

= NAD 3020 =

The NAD 3020 is an iconic stereo integrated amplifier by NAD Electronics , considered to be one of the most important components in the history of high fidelity audio . Launched circa 1978 , this highly affordable product delivered a good quality sound , which acquired a reputation as an audiophile amplifier of exceptional value . By 1998 , the NAD 3020 had become the most well known and best @-@ selling audio amplifier in history .

= = History = =

Launched circa 1978 ? 79 in an era where the principal preoccupation of hi @-@ fi manufacturers was power output , the sub- £ 80 (US \$ 135) low @-@ powered solid state amplifier , created and marketed by a then little @-@ known manufacturer , very rapidly acquired a reputation for excellent sound quality and exceptional value . Stereophile magazine called the NAD 3020 " ridiculously inexpensive " . It was the first integrated amplifier built with convincing ability to drive difficult loudspeaker loads , and a sound quality that far exceeded other integrated amplifiers at its price point for the time .

In an era when the NAD 's rated power output of 20 watts per channel continuous into 8 ohms was considered anaemic , the manufacturer claimed it could deliver much stronger power output into lower impedances under dynamic conditions (music or peak power output) . Indeed , it is capable of delivering 40 watts into 8 ohm , 58 watts into 4 ohm , and 72 watts into 2 ohm loads for a limited time if pushed . The amplifier 's main appeal was its inherent musicality , its ability to drive difficult speaker loads , and to allow audiophile grade source components to excel . Launching the product in the US at the Consumer Electronics Show , the company wired up a battery of loudspeakers in a way which presented an impedance of 1 @.@ 1 ohm , and the amplifier experienced no problems . Similarly , at its London launch , NAD successfully demonstrated it driving the Linn Isobarik , whose impedance characteristics are known to be very challenging for amplifiers . It was the best @-@ known and best @-@ selling amplifier in the annals of hi @-@ fi . The NAD 3020 revolutionised the amplifier segment of the hi @-@ fi industry .

= = = Design principles = = =

Bjørn Erik Edvardsen , NAD 's director of advanced development , set out to create an " inexpensive amplifier ... easily capable of driving the very best loudspeakers " . NAD eschewed the laboratory test equipment thinking , which was prevalent at the time , and instead aimed to make their amplifiers capable of properly driving " real loudspeakers " under realistic conditions . This paradigm shift gave rise to an amplifier that cost less and sounded better . NAD was able to achieve a low cost base by foreign manufacture . The company designed the product in Europe and had it produced in factories in Taiwan ? it was one of the first manufacturers to de @-@ localise production to Asia .

The design , and models following it , included " soft @-@ clipping circuitry " that protects against over @-@ driven signals , connections that allow splitting of the power amplifier section from the preamplifier , a button to bypass tone controls , and " Full Disclosure " power ratings measuring output power under real @-@ world loads .

= = = = Audio circuitry = = = =

The NAD 3020 has four inputs that can be switched via the front panel ? Aux , Tuner , Phono , Tape . The manufacturer claims the phono input , which can also be used with high @-@ output moving coil cartridges , contains a 6 @-@ transistor circuit " engineered for extremely low noise and nearly distortion @-@ free performance " . Reviewers note the pre @-@ amplifier 's " decent moving @-@ magnet phono stage " . The amplifier is bandwidth @-@ limited , incorporating infrasonic and ultrasonic filters to supposedly reduce the effects of non @-@ musical signals such

as acoustic feedback , disc warps and electromagnetic interference on the musical signals .

The amplifier has bass and treble tone controls which , according to the manufacturer , are " tailored for musically effective response in the high and low frequencies without altering the critical mid @-@ range tonal balance " . A loudness switch ? de rigueur in that era ? boosts upper and lower frequencies ; a " mute " switch reduces volume by 20 dB for low @-@ level listening . There is also a headphone socket mounted onto the front panel .

According to the manufacturer , the NAD 3020 is a high voltage design that uses the same large powerful output transistors that " other manufacturers employ in their ' 60 @-@ watt ' amplifiers " , enabling the amplifier to deliver power headroom for musical transients . Although the " Soft Clipping " circuitry limits the output voltage so that the transistors do not distort when driven beyond its rated power , Lucio Cadeddu of TNT considers this protection and the tone @-@ shaping circuitry to be unnecessary and advises users to avoid them " like the plague " .

The innovative split of pre- and power @-@ amplifier sections allows the use of the pre @-@ amp stage to drive multiple power amplifiers in parallel , or use long signal cables to connect to remote power amplifiers or powered speakers . This faculty became hugely popular with audiophiles , who would seek to isolate this " remarkably fine @-@ sounding preamp section " , to use with one or more external power amplifiers .

=== Power source ===

The amplifier has what the manufacturer calls a " dual @-@ mode power supply " , where the output stage is only loosely regulated , so it is free to supply the high voltages needed for musical transients and the large currents at lower voltages needed for driving low @-@ impedance loads in the power amplifier circuitry . The design also incorporates a separate regulated power supply circuit , fed from a secondary winding on the transformer , dedicated to the pre @-@ amplifier and tone control stages . It is thus claimed that intermodulation distortion and blurring of the stereo image due to power supply functioning cannot occur .

=== Styling ===

The styling of the NAD 3020 resembled that of other budget amplifiers of the time , and it was available in charcoal grey or silver . Stereophile commented that it was " inexpensive and looked it " . Although Cadeddu criticised the amplifier as " ugly , cheap and with a poor level of finishing " , he said that " the components used were fair but , clearly , the man behind its design knew what he was doing pretty well " .

=== Reception ===

The highly popular NAD 3020 is considered one of the most important hi @-@ fi components in the history of home audio . Sonically , it benefited from a design error where crosstalk between left and right channels presented better detail and more ambiance ; the error was corrected in a later guise . Its sound is described by reviewers as dark and warm , with a " sweet and sensual midrange " ; some reviewers observed a very noticeable rolling off at frequency extremes that may detract from sonic neutrality , and that its soundstage lacked precision but it was universally praised for its value for money . The amplifier was a hot seller , and the NAD 3020 alone achieved a record 1 @.@ 1 million units in its lifetime . The figure would be much higher if the sales of other amplifiers derived directly from its design are included . The quality made possible at a £ 79 (US \$ 133) price tag opened up the market for budget yet quality amplifiers , and spawned similarly low @-@ priced competitors such as ARCAM Alpha , Rotel 840 , Mission Cyrus I , Pioneer A400 , Denon PMA 350 and Marantz PM40 SE . In 2002 it ranked No. 19 in list of " The Hot 100 Products " by Stereophile . In 2011 , The Absolute Sound placed it at No. 9 in their list of " The Ten Most Significant Amplifiers of All Time " . The Absolute Sound remarked that this " iconic gem could embarrass amplifiers costing 10 times more with its big , warm and detailed sound and best of all , its affordable price

made it available to a wider audience . "

A retrospective review by Chris Martens said that the 3020 was not perfect , and while it may have been surpassed by other components according to other performance criteria individually , it was " better than any \$ 200 integrated amp had any right to be " . Martens complimented the quality of the electronic circuit design , noting in particular that the phono stage " sounded clearer and better balanced than many dedicated phono stages of the day " .

= = = Spin @-@ offs and legacy = = =

The NAD 3020 sold half a million units in the first three years of its life , and the second @-@ generation NAD 3020A replacing it , which corrected some minor design errors , proved even more popular than its predecessor .

Variants included NAD 3020B , NAD 3020E . An " almost identical " audiophile version dubbed NAD 3120 , stripped of tone controls and with higher quality loudspeaker binding posts , was released . The NAD 3020i is an " improved " version of the NAD 3020 that retailed at £ 149 (US \$ 250) when it was launched in 1991 . The NAD 7020 receiver (tuner @-@ amplifier) , that included the amplification circuitry of the NAD 3020 , received a mixed reception due to severe reliability issues . Following its release , and upon realisation that the product was much sought after for its pre @-@ amplifier section , a preamp version of the NAD 3020 was released under the name NAD 1020 .

In 2013 , the 40th year of the company , NAD launched a range of digital products , including a digital amplifier bearing the name NAD D 3020 .