

Title: NUCLEAR RADIATION RESISTANCE OF ACTUATOR MATERIALS

Nuclear


Actuator Model	Part	Resistance Material Specification	(Max.Gamma Ray Dose)	Source of Information
OMO to 07	Actuator Casing	Zinc Alloy: ILZRO 16	}	
08 to 30	Actuator Casing	Aluminum. BS.1490 LM24, LM25	}	
01 to 07	Spring Casing	Zinc Alloy. ILZRO 16	}	
08 to 30	Spring Casing	Aluminium. BS.1490 LM24, LM 25	}	
OMO to 05	Vane	13% Cr.Steel. BS.3146:1975 Type ANC 1 Grade B	}	
07 to 30	Vane	S.G.Iron. BS.2789:1985 420/12	}	
OMO to 30	Coupling	Carbon Steel. BS.970:1983 080A15	}	>10 ⁹ rads. Jet Joint Undertakings
01 to 30	Spring Return Coupling	Carbon Steel. BS.3146:1975 CLA. 1 Grade A	}	
01 to 30	Clock Type Spring	Carbon Steel. BS.1449:1983 CS 80	}	
01 to 30	Seal Expanders	Stainless Steel. BS.970:1970/72 302S25	}	
16 to 30	Side Plates	Carbon Steel. BS.970:1983 080A15	}	
01 to 15	Side Plates (Moulded)	Glass filled Nylon 66	10 ⁷ rads.	Du Pont (UK) Ltd.
OMO to 30	Vane Seals	Polyurethane	10 ⁹ rads.	Du Pont (UK) Ltd.
OMO to 30	Bush	Glacier DU	10 ⁸ rads.	Glacier Metal Co.Ltd.
OMO to 30	O-rings & Shaft Seals	Nitrile	10 ⁶ rads.	Dowty Seals Ltd.
01 to 30	Spring Return Gasket	HP Nebar (Cork & Nitrile)	10 ⁷ rads.	James Walker & Co.Ltd.
02 to 15	Indicator	Nylon 6	10 ⁷ rads.	Du Pont (UK) Ltd.

Screws, Nuts & Washers

Socket Head Screws & Nuts	Stainless Steel Grade A4 Property Class 70	}		
Pozidrive Head Screws	Grade A2	}	>10 ⁹ rads.	Jet Joint Undertakings
Washers	Stainless Steel	}		
Spring Pins	High Tensile Steel	}		

Miscellaneous Materials for all Actuator Models

Loctite 270	High strength chemical lock for studs
Permabond AO11, Loctite 222	Low strength chemical lock for screws & nuts
Permabond A130	For sealing pneumatic threads
Silicone Sealant	For sealing case joints
Lithium No.2 medium grease	General purpose
Molytex 2 grease	For actuator cases
Chevron Polyurea EP2 grease	For springs

Issue	Signed	Date	 Trading Estate Farnham Surrey England	Doc.No. TD 70
C	D.G.W.	19/02/14		Page 1 of 1