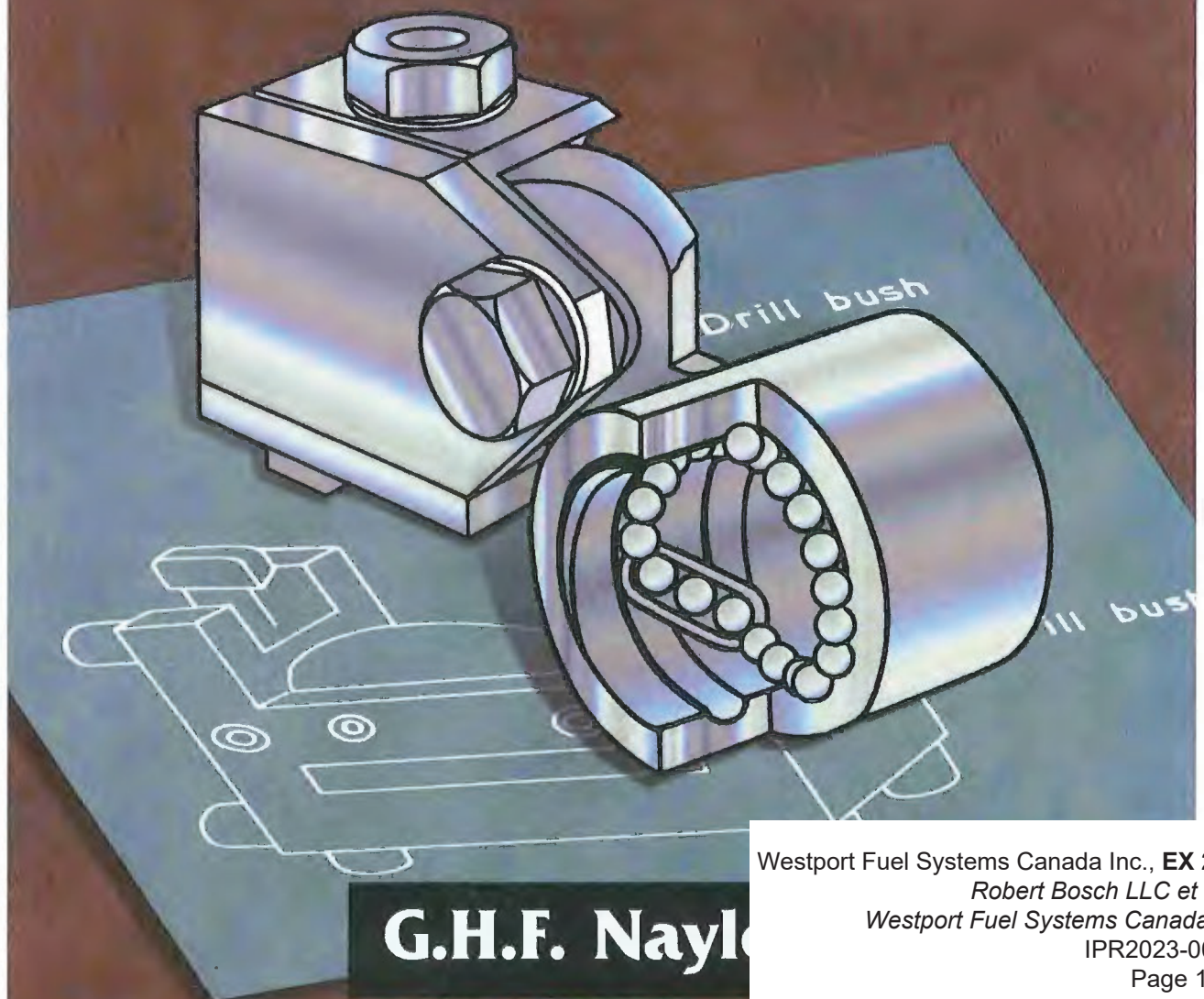


Dictionary of Mechanical Engineering

Fourth Edition



G.H.F. Naylor

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diametral pitch (Manchester principle) The number π divided by the spacing of adjacent teeth in inches.

diametral normal pitch The number π divided by the *normal pitches* in inches.

transverse diametral pitch The number π divided by the transverse pitch of a gear in inches; also the number of the teeth in the gear divided by the diameter of the *reference circle* in inches. This is sometimes called the diametral pitch. See also *transverse pitch*.

diamond A crystalline form of carbon; with boron nitride the two hardest substances known (10 in *Mohs' scale*.) Diamond is used as a tip for tools and diamond dust as an abrasive.

diamond-tip turning tool A typical turning tool with a cutting diamond tip is shown in *Figure D.2*.

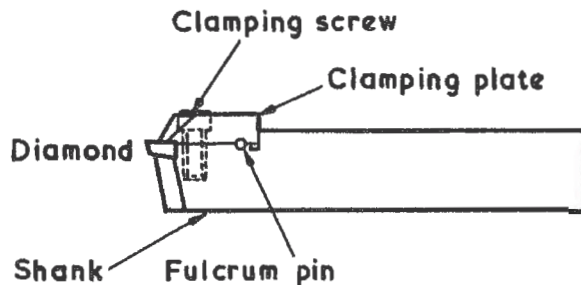


Figure D.2 Diamond-tip turning tool.

diamond tool (diamond point) A name given to a tool when the surface of the cutting plane is formed like a lozenge or diamond.

diamond wheel An abrasive wheel with diamond particles bonded in it.

diaphragm A flexible disc or membrane which deflects under a change of the differential fluid pressure across it.

diaphragm pump A pump in which a flexible diaphragm has a reciprocating *piston rod* of short stroke attached at its centre.

diaphragm valve A valve which relies upon the deflection of a flexible diaphragm, by fluid pressure applied, to shut off the fluid flow.

die (a) An internally threaded steel block with cutting edges for producing screw threads. The larger dies are made in halves and set in a die stock. The block is called a "screwing die" or "chaser." (See *Figure D.3*.) The diameter of the hole can be reduced by means of a pair of screws or increased by a third, central, pointed screw. For manual thread cutting, handles are fitted to the die holder and the correct depth of thread is obtained by progressively closing the die. (b) A metal block used in stamping operations by pressing down on to a blank of sheet-metal. (c) A metal block with a correct internal cross-se