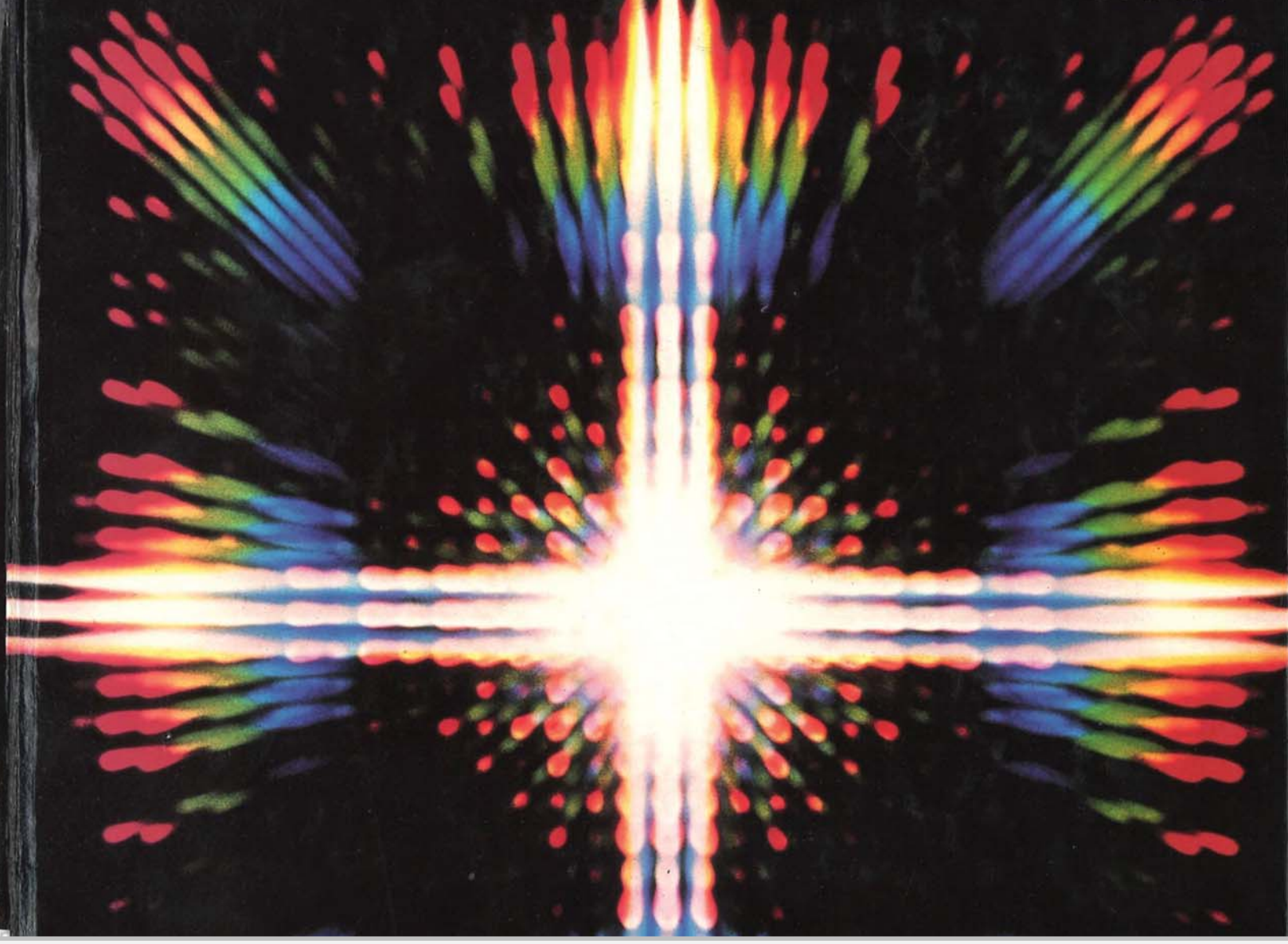
McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition



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McGraw-Hill DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS

Fourth Edition

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On the title pages: Aerial photograph of the Sinai Peninsula made by Gemini spacecraft. (NASA)

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anchor well [NAV ARCH] A well in a ship's forward overhang for holding anchors. { 'aŋ·kər ˌwel }

anchor windlass [NAV ARCH] A machine, generally located on the forecastle head of a ship, designed to raise or lower an anchor; it consists of a horizontal barrel that is fitted with gearlike projections that engage the links of the anchor chain, and is turned by steam or electrical power. Also known as windlass. { 'aŋ·kər ˌwind·ləs }

anchovy [VERT ZOO] Any member of the Engraulidae, a family of herringlike fishes harvested commercially for human consumption. { 'anˌchō·vē }

anchylosis *See* ankylosis. { aŋ·kiˈlō·səs }

ancipital [BOT] Having two edges, specifically referring to flattened stems, as of certain grasses. { anˈsip·əd·əl }

ancon [ARCH] A bracket, elbow, or console at the top of a wall or window jamb to support a cornice. { 'aŋˌkän }

ancora [INV ZOO] The initial, anchor-shaped growth stage of graptolithinids. { 'aŋ·kə·rə }

ancylite [MINERAL] $SrCe(CO_3)_2(OH)\cdot H_2O$ A mineral consisting of hydrous basic carbonate of cerium and strontium. { 'an·səˌlīt }

ancyloid [INV ZOO] A limpet-shaped or patelliform shell with the apex directed anteriorly. { 'an·səˌlȯid }

ancylopoda [PALEON] A suborder of extinct herbivorous mammals in the order Perissodactyla. { ˌan·səˈlä·pə·də }

Ancylostoma [INV ZOO] A genus of roundworms, commonly known as hookworms, in the order Ancylostomidae; parasites of humans, dogs, and cats. { ˌaŋ·kəˈläs·tə·mə }

Ancylostoma duodenale [INV ZOO] The Old World hookworm, a human intestinal parasite that causes microcytic hypochromic anemia. { ˌaŋ·kəˈläs·tə·mə ˌdü·ə·diˈnäl }

Ancylostomidae [INV ZOO] A family of nematodes belonging to the group Strongyloidea. { ˌaŋ·kə·lō·stäˈmad·əˌdē }

And *See* Andromeda.

andalusite [MINERAL] Al_2SiO_5 A brown, yellow, green, red, or gray neosilicate mineral crystallizing in the orthorhombic system, usually found in metamorphic rocks. { ˌan·dəˈlüˌsīt }

AND circuit *See* AND gate. { 'and ˌsər·kət }

Andean-type continental margin [GEOL] A continental margin, as along the Pacific coast of South America, where oceanic lithosphere descends beneath an adjacent continent producing andesitic continental margin volcanism. { 'an·dēˌən ˌtīp ˌkänt·ənˈent·əl 'mär·jən }

Andept [GEOL] A suborder of the soil order Inceptisol, formed chiefly in volcanic ash or in regoliths with high components of ash. { ˌanˌdept }

Anderson bridge [ELECTR] A six-branch modification of the Maxwell-Wien bridge, used to measure self-inductance in terms of capacitance and resistance; bridge balance is independent of frequency. { 'an·dər·sənˌbrij }

Anderson-Dayem bridge [CRYO] A Josephson junction in a superconducting film, formed by a constriction with length and width on the order of a few micrometers or less. { ˌan·dər·sənˌdā·əm ˌbrij }

andersonite [MINERAL] $Na_2Ca(UO_2)(CO_3)_3\cdot 6H_2O$ Bright yellow-green secondary mineral consisting of a hydrous sodium calcium uranium carbonate. { 'an·dər·sənˌīt }

Andes glow *See* Andes lightning. { 'anˌdēz ˌglō }

andesine [MINERAL] A plagioclase feldspar with a composition ranging from $Ab_{70}An_{30}$ to $Ab_{50}An_{50}$, where Ab = $NaAlSi_3O_8$ and An = $CaAl_2Si_2O_8$; it is a primary constituent of intermediate igneous rocks, such as andesites. { 'an·dəˌzēn }

andesite [PETR] Very finely crystalline extrusive rock of volcanic origin composed largely of plagioclase feldspar (oligoclase or andesine) with smaller amounts of dark-colored mineral (hornblende, biotite, or pyroxene), the extrusive equivalent of diorite. { 'an·dəˌzīt }

andesite line [GEOL] The postulated geographic and petrographic boundary between the andesite-dacite-rhyolite rock association of the margin of the Pacific Ocean and the olivine-basalt-trachyte rock association of the Pacific Ocean basin. { 'an·dəˌzīt ˌlīn }

andesitic glass [GEOL] A natural glass that is chemically equivalent to andesite. { 'an·dəˌzīt·ik ˌglas }

Andes lightning [GEOPHYS] Electrical coronal discharges observable often as far as several hundred miles away, generally over any of the mountainous areas of the world when under disturbed electrical conditions. Also known as Andes glow. { 'anˌdēz 'līt·niŋ }

AND function [MATH] An operation in logical algebra on statements P, Q, R, such that the operation is true if all the statements P, Q, R, ... are true, and the operation is false if at least one statement is false. { 'and ˌfuŋk·shən }

AND gate [ELECTR] A circuit which has two or more input-signal ports and which delivers an output only if and when every input signal port is simultaneously energized. Also known as AND circuit; passive AND gate. { 'and ˌgāt }

AND/NOR gate [ELECTR] A single logic element whose operation is equivalent to that of two AND gates with outputs feeding into a NOR gate. { ˌand ˌnȯr ˌgāt }

AND NOT gate [ELECTR] A coincidence circuit that performs the logic operation AND NOT, under which a result is true only if statement A is true and statement B is not. Also known as A AND NOT B gate. { ˌand ˌnät ˌgāt }

AND-OR circuit [ELECTR] Gating circuit that produces a prescribed output condition when several possible combined input signals are applied; exhibits the characteristics of the AND gate and the OR gate. { ˌand ˌȯr ˌsər·kət }

AND-OR-INVERT gate [ELECTR] A logic circuit with four inputs, a_1, a_2, b_1, and b_2, whose output is 0 only if either a_1 and a_2 or b_1 and b_2 are 1. Abbreviated A-O-I gate. { ˌand ˌȯr inˈvərt ˌgāt }

andorite [MINERAL] $AgPbSb_3S_6$ A dark-gray or black orthorhombic mineral. Also known as sundtite. { 'an·dəˌrīt }

Andr *See* Andromeda.

Andrade's creep law [MECH] A law which states that creep exhibits a transient state in which strain is proportional to the cube root of time and then a steady state in which strain is proportional to time. { 'anˌdrädz 'krēp ˌlȯ }

andradite [MINERAL] The calcium-iron end member of the garnet group. { anˈdräˌdīt }

Andreaeales [BOT] The single order of mosses of the subclass Andreaeobrya. { ˌan·drē·ēˈä·lēz }

Andreaeceae [BOT] The single family of the Andreaeales, an order of mosses. { ˌan·drē·ēˈē·sē }

Andreaeobrya [BOT] The granite mosses, a subclass of the class Bryopsida. { ˌan·drē·ēˈäb·rē·ə }

Andreaeopsida [BOT] A class of the plant division Bryophyta distinguished by longitudinal splitting of the mature capsule into four valves; commonly known as granite mosses. { ˌan·drē·ēˈäp·səd·ə }

Andrenidae [INV ZOO] The mining or burrower bees, a family of hymenopteran insects in the superfamily Apoidea. { ˌanˈdren·əˌdē }

andrewsite [MINERAL] $(Cu,Fe^{2+})Fe_3^{3+}(PO_4)_3(OH)_2$ A bluish-green mineral consisting of a basic phosphate of iron and copper. { 'an·drüˌzīt }

andrite [GEOL] A meteorite composed principally of augite with some olivine and troilite. { 'anˌdrīt }

androecium [BOT] The aggregate of stamens in a flower. { ˌanˈdrēsh·ē·əm }

androgen [BIOCHEM] A class of steroid hormones produced in the testis and adrenal cortex which act to regulate masculine secondary sexual characteristics. { 'an·drə·jən }

androgenesis [EMBRYO] Development of an embryo from a fertilized irradiated egg, involving only the male nucleus. { ˌan·drəˈjen·ə·səs }

androgenetic merogony [EMBRYO] The fertilization of egg fragments that lack a nucleus. { ˌan·drə·jəˌned·ik məˈrä·gə·nē }

androgenic gland [INV ZOO] Any of the accessory glands associated with the sperm duct in male crustaceans and required for differentiation of a functional male. { ˌan·drəˈjen·ik ˈgland }

androgen unit [BIOL] A unit for the standardization of male sex hormones. { 'an·drə·jən ˌyü·nət }

androgyny [MED] A form of pseudohermaphroditism in humans in which the individual has female external sexual characteristics, but has undescended testes. Also known as male pseudohermaphroditism. { anˈdräj·ə·nē }

android pelvis *See* masculine pelvis. { 'anˌdrȯid 'pel·vəs }

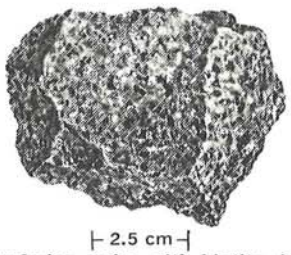
Andromeda [ASTRON] A constellation with a right ascension of 1 hour and a declination of 40°N. Abbreviated And; Andr. { ˌanˈdräm·ə·də }

Andromeda Galaxy [ASTRON] The spiral galaxy of type Sb

ANDALUSITE

Andalusite, variety chiastolite. Prismatic crystal specimens from Worchester County, Mass. *(American Museum of Natural History specimens)*

ANDESINE



Andesine grains with biotite, in a specimen from Zoutpansberg, Transvaal, South Africa. Andesine is rarely found except as grains in igneous rocks.

ANDREAECEAE

Andreaea petrophila. (From H. E. Jaques, Plant Families, How to Know Them, 2d ed., Brown, 1949)

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impact, to sustain loads greater than those sustained in an uncompacted state. { kəm'pak·tər }

compact radio source [ASTRON] A source of radio-frequency radiation outside the solar system whose flux at an intermediate radio frequency is dominated by the contribution from a single bright component less than 1 kiloparsec (1.9×10^{16} miles or 3.1×10^{16} kilometers) in diameter. { 'käm·pakt 'rād·ē·ō ˌsórs }

compact set [MATH] A set in a topological space with the property that every open cover has a finite subset which is also a cover. Also known as bicompact set. { ¦käm,pakt 'set }

compact space [MATH] A topological space which is a compact set. { ¦käm,pakt 'spās }

companded single-sideband system [COMMUN] A long-haul microwave telecommunications system that employs satellite-borne repeaters and single-sideband amplitude modulation and achieves subjective noise improvement by companding to reduce circuit noise between syllables and during pauses in speech. Abbreviated CSSB system. { kəm'pan·dəd ¦siŋ·gəl 'sīdˌband ˌsis·təm }

companding [ELECTR] A process in which compression is followed by expansion; often used for noise reduction in equipment, in which case compression is applied before noise exposure and expansion after exposure. { kəm'pand·iŋ }

compandor [ELECTR] A system for improving the signal-to-noise ratio by compressing the volume range of the signal at a transmitter or recorder by means of a compressor and restoring the normal range at the receiving or reproducing apparatus with an expander. { kəm'pand·ər }

companion *See* comes. { kəm'pan·yən }

companion body [AERO ENG] A nose cone, last-stage rocket, or other body that orbits along with an earth satellite or follows a space probe. { kəm'pan·yən ˌbäd·ē }

companion cell [BOT] A specialized parenchyma cell occurring in close developmental and physiologic association with a sieve-tube member. { kəm'pan·yən ˌsel }

companion flange [DES ENG] A pipe flange that can be bolted to a similar flange on another pipe. { kəm'pan·yən ˌflanj }

companionway [NAV ARCH] A stairway that runs from one deck of a ship to another. { kəm'pan·yənˌwā }

compar [MATER] Generic term for a family of compounded, modified, and plasticized polyvinyl alcohol resins; used for making full- and solvent-resistant tubing and hose, and printing rolls. { 'käm,pär }

comparative embryology [EMBRYO] A branch of embryology that deals with the similarities and differences in the development of animals or plants of different orders. { kəm'par·əd·iv ˌem·brē'äl·ə·jē }

comparative experiments [STAT] Experiments conducted to determine statistically whether one procedure is better than another. { kəm'par·əd·iv ik'sper·ə·məns }

comparative pathology [MED] Investigation and comparison of disease in various animals, including man, to arrive at resemblances and differences which may clarify disease as a phenomenon of nature. { kəm'par·əd·iv pə'thäl·ə·jē }

comparative rabal [ENG] A rabal observation (that is, a radiosonde balloon tracked by theodolite) taken simultaneously with the usual rawin observation (tracking by radar or radio direction-finder), to provide a rough check on the alignment and operating accuracy of the electronic tracking equipment. { kəm'par·əd·iv 'rāˌbal }

comparator [COMPUT SCI] A device that compares two transcriptions of the same information to verify the accuracy of transcription, storage, arithmetical operation, or some other process in a computer, and delivers an output signal of some form to indicate whether or not the two sources are equal or in agreement. [CONT SYS] A device which detects the value of the quantity to be controlled by a feedback control system and compares it continuously with the desired value of that quantity. [ENG] A device used to inspect a gaged part for deviation from a specified dimension, by mechanical, electrical, pneumatic, or optical means. { kəm'par·əd·ər }

comparator circuit [ELECTR] An electronic circuit that produces an output voltage or current whenever two input levels simultaneously satisfy predetermined amplitude requirements; may be linear (continuous) or digital (discrete). { kəm'par·əd·ər ˌsər·kət }

comparator-densitometer [ANALY CHEM] Device that projects a labeled spectrum onto a screen adjacent to an enlarged image of the spectrum to be analyzed, allowing visual comparison. { ¦kəm'par·əd·ər den·sə'täm·əd·ər }

comparator probe [COMPUT SCI] A component of a hardware monitor that is used to sense the number of bits that appear in parallel, as in an address register. { kəm'par·əd·ər ˌprōb }

comparing brushes [COMPUT SCI] Sets of metallic brushes which verify that all the cards in a gang-punching operation have been properly punched. { kəm'per·iŋ ˌbrəsh·əz }

comparing control change *See* control change. { kəm'per·iŋ kən'trōl ˌchānj }

comparing unit [ELECTR] An electromechanical device which compares two groups of timed pulses and signals to establish either identity or nonidentity. { kəm'per·iŋ ˌyü·nət }

comparing watch [HOROL] A hack watch, particularly one having an error determined by comparison with a chronometer. { kəm'per·iŋ ˌwach }

comparison [COMPUT SCI] A computer operation in which two numbers are compared as to identity, relative magnitude, or sign. { kəm'par·ə·sən }

comparison bridge [ELECTR] A bridge circuit in which any change in the output voltage with respect to a reference voltage creates a corresponding error signal, which, by means of negative feedback, is used to correct the output voltage and thereby restore bridge balance. { kəm'par·ə·sən ˌbrij }

comparison indicators [COMPUT SCI] Registers, one of which is activated during the comparison of two quantities to indicate whether the first quantity is lower than, equal to, or greater than the second quantity. { kəm'par·ə·sən ˌin·dəˌkād·ərz }

comparison lamp [OPTICS] An incandescent lamp whose luminous intensity is constant (although not necessarily known), and which is compared against other lamps in a photometer. { kəm'par·ə·sən ˌlamp }

comparison microscope [OPTICS] **1.** An arrangement of two microscopes connected by a special receiving ocular so that the field of one microscope is seen at one side of a dividing line and the field of the other microscope at the opposite side. **2.** A projection type of microscope in which the image is compared with a template or known pattern. { kəm'par·ə·sən 'mī·kraˌskōp }

comparison spectrum [SPECT] A line spectrum whose wavelengths are accurately known, and which is matched with another spectrum to determine the wavelengths of the latter. { kəm'par·ə·sən ˌspek·trəm }

comparison star [ASTRON] A star of known brightness used as a standard for comparison in determining the magnitude of a nearby celestial object. { kəm'par·ə·sən ˌstär }

compartment [MIN ENG] A section of a mine shaft separated by framed timbers and planking. { kəm'pärt·mənt }

compartment mill [MECH ENG] A multisection pulverizing device divided by perforated partitions, with preliminary grinding at one end in a short ball-mill operation, and finish grinding at the discharge end in a longer tube-mill operation. { kəm'pärt·mənt ˌmil }

compass [ENG] An instrument for indicating a horizontal reference direction relative to the earth. [GRAPHICS] An instrument used for describing arcs or circles with pencil or pen; has two legs hinged together at the top. { 'käm·pəs }

compass adjustment [NAV] The process of neutralizing the magnetic effect a craft exerts on a magnetic compass: permanent magnets and soft iron correctors are arranged about the binnacle so that their effects are nearly equal and opposite to the magnetic material in the craft, thus reducing the deviations and eliminating the sectors of sluggishness and unsteadiness. { 'käm·pəs ə'jəs·mənt }

compass amplitude [NAV] In marine navigation, amplitude relative to compass east or west. { 'käm·pəs ˌam·pləˌtüd }

compass azimuth [NAV] Azimuth relative to compass north. { 'käm·pəs ˌaz·ə·məth }

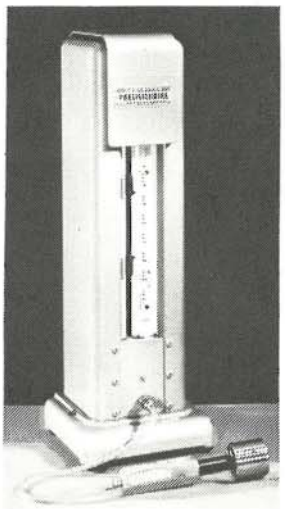
compass bearing [NAV] Direction relative to north as indicated by a compass. { 'käm·pəs ˌber·iŋ }

compass bowl [ENG] That part of a compass in which the compass card is mounted. { 'käm·pəs ˌbōl }

compass calibration *See* swinging ship. { 'käm·pəs ˌkal·ə'brā·shən }

compass card [DES ENG] The part of a compass on which the direction graduations are placed, it is usually in the form of a thin disk or annulus graduated in degrees, clockwise from

COMPARATOR



Pneumatic comparator in a plug gage for inspection of an inside diameter. *(Sheffield Corp.)*

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