STAR RAPID

NADCA STANDARD TOLERANCES GUIDELINES

			NADCA STANDARD TOLERANCES			
			Casting Alloys			NADCA Reference
			Zinc	Aluminum	Magnesium	
1 **Linear Dimension Tolerances**		**Length of Dimension** in same die half				NADCA S-4A-1-15 Standard Tolerances
		Basic Tolerance up to 1" (25.4 mm)	**± 0.010** (± 0.25 mm)	**± 0.010** (± 0.25 mm)	**± 0.010** (± 0.25 mm)	
		Additional Tolerance for each additional inch over 1" (25.4 mm)	**± 0.001** (± 0.025 mm)	**± 0.001** (± 0.025 mm)	**± 0.001** (± 0.025 mm)	
2 **Parting Line Tolerances**	Added to Linear Tolerances	**Projected Area** of Die Casting inches^2 (cm^2)	**Tolerances shown are "plus" values only**			NADCA S-4A-2-15 Standard Tolerances
		up to 10 in^2 (64.5 cm^2)	**+ 0.0045** (+ 0.114 mm)	**+ 0.0055** (+ 0.14 mm)	**+ 0.0055** (+ 0.14 mm)	
		11 in^2 to 20 in^2 (71.0 cm^2 to 129.0 cm^2)	**+ 0.005** (+ 0.13 mm)	**+ 0.0065** (+ 0.165 mm)	**+ 0.0065** (+ 0.165 mm)	
		21 in^2 to 50 in^2 (135.5 cm^2 to 322.6 cm^2)	**+ 0.006** (+ 0.15 mm)	**+ 0.0075** (+ 0.19 mm)	**+ 0.0075** (+ 0.19 mm)	
		51 in^2 to 100 in^2 (329.0 cm^2 to 645.2 cm^2)	**+ 0.009** (+ 0.23 mm)	**+ 0.012** (+ 0.30 mm)	**+ 0.012** (+ 0.30 mm)	
		101 in^2 to 200 in^2 (651.6 cm^2 to 1290.3 cm^2)	**+ 0.012** (+ 0.30 mm)	**+ 0.018** (+ 0.46 mm)	**+ 0.018** (+ 0.46 mm)	
		201 in^2 to 300 in^2 (1296.8 cm^2 to 1935.5 cm^2)	**+ 0.018** (+ 0.46 mm)	**+ 0.024** (+ 0.61 mm)	**+ 0.024** (+ 0.61 mm)	
		For Projected area of die casting over 300 in^2 (1935.5 cm^2), please consult with Star.				
3 **Moving Die Component Tolerances**	Added to Linear Tolerances	**Projected Area** of Die Casting inches^2 (cm^2)	**Tolerances shown are "plus" values only**			NADCA S-4A-3-15 Standard Tolerances
		up to 10 in^2 (64.5 cm^2)	**+ 0.006** (+ 0.15 mm)	**+ 0.008** (+ 0.20 mm)	**+ 0.008** (+ 0.20 mm)	
		11 in^2 to 20 in^2 (71.0 cm^2 to 129.0 cm^2)	**+ 0.009** (+ 0.23 mm)	**+ 0.013** (+ 0.33 mm)	**+ 0.013** (+ 0.33 mm)	
		21 in^2 to 50 in^2 (135.5 cm^2 to 322.6 cm^2)	**+ 0.013** (+ 0.33 mm)	**+ 0.019** (+ 0.48 mm)	**+ 0.019** (+ 0.48 mm)	
		51 in^2 to 100 in^2 (329.0 cm^2 to 645.2 cm^2)	**+ 0.019** (+ 0.48 mm)	**+ 0.024** (+ 0.61 mm)	**+ 0.024** (+ 0.61 mm)	
		101 in^2 to 200 in^2 (651.6 cm^2 to 1290.3 cm^2)	**+ 0.026** (+ 0.66 mm)	**+ 0.032** (+ 0.81 mm)	**+ 0.032** (+ 0.81 mm)	
		201 in^2 to 300 in^2 (1296.8 cm^2 to 1935.5 cm^2)	**+ 0.032** (+ 0.81 mm)	**+ 0.040** (+ 1.0 mm)	**+ 0.040** (+ 1.0 mm)	
		For Projected area of die casting over 300 in^2 (1935.5 cm^2), please consult with Star.				
4 **Flatness Tolerances**		**Maximum Dimension** of Die Cast Surface				NADCA S-4A-8-15 Standard Tolerances
		Up to 3.00 in. (76.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	
		Additional Tolerance in. (25.4mm) for each additional inch (25.4 mm)	**0.003** (0.08 mm)	**0.003** (0.08 mm)	**0.003** (0.08 mm)	
5 **Angularity Tolerances**		**Features in Same Die Half**				NADCA S/P-4A-4-15 Standard Tolerances
		Surfaces 3" or less (76.20 mm)	**0.005** (0.13 mm)	**0.005** (0.13 mm)	**0.005** (0.13 mm)	
		Additional Tolerance Each 1" (25.4mm) over 3" (76.2mm)	**0.001** (0.025 mm)	**0.001** (0.025 mm)	**0.001** (0.025 mm)	
		Features that Cross Parting Line				
		Surfaces 3" or less (76.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	
		Additional Tolerance Each 1" (25.4mm) over 3" (76.2mm)	**0.0015** (0.038 mm)	**0.0015** (0.038 mm)	**0.0015** (0.038 mm)	
		MDC Features in Same Die Half				
		Surfaces 3" or less (76.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	
		Additional Tolerance Each 1" (25.4mm) over 3" (76.2mm)	**0.0015** (0.038 mm)	**0.0015** (0.038 mm)	**0.0015** (0.038 mm)	
6 **Concentricity Tolerances**		**Surface in Fiexed Relationship in one Die Section**				NADCA S-4A-5-15 Standard Tolerances
		Diameter of Largest Diameter (A)	**Tolerence (T.I.R)**			
		Basic Tolerance up to 3" (76.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	**0.008** (0.20 mm)	
		Additional Tolerance for each additional 1" (25.4mm) over 3" (76.2mm)	**+ 0.002** (0.05 mm)	**+ 0.002** (0.05 mm)	**+ 0.002** (0.05 mm)	
		Surfaces formed by Opposite Haves of Die (single cavity)				
		Projected Area of casting	**Additional Tolerence**			
		Up to 50 in^2 (323 cm^2)	**+ 0.008** (0.20 mm)	**+ 0.008** (0.20 mm)	**+ 0.008** (0.20 mm)	
		51 in^2 to 100 in^2 (329 cm^2 to 645 cm^2)	**+ 0.012** (0.30 mm)	**+ 0.012** (0.30 mm)	**+ 0.012** (0.30 mm)	
		101 in^2 to 200 in^2 (652 cm^2 to 1290 cm^2)	**+ 0.016** (0.41 mm)	**+ 0.016** (0.41 mm)	**+ 0.016** (0.41 mm)	
		201 in^2 to 300 in^2 (1297 cm^2 to 1936 cm^2)	**+ 0.022** (0.56 mm)	**+ 0.022** (0.56 mm)	**+ 0.022** (0.56 mm)	
7 **Parting Line Shift Tolerances**		**Excluding Unit dies**				NADCA S-4A-6-15 Standard Tolerances
		Projected Area of casting	**Additional Tolerence**			
		Up to 50 in^2 (322.6 cm^2)	**± 0.004** (± 0.102 mm)	**± 0.004** (± 0.102 mm)	**± 0.004** (± 0.102 mm)	
		51 in^2 to 100 in^2 (329.0 cm^2 to 645.2 cm^2)	**± 0.006** (± 0.152 mm)	**± 0.006** (± 0.152 mm)	**± 0.006** (± 0.152 mm)	
		101 in^2 to 200 in^2 (651.6 cm^2 to 1290.3 cm^2)	**± 0.008** (± 0.203 mm)	**± 0.008** (± 0.203 mm)	**± 0.008** (± 0.203 mm)	
		201 in^2 to 300 in^2 (1296.8 cm^2 to 1935.5 cm^2)	**± 0.011** (± 0.279 mm)	**± 0.011** (± 0.279 mm)	**± 0.011** (± 0.279 mm)	
		301 in^2 to 500 in^2 (1941.9 cm^2 to 3225.8 cm^2)	**± 0.016** (± 0.406 mm)	**± 0.016** (± 0.406 mm)	**± 0.016** (± 0.406 mm)	
		501 in^2 to 800 in^2 (3232.3 cm^2 to 5161.3 cm^2)	**± 0.020** (± 0.508 mm)	**± 0.020** (± 0.508 mm)	**± 0.020** (± 0.508 mm)	
		801 in^2 to 1200 in^2 (5167.7 cm^2 to 7741.9 cm^2)	**± 0.025** (± 0.635 mm)	**± 0.025** (± 0.635 mm)	**± 0.025** (± 0.635 mm)	