position and attach the fan shroud. Install remote grease line.

TABLE 1 — Torque Requirements For:

DRY FASTENERS (INCH)															
SAE	**DIAMETER**	**1/4**	**5/16**	**3/8**	**7/16**	**1/2**	**9/16**	**5/8**	**3/4**	**7/8**	**1**	**1 1/8**	**1 1/4**	**1 3/8**	**1 1/2**
GENERAL PURPOSE GRADE 2	**TORQUE (ft lb)**	6	12	21	34	52	75	104	178	184	265	380	530	700	930
HIGH STRENGTH GRADE 5	**TORQUE (ft lb)**	9	18	33	53	80	116	160	285	460	690	850	1200	1570	2080
ALLOY STEEL GRADE 8	**TORQUE (ft lb)**	13	26	47	74	114	164	225	400	650	970	1370	1940	2540	3370

DRY FASTENERS (METRIC)														
GRADE	**NOMINAL DIAMETER STANDARD PITCH**	**M5**	**M6**	**M7**	**M8**	**M10**	**M12**	**M14**	**M16**	**M18**	**M20**	**M22**	**M24**	**M27**	**M30**
8.8	**TORQUE (Nm)**	6.15	10.5	17.5	26	51	89	141	215	295	420	570	725	1070	1450
10.9	**TORQUE (Nm)**	8.65	15	25	36	72	125	198	305	420	590	800	1020	1510	2050
12.9	**TORQUE (Nm)**	10.4	18	29	43	87	150	240	365	500	710	960	1220	1810	2450

- The torques shown produce a clamp load of 80% of proof load. They assume clean, dry threads with a torque coefficient of 0.2 and a coefficient of friction of 0.14.
- Plated threads need only 3/4 torque shown.
- Well lubricated threads need only 1/2 torque shown.
- Source: Rexnord Engineering Specification: GES8-19, 04/10/79

TABLE 2 — Reducer Size / Motor Frame Size Capabilities And Part Numbers

REDUCER SIZE	Assembly P/N	Motor Frame Size		Bolt Kit P/N	Motor Mount Plate P/N	Motor Mount Frame P/N		Possible4 Orientations
						Output Motor Mount Frame	Input Motor Mount Frame	
VENUS ATLAS LUNA	VMM	143T/145T 182T / 184T 213T / 215T 254T / 256T 284T / 286T	90SN / 90LN 100L 112M 132S / 132M 160M / 160L 180M / 180L	V001	1886001701	1886001301	1886001301	9 O'CLOCK 10 O'CLOCK 11O'CLOCK 12 O'CLOCK 1 O'CLOCK 2 O'CLOCK 3 O'CLOCK
EARTH	EMM	182T / 184T 213T / 215T 254T / 256T 284T / 286T 324T / 326T	100L 112M 132S / 132M 160M / 160L 180M / 180L 200L	E001	1886001801	1886001401	1886001401	9 O'CLOCK 10 O'CLOCK 11O'CLOCK 12 O'CLOCK 1 O'CLOCK 2 O'CLOCK 3 O'CLOCK
POLARIS DELTA	PMM	182T / 184T 213T / 215T 254T / 256T 284T / 286T 324T / 326T 364T / 365T	112M 132S / 132M 160M / 160L 180M / 180 200L 225S / 225M	E001	1886004701	1886001401	1886001401	9 O'CLOCK 10 O'CLOCK 11O'CLOCK 12 O'CLOCK 1 O'CLOCK 2 O'CLOCK 3 O'CLOCK
NEPTUNE NEPTUNE PLUS	NMM	213T / 215T 254T / 256T 284T / 286T 324T / 326T 364T / 365T	132S / 132M 160M / 160L 180M / 180L 200L 225S / 225M	N001	1886001901	1886001501	1886001501	9 O'CLOCK 9:45 O'CLOCK 10:30 O'CLOCK 11:15 O'CLOCK 12 O'CLOCK 12:45 O'CLOCK 1:30 O'CLOCK 2:15 O'CLOCK 3 O'CLOCK
ORION PLUS	WMM	213T / 215T 254T / 256T 284T / 286T 324T / 326 364T / 365T 404T / 405T	132S / 132M 160M / 160L 180M / 180L 200L 225S / 225 250S / 250M	N001	1886007301	1886001501	1886001501	9 O'CLOCK 12 O'CLOCK 3 O'CLOCK
SATURN PLUS	SMM	254T / 256T 284T / 286T 324T / 326T 364T / 365T 404T / 405T	160M / 160L 180M / 180L 200L 225S / 225M 250S / 250M	S001	1886002001	1886001601	1886001601	Same as Neptune
TITAN PLUS	TMM			T001	1886003901	1886001601	1886001601	
JUPITER PLUS	JMM			J001	1886002301	1886002201	1886002101	9 O'CLOCK 12 O'CLOCK 3 O'CLOCK

Rexnord Industries, LLC, 3001 W. Canal St., Zip 53208-4200, Milwaukee, WI
Telephone: 414-342-3131 Fax: 414-937-4359
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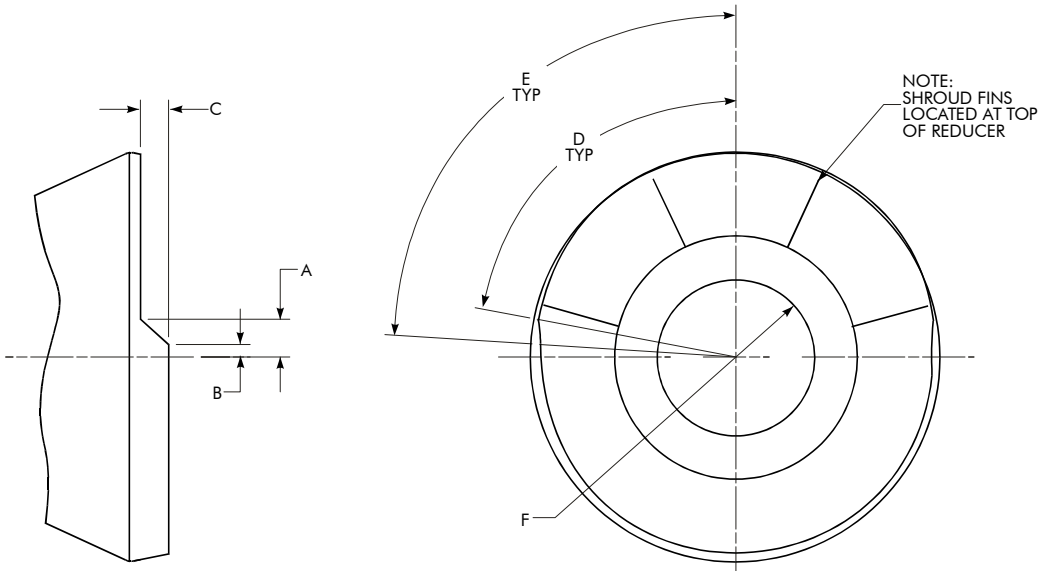

SIDE VIEW
REDUCER/SHROUD

REDUCER APPLICATION	SHROUD PART NO.	MAKE FROM	DIMENSIONS IN INCHES			REFERENCE ANGLE		REFERENCE DIAMETER
			A	B	C	D	E	F
VENUS s, d, t / ATLAS s, d, t / LUNA s, d, t / EARTH q / POLARIS q / DELTA q	1884006101	5884003180	1.75	0.75	1.13	75°	83°	6..25
EARTH s, d, t / NEPTUNE q / NEPTUNE PLUS q / ORION PLUS q	1884006102	5884003280	2.50	1.50	1.13	72°	79°	6.25
POLARIS s, d, t / DELTA s, d, t	1884006103	5884004180	TBD	TBD	TBD	TBD	TBD	TBD
1 2 NEPTUNE s, d, t / NEPTUNE PLUS s, d, t / ORION PLUS s, d, t / SATURN PLUS q / TITAN PLUS q	1884006104	5884001980	2.50	1.50	1.50	76°	82°	9.50
SATURN PLUS s, d, t / TITAN PLUS s, d, t / JUPITER PLUS s, d, t, q	1884006105	5884002080	3.00	2.00	1.50	76°	81°	9.50

s = SINGLE REDUCTION
d = DOUBLE REDUCTION
t = TRIPLE REDUCTION
q = QUADRUPLE REDUCTION

3 NOTE:
1. SHROUD MODIFICATIONS FOR ORION PLUS, SATURN PLUS TITAN PLUS, AND JUPITER PLUS ARE ALSO VALID FOR ORION, SATURN, TITAN, AND JUPITER, RESPECTIVELY.

REV	DATE	ECN NO.	BY	CK
2 3	12-11-07	88-11855	JPS	MPS
1	05-18-98	88-10974	JDM	BR
0	06-20-95	88-10725	DWP	

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ITEM	QTY	PART NO.

MATERIAL NOTE: STL 16 GA
PROCESS NOTE:
EFF CASE DEPTH:
SCALE: 1:1
WEIGHT:
DR. BY: DWP DATE: 06-20-95
CHK. BY: DM DATE: 06-20-95
APPR. BY: DM DATE: 06-20-95

IMPLIED TOL. UNLESS NOTED
X ± .1
XX ± .05
.XXX ± .010
< ± 1°

DESCRIPTION

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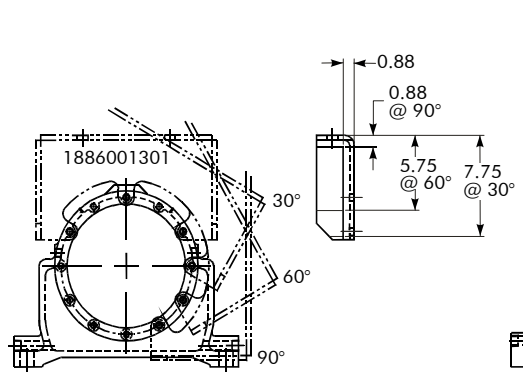
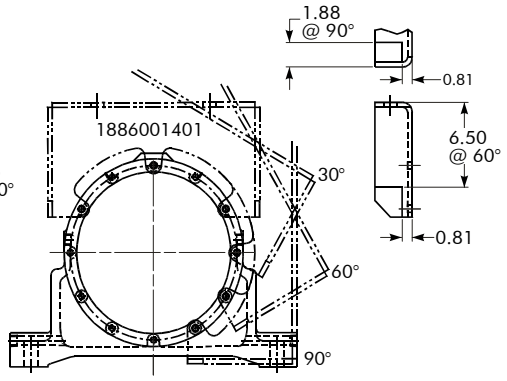
MILWAUKEE, WISCONSIN 53201-2022 (414) 643-2594

TITLE: SHROUD MODIFICATIONS FOR TOP MOTOR MOUNT APPLICATIONS
PART NO.: SEE TABLE
DRAWING NO.: 18840061
REV.: 3

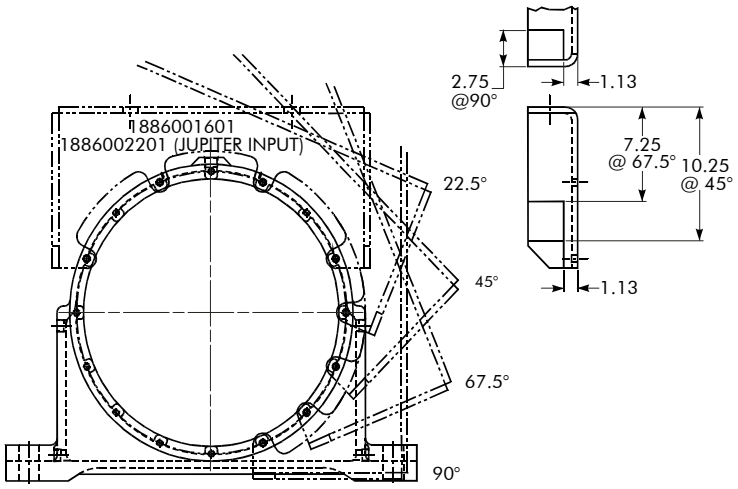


VENUS/ATLAS/LUNA



EARTH/POLARIS/DELTA

4



SATURN PLUS/TITAN PLUS
JUPITER PLUS 0° & 90° ONLY

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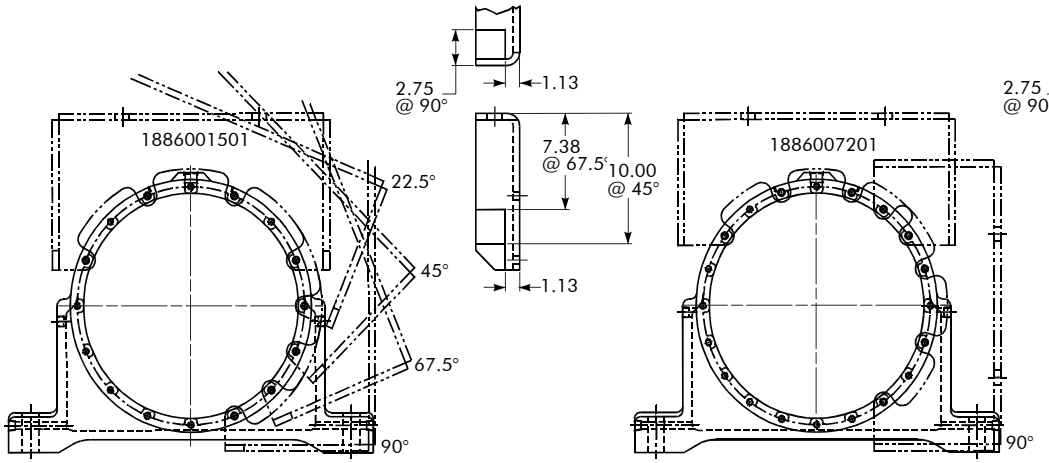
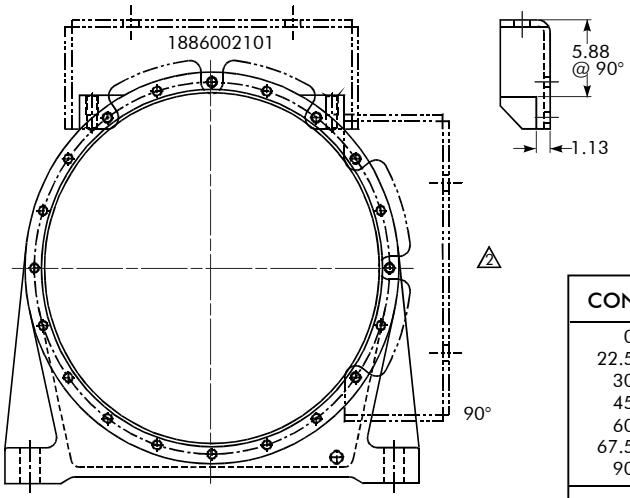


NEPTUNE/NEPTUNE PLUS

ORION PLUS △3



JUPITER PLUS OUTPUT

NOTES:

1. REDUCERS ARE VIEWED FROM INPUT END EXCEPT JUPITER OUTPUT.
2. ONLY OUTPUT END MOTOR MOUNT FRAMES NEED TO BE MODIFIED.
3. CLOCKWISE ROTATION SHOWN. FOR COUNTER CLOCKWISE ROTATION, MODIFY OPPOSITE SIDE OF FRAMES.
4. SPECIFIED FRAME MODIFICATIONS FOR ORION PLUS, SATURN PLUS, TITAN PLUS, AND JUPITER PLUS ARE ALSO VALID FOR ORION, SATURN, TITAN, AND JUPITER, RESPECTIVELY. △5

CONVERSION CHART
0° = 12:00 O'CLOCK
22.5° = 12:45 O'CLOCK
30° = 1:00 O'CLOCK
45° = 1:30 O'CLOCK
60° = 2:00 O'CLOCK
67.5° = 2:15 O'CLOCK
90° = 3:00 O'CLOCK
–22.5° = 11:15 O'CLOCK
–30° = 11:00 O'CLOCK
–45° = 10:30 O'CLOCK
–60° = 10:00 O'CLOCK
–67.5° = 9:45 O'CLOCK
–90° = 9:00 O'CLOCK

△1 GENERAL REVISION

REV	DATE	ECN NO.	BY	CK.
4 5	12-11-07	88-11855	JPS	MPS
3	06-02-98	88-10977	JDM	BR
1 2	06-20-95	88-10725	DWP	DM
0	10-11-88	88-10167	CJP	

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ITEM	QTY.	PART NO	DESCRIPTION
MATERIAL NOTE			
PROCESS NOTE			
EFF CASE DEPTH			
SCALE 1:1		WEIGHT	
DR. BY DWP		DATE 06-20-95	
CHK. BY DM		DATE 06-20-95	
APPR. BY DM		DATE 06-20-95	

IMPLIED TOL. UNLESS NOTED
X ± .1
.XX ± .05
.XXX ± .010
< ± 1°

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TITLE: MOTOR MOUNT FRAME MODIFICATIONS

PART NO	DRAWING NO	REV.
1886002601	18860026	5