APPLICATION DATA SHEET

APPLICATION	Automotive Electronics
SPECIAL FEATURES	High Turnings Ratio
PART WEIGHT	0.029 lb. (Brass)
BRASS RAW MATERIAL SAVINGS	14% (Including Turnings Allowance)
CYCLETIME (C360 BRASS)	3.7 sec (847 pieces per hour @ 80% Efficiency)
CYCLETIME (12L14 STEEL)	7.1 sec (355 pieces per hour @ 70% Efficiency)
PRODUCTIVITY GAIN USING BRASS	138%
NET COST SAVINGS (BRASS VS. BARE STEEL)	30% = $84.20 per 1000
NET COST SAVINGS (BRASS VS.PLATED STEEL)*	44% = $150.20 per 1000
*Zinc/chromate; assumes 0% plating rejects.	

CELLULAR ANTENNA BASE

BRASS COSTS LESS THAN STEEL

This antenna base must be strong and corrosion resistant to work in the exterior environment that surrounds an automobile. It is made from Free-Cutting Brass, Copper Alloy 360, (UNS C36000), and costs about 44% less in brass than it would in 12L14 steel. Many designers think that because brass costs more than steel, machined brass parts must cost more too. That's not true for typical screw machine jobs. Only brass rod's off-the-shelf material cost is significantly higher. This part produces more than four times as much turnings weight as it does product, and after discounting for the turnings' high value, the net material savings is 14%.

HIGH MACHINABILITY MEANS LOWER PRODUCTION COSTS

When you buy machine parts you are paying for machine time. The faster the cut, the lower the cost, and free cutting brass machines faster than leaded steel. The productivity gain by switching from steel to brass for this part is an impressive 138%.

ELIMINATE PLATING COSTS

Steel rusts, brass tarnishes; an important difference. Exposed steel parts have to be zinc/ chromate plated. Brass parts are ready to use without protective platings. The savings are between 11 and 16 cents per pound of product. If your part has deep holes, threads, or sharp corners, it can be difficult to insure uniform plating on all surfaces. Make the part in brass in you eliminate that concern. The natural corrosion resistance of brass uniformly protects the entire surface.

BRASS IS AS STRONG AS STEEL

Many designers don't realize that the strength of half-hard Free-Cutting Brass and cold-reduced 12L14 leaded steel (the most common conditions for screw machine parts) overlap the same range. Here are the published nominal values:

MATERIAL	TENSILE PROPERTIES	
	YIELD STRENGTH	ULTIMATE STRENGTH
C36000	45 ksi	58 ksi
Hot Rolled 12L14	34 ksi	57 ksi
Cold Drawn 12L14	60 ksi	78 ksi

That means that for almost one-half of all screw machine products, brass can be substituted for leaded steel without any sacrifice in strength or safety.

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