

INTRODUCTION TO ALUMINIUM BRONZES:-

ALUMINIUM BRONZES ARE ALLOYS, PREDOMINANTLY OF COPPER RANGING FROM 77% TO 93% AND ALUMINIUM FROM 6% TO 12% TOGETHER WITH SMALLER AMOUNTS OF IRON, NICKEL, MANGANESE AND SILICON WHICH PROMOTE THE SPECIFIC PROPERTIES THAT ENGINEERS AND METALLURGISTS CAN EXPLOIT.

GIVEN THE INHERENT CORROSION RESISTANCE OF COPPER, THE ADDITION OF ALUMINIUM IMPROVES THE STRENGTH AND CORROSION RESISTANCE. NICKEL FURTHER IMPROVES THE CORROSION RESISTANCE AND RAISE THE PROOF STRESS. MANGANESE STABILISES THE METALLURGICAL BETA PHASE AND IMPROVES THE TENSILE STRENGTH. IRON REFINES THE GRAIN SIZE, AGAIN IMPROVING THE STRENGTH. THE EXCELLENT CORROSION RESISTANCE OF ALUMINIUM BRONZES, PARTICULARLY IN SEA WATER, IS ATTRIBUTABLE TO A HARD THIN FILM OF ALUMINIUM OXIDE WHICH FORMS ON THE SURFACE OF THE ALLOY BY TAKING OXYGEN FROM THE SURROUNDING MEDIUM. THIS MAKES THE ALLOYS PREFERABLE TO STAINLESS STEEL IN MANY MARINE APPLICATIONS.

THE SPECIFICATIONS WHICH "FARNELL COMPONENTS" USE IS DGS 1043.

SPECIFICATION DGS1043:-

DGS1043 HAS EXCELLENT CORROSION RESISTANCE, AND HIGH STRENGTH WHICH ARE VITAL COMPONENTS IN THE MARINE INDUSTRY WHERE DGS1043 IS COMMONLY USED:

COMPOSITION

Specification	Cu	Al	Fe	Ni	Mn	Si	0.2% Proof Stress	Ultimate Tensile Strength	Elongation	Hardness	IZOD impact strength
DGS 1043	82	9.3	4.2	4.2	0.3	--	330-450	680-740	25-30	190-220	27 Min

DGS1043 IS USED IN A VARIED AMOUNT OF APPLICATIONS :-
HERE ARE SOME OF THEM

BEARINGS
VALVE MANUFACTURE
TUBE PLATES
GEARS
FASTENERS
PROPELLER SHAFTS