Bb and C Rotary Trumpets in Orchestras of the United States: Perspectives from Professional Orchestral Trumpet Players on the Use, Audition Considerations, and Current Makes/Models

D.M.A. Document

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Abstract

Information regarding rotary trumpets in the United States is sparse and difficult to find, being limited to, mainly, snippets of interviews with individual players talking generally about their careers, and short paragraphs within larger works. This study is based on interviews with numerous professionals from top U.S. orchestras about their experiences regarding Bb and C rotary trumpets within the current classical music scene. Interviews collected information regarding equipment preference, pieces and orchestral audition excerpts that are performed with rotary trumpets, how the instruments feel and sound, and considerations for new players. In addition to the information from the interviews, this study includes a chart of current manufacturers and models of Bb and C rotary trumpets (and the features available) as well as a compiled list of all pieces which have been requested for trumpet orchestral auditions in the United States.

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Dedication

This paper is dedicated to every one of my family members.
I love you all.

Vita

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CHAPTER 1: INTRODUCTION

Introduction

Professional musicians make many decisions for a musical piece to come together. Numerous factors are taken into consideration in the practice room and during rehearsal to achieve the intended auditory performance. One of the most important considerations is the choice of equipment. First, one must consider the composer who wrote the piece, when they wrote it, and what style and era that composer was writing within. Then, the musician must look at the music to determine technical aspects such as range, possible transpositions, technical difficulty for the chosen key of the instrument, and demands on endurance. Finally, the musician must consider how their equipment choices will blend within the orchestra and venue. For trumpet players in orchestras within the United States of America, those considerations have consistently led to the use of the C Trumpet with piston valves. In this document we will explore the conditions in which trumpet players from the United States decide to instead use rotary trumpet.

In his article, "Using Different Keyed Instruments in the Orchestra: When, How, and Why," Michael Sachs describes how easy it is to become overwhelmed and paralyzed by the countless equipment combinations that exist. Therefore, it can be helpful to research the numerous instrument and mouthpiece options before becoming overwhelmed by hundreds of possible combinations. This can save a player from "headaches, chop fatigue, and a sense of wandering, unstable tone."[1]

It is typical for professional classical musicians in the United States to have spent a large portion of their music education in lessons and masterclasses with teachers who are professionals in the field. These professionals have the most experience using various

[1] Michael Sachs, "Using Different Keyed Instruments in the Orchestra: When, How, and Why," *International Trumpet Guild* 35, no. 4 (June 2011), 84.

equipment combinations regularly and have already vetted the many options on the market. Using advice from these professional mentors as a guide, a player finds the common trends and different options available and can then decide on where to begin the research for themselves.

It is the purpose of this document to aid in this research process for those wishing to learn more about rotary trumpets and their use within U.S. orchestras. Included within this text are interview responses from five professional trumpet players who work in the United State's most successful orchestras as well as relevant information from prior literature covering: the history of the rotary valve, rotary trumpet usage (past and present) in U.S. orchestras, why performers wish to use them and the pieces they use them on, audition considerations, makes and models currently available on the market, and which models these five performers recommend.

Statement of the Problem

Professional trumpet musicians frequently explore new combinations of equipment: trying new mouthpieces, play testing the latest models, and experimenting with accessories. Though performers may enjoy this process, it is also a necessity. At some point in a professional's career a specific mouthpiece, mute, or even trumpet model becomes a necessary addition to achieve just the needed sound or feel.

Audition lists for orchestra positions are beginning to say, "To be played on rotary trumpet," or "Though not required for the audition, this position will require rotary trumpet in performance." In the past, high-budget orchestras in the United States were typically the only orchestras that might have used this language for their auditions. Recently, however, the request for rotary trumpet has begun to appear on audition lists for orchestras of all sizes and regional locations. One clear example of the recent change is to compare the

Youngstown Symphony Orchestra trumpet audition lists from 2017 and 2019. This small, regional orchestra in Ohio added the rotary trumpet requirement in their 2019 audition where no mention of rotary trumpet had been two years prior.[2]

Unfortunately, in-depth information about the use of rotary trumpet is hard to find. The academic articles that do exist mention a desire for its increased use in the U.S., but are vague, and/or are partially outdated. The invention of all types of valves and their development is described in the literature, but typically these resources do not include the most recent developments and models of rotary valve trumpets. No one reliable source covers recent developments and models to the brass instrument industry, the sudden boom in use, or accounts from multiple professional players.

Need for the Study

"Now, trumpet sections in smaller orchestras across the country are also making regular use of them [rotary trumpets] in a substantial range of repertoire. In spite of the growing use of these instruments, most trumpeters have limited knowledge and little exposure to rotary trumpets."[3] Even though Burt wrote this 16 years ago, many trumpet players remain unfamiliar with rotary trumpets. Orchestral trumpet sections have been slowly increasing their use across the country, however, introducing a new instrument into the already numerous collection of instruments trumpet players require to own and master takes time. There also needs to be a supply of instruments available to purchase that fits the current demand. According to the research contained in this document, those instruments were only made more widely available in the United States within the last 10-15 years from German companies.

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[2] Youngstown Symphony. 2nd Trumpet Audition, 2017, 2019.

[3] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 52.

Despite the plentiful amount of information on trumpet in general, no compendium of information about the rotary trumpet exists for a musician working in the United States of America. There have been two relatively recent articles with Jack Burt (international performer and educator who specializes in rotary trumpets), but most mentions of rotary trumpet are buried within other interviews or texts. Those in the audition circuit attempting to win a job with a professional orchestra, professors who teach prospective professionals, and professional players can use this information obtained in this study. This information will better their chances for preparing for and winning jobs, keep them up with current trends in the industry, and help them select suitable equipment for performance settings.

Research Objectives

It is the objective of this research to answer six fundamental questions:

1. Why are professionals playing rotary trumpet?
2. For which excerpts/pieces do these professionals use rotary trumpets?
3. What equipment are the professionals using and why?
4. What differences from piston trumpets make the rotary trumpet desirable?
5. What rotary trumpet does the current market have available and what are the professionals playing and recommending?
6. What should players who are new to rotary trumpets consider?

The research will answer these questions through several methods. The first phase reviews published literature in books and peer-reviewed journals to accumulate and update information. This phase also compiled audition lists into a selection of orchestral excerpts to

study the recent trend in audition requests for rotary trumpet. The second phase was to conduct interviews with principal trumpet players from the highest-level professional orchestras in the United States. These interviews were designed to answer the fundamental questions listed above. The compiled audition lists from phase one were used to begin a narrative on the topic to ensure as much information as possible was gathered. Musicians are accustomed to one-on-one instructional sessions through private lessons, so this format of questioning is familiar and comfortable for relaying their expertise. The length of the interview was designed to fit within 1 hour, the length of a typical lesson. Those who were interviewed are referenced in the paper by an anonymous letter designation (Performer A, B, etc). The third phase consisted of acquiring a list of rotary trumpet makes and models available for purchase not only in the worldwide market, but more specifically for purchase in the United States.

Terms

Rotary Trumpet - For the purpose of this paper a rotary trumpet is built with at least 3 rotary valves in the key of Bb or C. The instruments we are concerned with in this paper are built with the levers and rotor action on a horizontal plane. Some designs included on the list in Appendix B are designed on a vertical plane and look closer to a traditional piston trumpet; however, those instruments are not as frequently used in U.S. orchestras as the former design. Unless otherwise specifically stated, "rotary trumpet" will refer to the horizontal design.

Rotary Valve - A mechanism designed to redirect the air within a brass instrument. When the actuating lever is depressed, the air is directed to a new series of tubes which

changes the pitch. What makes this valve distinct from its piston counterpart is its rotational motion within the valve casing rather than a vertical motion.

Piston Valve - A mechanism designed to redirect the air within a brass instrument. When the actuating button is compressed, the air is directed to a new series of tubes which lower the pitch. What makes this valve distinct is its vertical motion within the valve casing rather than a rotational motion.

Périnet Valve - Another name for a piston valve. Labeled for its inventor François Périnet.

Bore - Interior diameter of the cylindrical tubing. Usually measured at the junction where the cylindrical tubing enters the valve casing.

Hand stopping technique - The technique of partially inserting the left hand into the bell in order to lower the pitch one half step. This was one of the first techniques utilized to achieve chromaticism. However, there was a clear difference in sound quality when this technique was used.

International Standards Organization (ISO) System - For the purpose of this paper the ISO system will be used to reference specific pitch indications. E.g. C4 represents "Middle C" on the piano.

Garland or Heckel Garland - A band of (usually) nickel-silver material added to the very end of the bell flare before the rim (exterior).

German Words/Terms That Are Commonly Seen in Research Regarding Rotary Trumpets:

Klappen/*Überblaswasserklappe*/Vent Keys/Overblow Valve - A lever with an articulation point which when activated by the pinky finger of the right hand, lifts a pad to expose a hole in the tubing. The keys resemble a water key in look and design.

Drehventile - "rotary valves"

Maschine - "machine" or "mechanism." You may see this word with the name of the design of valve being used. E.g. *Zirnbauer Maschine*

Blechblasinstrument - German for "brass instrument"

Gild - "Gold plate"

Ventilblasinstrumente - "Valve brass instruments"

Assumptions and Delimitations

Assumptions

It is assumed that the average reader of this text will have a general knowledge of trumpets, notable past and present professional trumpet players, and the western culture of orchestral music.

We can also assume that the principal player is responsible for making or accepting the decision of instrument type (e.g. C Trumpet, Bb Trumpet, Rotary Trumpet, Piccolo Trumpet) and, in some cases, brand for the trumpet section. These decisions are factored based on recommendations from peers, teachers, research, conductors, other orchestra trends, marketplace, personal reasons, etc. It is worth noting that professionals often endorse certain brands and get financial compensation for being a sponsored artist (and some of the respondents to this research are in fact brand endorsers). This may have influence on their decision making if they are contracted to use that brand or are endorsed by the company because they are partial to that brand.

As the information was self-reported, the researcher has no quantifiable way to verify their accounts or ensure that all relevant material was included. Therefore, the responses provided are considered truthful and as complete as possible within the restraints of this document.

Delimitations

This paper was confined to trends in the United States of America. It was also confined to symphony orchestras where a principal trumpet is employed. It does not include interviews with members of professional opera orchestras or chamber orchestras.

This document does not indicate bias or dictate what is the "right" or "wrong" choice of instrument.

Limitations include language and descriptions regarding sound and feel: words like bright, dark, focused sound, lateral sound, articulation descriptions, etc. This technical vocabulary is imprecise but widely used in the profession, handed down from teacher to student. It is assumed that performers will at least be able to put those descriptors into the context of their own experiences.

CHAPTER 2: LITERATURE REVIEW

Review of Current Literature

The research regarding rotary trumpets is scattered and sparse. One of the main sources of information for trumpet players comes from the International Trumpet Guild (ITG) Journal and its corresponding conference speeches. In order to gather the information from conference lectures, a person would need to hear the information first-hand from personally attending conferences or would need to visit the ITG archives in Kalamazoo, Michigan on the western Michigan University campus. The average trumpet player is not going to attend every speech or read every article about rotary trumpets to get a thorough knowledge of the instrument, its variations, characteristics, and use. If they were ambitious enough to do research in periodical indexes, they would find some of the sources described below.

A few short opinion articles and one self-published book that exclusively discuss the rotary trumpet in the United States of America exist. Two articles consulted the opinion of one professional performer named Jack Burt and were published in the International Trumpet Guild Journal. The first article is a discussion of general topics revolving around rotary trumpet from his experience. As this article is 16 years old, some of its information (in particular, manufacturer information) is outdated. In the second article, Burt was interviewed by David Bilger who asked general questions, but focused on the Germanic approach to the rotary trumpet. Both articles are only a few pages long and describe the experiences from one player's perspective - Jack Burt - who had arranged his career to work in Germany part time, where rotary trumpets are the primary instrument of choice and also his personal preference. This position is not typical of most trumpet players in the United States, as piston trumpets are the more common instrument used nationwide. These

articles also do not include the opinions of any other players who no doubt have differing opinions about equipment, sound, or when it is necessary to use the rotary trumpet.

One book does exist about the rotary trumpet: it is entitled *Rotary Trumpet: An American Player's Perspective*, by Daniel Graham. This text includes information on rotary trumpets for players within the United States, though I do not endorse it from a scholarly perspective. The book is self-published and difficult to obtain (only one library in the United States owns it). Most accounts within the text are Mr. Graham's personal accounts and experiences without reference to any research. It is outdated, having been published in 2002. Only three brands of rotary trumpet were mentioned and compared within the text, two of which are no longer in production. Throughout the book are words of uncertainty and gaps of knowledge. For example, in the Preface, Graham explains his experience:

> It is also only fair to all parties to emphasize that, while I have confidence in my evaluations, my experience with the products of the rotary trumpet and mouthpiece manufacturers mentioned in this book involves a small sample size, and that there are many more makes and models of rotary trumpets and mouthpieces that I have not yet had the opportunity to play.[4]

Graham's Preface section indicates that a book should be written on this sparse topic; unfortunately, his book is not complete enough to serve as a scholarly text. He admits to not being an expert on the topic with limited experience on the rotary trumpet: "At my own level of performance, where the demands are less severe…."[5] Though his text

[4] Daniel Graham, "Preface," In *Rotary Trumpets: An American Player's Perspective*. (Rotary Trumpets on the Plains, 2002), iii.
[5] Daniel Graham, *Rotary Trumpets: An American Player's Perspective*. (Rotary Trumpets on the Plains, 2002), 70.

might be helpful for a young player looking to begin inquiring about rotary trumpets, it does not fit the scope of this document.

Another text that has valuable information on the rotary trumpet is the dissertation by James Russel Buckner, titled *Substitutions of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices*.[6] One chapter is devoted to "Rotary-Valve Trumpet versus Piston Trumpets." The 6-page chapter gathered useful information from several lectures, surveys, and older texts. It a good comparison of opinions from 30 years ago. An update is warranted.

Other available sources pertain to the history of rotary valve design, voice opinions about whether orchestras in the United States should begin using the instrument, consist of short snippets in larger works on another topic, or focus on the frequent use of the rotary trumpet in places such as Germany. The use of the rotary trumpet in the United States is considered a newer trend and only recently been an expectation for some auditions with orchestra jobs nationwide. One very informative historical text is a five-volume series titled *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection*. This collection spans the entire history of the trumpet with many beautiful, colorful photos of instruments from all around the world. Unfortunately, the final volume subtitled, *Volume 5 - The Modern Trumpet*, has not been released as of the date of this document. No doubt that it will include an abundance of information to add to this topic.

History of the Rotary Valve

From 1806 until the time a patent was filed with the Prussian kingdom in 1818, Heinrich Stölzel and Friedrich Blühmel separately experimented with a valve design which

[6] James Russel Buckner, "Substitutions of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices." DM Document, (Northwestern University, Evanston, 1989).

would enable brass instruments to play chromatic pitches. Stölzel and Blühmel's patent of a box valve design was the beginning of a range of inventions and experimentation with valve designs (many by Stölzel and Blühmel themselves) which would give brass instruments the ability to play all pitches within the Western European 12-note system.[7]

As a team they submitted a new patent for a rotary valve design in 1828. However, evidence exists which states that Nathan Adams created a rotary valve design in the United States a few years before the patent was submitted by Heinrich Stölzel and Friedrich Blühmel. It is hard to say which inventor truly created or conceptualized the design first. After many years of valve experimentation all over the world, the brass industry ended up with two generally accepted valve designs which are most commonly used today: the piston valve (also referred to as the Périnet valve) and the rotary valve.

A new rotary valve design by Blühmel was able to solve several problems present in previous designs. First, the tubing did not have any 90-degree angles to disrupt the airflow. Second, the distance with which the rotor had to travel was markedly lessened. This decrease in travel is also reflected in the player's fingers which have less distance to travel in order to depress and activate the valve mechanism. Third, a spring in the lever mechanism ensured that the valve returned to its original starting position. This lever and spring design has gone through many variations, including one that uses a string to connect the paddle to the rotor bearing. Lastly, the rotors were changed to a conical design to keep friction and suction down.[8]

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[7] Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection,* Vol #3 (Vermillion, South Dakota: National Music Museum, Inc, 2017), 1-5.

[8] Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection,* Vol #3 (Vermillion, South Dakota: National Music Museum, Inc, 2017), 140.

Some texts list Josef Riedl as the first inventor of a rotary design. Even though he did improve upon the design and has several patents to his name, he did not submit his rotary design to the patents' office until 1835, a solid 7 years after Blühmel and Stölzel.[9] According to Sabine Klaus, Reidl created the rotary design that European manufacturers regularly used after 1835. This design only required a quarter-turn rotation and had two passages through the valve. Klaus further states that major changes in design were mostly to the mechanisms and how they transferred the motion from the depression and lifting of the touch piece to the rotation of the valve.[10] The *radlmaschine* (translated "little wheel mechanism"), internal stops, three-point-wing device, the horseshoe stop, mechanical linkages versus string linkages, clock-springs, spiral springs, and flat springs are just some of the variations in rotor mechanism design one might have seen and still see to this day on rotary trumpets.[11] The practice was adopted fairly early on and is standard today for the leadpipe of a rotary trumpet to connect directly to the first valve casing. This is a very vital design difference from a piston trumpet (see Differences Between Rotary and Piston Trumpets). Nevertheless, several designers in the 19th century experimented with the leadpipe extending all the way down and around to connect to the 3rd valve casing just like the standard piston trumpets of today.

All families of trumpets went through this experimentation phase during the latter part of the 19th century - Trumpets, Flugelhorn, Bugle, Cornet, Saxhorn, and Posthorn. In fact, there was so much experimentation of valves and horn design that,

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[9] David Hickman and Amanda Pepping. Trumpet Pedagogy: A Compendium of Modern Teaching Techniques. Chandler (AZ: Hickman Music Editions, 2006) 303.
[10] Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection,* Vol #3 (Vermillion, South Dakota: National Music Museum, Inc, 2017), 143.
[11] Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection,* Vol #3 (Vermillion, South Dakota: National Music Museum, Inc, 2017), 1, 46-52.

> contemporary writers Hermann Pietzsch and Nikolaus Rimsky-Korsakov stated flatly that composers often did not have a knowledge of the instruments being used. Pietzsch indicated that composers were so ignorant concerning trumpets of the late nineteenth century that they actually wrote notes that were too low for the instruments being used. [12]

Composers would modify parts with revisions later or simply let the instrumentalists figure out which instrument best suited the part. Eventually the F Trumpet was replaced by valved instruments due to its chromaticism and the increasing upper register demands from composers.

Europe

In German-speaking areas, four-and-one-half foot long B-flat trumpets were made as early as the 1820s and C trumpets as early as 1824. They were mainly for military use (later for the increasing demands from composers of higher and higher pitches).[13]

Koehler's text on trumpet history concisely indicates the performers credited with introducing or creating the trends of instrument choice by region:

> Albert Kühnert began using the B-flat trumpet in Dresden around 1850, and by 1870 it was widely used in German orchestras. Eduard Seifert, principal trumpeter of Dresden Staatskapelle from 1895 to 1935, favored the use of a rotary-valve trumpet

[12] Richard Philip Birkmeier, "The Orchestral Trumpet of the Nineteenth Century: An Historical and Acoustical Survey" (PhD Diss., Northwestern University, 1984), 74.
[13] Sabine Katharina Klaus, *Trumpets and Other High Brass: A History Inspired by the Joe R. and Joella F. Utley Collection,* Vol #3 (Vermillion, South Dakota: National Music Museum, Inc, 2017), 154-6.

in B-flat along with smaller trumpets pitched in G and F, which probably helped him earn the nickname "*der Unfehlbare*"—literally, "the infallible one," or more colloquially, "Mr. Never-Miss." Morrow's student Ernest Hall introduced the B-flat trumpet in English orchestras around 1912, and Merri Franquin went one step further by introducing the use of the C trumpet in French orchestras around 1906.[14]

England and France, as mentioned earlier, rarely used rotary valves, probably in part due to poor quality of English and French designs and manufacturing. The German models have always had a reputation of being better builds and therefore sounding and feeling better.

United States

The Brass Band movement and the Golden Age of Band (1880-1920) is a large contributing factor to the piston trumpet taking a stronghold in the United States. Brass Bands started in Britain for blue-collar workers and amateurs, mainly funded and encouraged by the companies they worked for, and were made popular due to coveted competitions. The brass band tradition made its way to the United States thanks to the many families who immigrated from Europe, but is often attributed to the Dodworth Family.[15] At the time, the Saxhorn family of instruments were popular among the British Brass Bands (in Britain, France, and the United States) due to the uniformity of sound throughout the ensemble (because of the uniformity of build) and chromatic versatility. Being from France, Adolphe Sax often employed the use of piston-like valves in his

[14] Elisa Koehler, *Fanfares and Finesse: A Performer's Guide to Trumpet History and Literature*. (Bloomington: Indiana University Press, 2014), 78.
[15] Stephen L. Rhodes, *A History of the Wind Band* (self-pub., 2007), Chap. 6, https://ww2.lipscomb.edu/windbandhistory/rhodeswindband_06_19thcenturyamerican.htm.

saxhorns. When the Dodworth's brought the brass band tradition to the United States, they also brought the use of saxhorns.[16]

Patrick Gilmore is often attributed to starting the wind band trend in the United States. Over his lifetime, he led the Salem Brass Band, all the Massachusetts State Military Bands, the National Piece Jubilee of 1869, the World Piece Jubilee of 1872, and New York's 22nd Regiment Band. Musicians desired to be in his bands because the performance expectations were high and coveted. Gilmore's bands also offered stable employment compared to orchestras as there were only four symphonies established in the United States at that time, none of which had a full season. His name carried so much weight that for the World Peace Jubilee he was able to gather two-thousand musicians (not including the nine guest international ensembles) and twenty-thousand chorus members! Patrick Gilmore passed away in 1880, the same year that John Philip Sousa took leadership of the United States Marine Band. Under his leadership, the popularity of bands exploded on the professional, amateur, and academic levels. Robert L. Clarke was the head cornet player and virtuoso soloist of Sousa's band for many years. He was a huge promoter of the cornet, which, as outlined below, were often built in the French style with piston valves.[17]

In 1853, a famous band leader by the name of Allen Dodworth (from the Dodworth family mentioned above) wrote about the state of the valve developments in the United States. According to his account, the "cylinder" valve (also referred to as the Berlin valve) were the most popular design because of their durability and ease of repair. This was the valve design used on Saxhorns at the time. Piston valves were usually seen on French cornets. Trumpets coming to America from Germany typically had the German double valve

[16] Ned Mark Hosler, "The Brass Band Movement in North America: A Survey of Brass Bands in the United States and Canada," (PhD. Diss., The Ohio State University, 1992), 19.
[17] Stephen L. Rhodes, *A History of the Wind Band* (self-pub., 2007), Chap. 6, https://ww2.lipscomb.edu/windbandhistory/rhodeswindband_06_19thcenturyamerican.htm.

design rather than the rotary valve. However, Dodworth mentions that, "the Rotary valve is daily coming more into use, with many different arrangements of machinery to turn them, all possessing more quickness and activity than any other valve, but at the same time are much more delicate, and difficult to repair.[18]

Dodworth mentioned above that rotary valves were difficult to repair. Those who currently own a rotary trumpet can attest that the valves can be cumbersome to oil and difficult to reassemble compared to piston valves. The band boom in the United States included an abundance of military bands, schools, brass bands, amateur players, and wind bands who needed durable and uncomplicated mechanisms that were quick to maintenance and therefore preferred the piston designs. The U.S. manufacturer Stratton Band Instruments published a sale flier in 1884 which emphasizes the decline of the rotary valve and the rise in bands by stating:

> We have on hand a limited stock of Rotary Valve Instruments, both Upright and Over Shoulder shape. These instruments are at present out of style, and while a great many of our best musicians still use the Rotary Valve, the great demand is for the Piston Valve. To parties desiring to start a Band and not wishing to invest enough money to purchase a Light Action French Piston Set, are these Instruments especially desirable.[19]

Five years later (1889), another announcement from the same company was made: "At the present writing the great demand is for Piston Valves. For this reason we have

[18] Allen Dodworth, *Allen Dodworth's Brass Band School* (New York: Allen Dodworth, 1853), 13.
[19] John F. Stratton, *Price List of Brass Band Instruments*, (New York: John F. Stratton, 1884), 5.

discontinued the manufacture of Rotary Valve Instruments, and shall make no more until further notice."[20]It is without question that professionals were still using and experimenting with using rotary valves (especially since they were still being used regularly in Germany). However, it is quite clear that manufacturers in the United States did not find rotary trumpets worthy of the expenditure. Even today, local instrument manufacturers and retailers focus on piston trumpets of all designations.

History of the Use of Rotary Trumpet in U.S. Orchestras

"Pity the poor brassist who had as many as 40 key changes in a Mozart opera scrambling among his equipment for the right crook or shank when he had to put his natural horn into a new key so that he could play the tonic and dominant chords of the new modulation!"[21] Before the invention of valves, this was the reality for a trumpet player. The old Baroque opera houses contained shank and crook holders on the wall of the pit so that the brass players could manage their equipment through the operas. Composers needed to write rests into the music to allow enough time for players to change crooks. The invention of the valve began to alleviate this problem, but it did not come without its own set of troubles. Valved trumpets were a completely new invention in the early 19th century, and designs needed to be modified repeatedly until a working template would be accepted as adequate. Until that time, many trumpeters would continue to perform on F Trumpets. But, as the valve innovations became better and more readily accepted, musicians began using various cornets, trumpets, saxhorns, and flugelhorns in the orchestras.

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[20] John F. Stratton, *Price List of Brass Band Instruments*, (New York: John F. Stratton, 1884), 11.

[21] Maurice Faulkner, "The Rotary Valve Trumpet and the Vienna Style," *The Instrumentalist*, January 1972, 28.

Eventually, players settled for an instrument-of-choice to become the standard within different regions of the world. As it sits today, orchestras in the United States of America followed the French and European schools by going with C Piston Trumpets as the main choice and Bb Piston Trumpets when needed. It allows for relatively easy transposition and the pistons help create a crisp, directional sound. Other countries who followed this practice include France, the Netherlands, and Russia.[22] The United Kingdom generally prefers Bb Piston Trumpets. Germany, however, settled on rotary trumpets with C and Bb being used interchangeably as in the United States.

Players in the United States began to feel that the piston trumpet did not achieve the sound profile they wanted on certain repertoire. Performer E described it as, "feeling in the way," during those pieces with a desire to play quieter or use a towel to somehow blend with the orchestra better. One musician in 1986 tried to achieve this by using a flugelhorn mouthpiece with his piston trumpet rather than using a rotary trumpet.[23]

According to Edward Tarr in the *New Grove Dictionary of Music and Musicians*, the first U.S. orchestra to consistently use rotary trumpets was the Chicago Symphony Orchestra beginning in 1965 during Adolph "Bud" Herseth's tenure. His main reason for using them was to achieve a certain timbre.[24] Shortly after, in the 1970's, the Cleveland Orchestra, Minnesota Orchestra, Cincinnati Symphony Orchestra, Louisville Orchestra, and

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[22] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989), 168.
[23] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989), 203.
[24] Edward H. Tarr, "Herseth, Adolph," Grove Music Online. 2001; Accessed 19 Mar. 2020. https://www-oxfordmusiconline-com.proxy.lib.ohio-state.edu/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000012902.

the Los Angeles Philharmonic followed Herseth's example and began playing rotary trumpets. However, not everyone followed his example to use rotary trumpets:

> Trumpeters in the St. Louis Symphony Orchestra were still not playing rotary instruments in the late 1970's. Musicians in the Dallas Symphony Orchestra had rotary trumpets available but avoided using them because of the added playing difficulties of this instrument. The Denver Symphony Orchestra trumpet section rarely performed on rotary trumpets because of feelings that the instruments lacked sufficient projection.[25]

More and more musicians were beginning to feel as though rotary trumpets were a necessity for trumpet players in the United States, but clearly they were not immediately adopted throughout the country. In 1972, a few years after Herseth and the Chicago Symphony trumpet section began using these instruments, Maurice Faulkner took a trip overseas and upon his return wrote, "We couldn't help but wish that our trumpet sections at home would obtain some of these rotary-valve instruments which have a different type of sound so essential to the proper performance of Viennese romanticists."[26]

Perhaps Faulkner's plea reached enough trumpet players, because by the 1980s, trumpet players reported using rotary trumpets 40-50% of the time throughout the season

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[25] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989). 172.

[26] Maurice Faulkner, "The Rotary Valve Trumpet and the Vienna Style," The Instrumentalist, January 1972, 28.

in U.S. orchestras. The skill to play rotary trumpet also made it on the requirements for the St. Louis Symphony Orchestra audition list in 1986.[27]

Around the 1980s, the demand for rotary trumpet leveled out. Several of the respondents who were interviewed recalled no particular importance given to rotary trumpets during their years in college or preparation for auditions. There was also a lack of access to rotary trumpets to play. Not many universities' trumpet studio instrument inventories contained a rotary trumpet to learn with (some still do not). Therefore students, like the respondents in this study, were forced to borrow whatever was available or do without.

All of those who replied to the interview claimed difficulty playing some of the older models. Until approximately 15 years ago, the rotary trumpets available on the market were regarded by many as too difficult to play comfortably, despite their increasing popularity. Some trumpet players refused to attempt switching back and forth between their piston trumpets, which were comfortable and easy to keep in tune, versus the unruly and foreign rotary trumpets (more on this in Chapter 4). According to Buckner, early rotary trumpet designs (in the mid to late 1900's) had smaller bores, making it difficult to play and blend with the trombones.[28] The charts in Appendix B of this paper show a range of bores currently available in the market ranging from .433" to .460." The industry standard for C Trumpets in the United States market is a bore size of .462." Clearly the bore size is still typically smaller on a rotary trumpet, but other design changes by manufacturers have

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[27] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989). 173.

[28] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989). 173.

created a new confidence in playing rotary trumpets within the United State's orchestras (see Chapter 4: Results/Discussions: Current Trend of Usage in U.S. Orchestras).

Trumpet Player Perspectives on Substituting Instruments

Trumpet players often ask themselves what the appropriate equipment is for a particular piece as well as what is best for their embouchures. Sometimes the conductor will request a particular instrument. Some of these requests can be easy to manage, but some can be difficult. Since the purpose of this paper is to provide information for trumpet players in the United States regarding using rotary trumpets in orchestra (which in the United States is considered a substitution), it seemed logical to include comments from prior well-known professionals on how those substitutions were often received by the conductors.

More often than not, a different choice of instrument will not cause much conflict. The switch might require a new transposition or extra practice to make readjustments. Nevertheless, conductors have sometimes insisted on instruments that could not meet the requirement of the part (too high, too low, not chromatic). Players have been known to deceive the conductor when necessary and have even been complimented for the "change." The respondents to this interview, report that, on some occasions when conductors requested rotary trumpets, the section refused. In particular, Performer B's trumpet section refused to play rotary trumpets for a long time due to the poor quality of the rotary trumpets they had experience with. (More in Chapter 4: Other/Unexpected Findings.)

According to Adolph Herseth, former Principal Trumpet for the Chicago Symphony Orchestra for 53 years, "most conductors are not aware that we're using different trumpets. They're aware that we get different colors of sound…Just get the part, that's what they all want, get the part played…" Mr. Herseth relayed how a particular conductor appreciated not

having to worry about the trumpet section: "Mr. Herseth, I appreciate very much how you give me a different sound. I don't know how you do it, I don't want to know, but I like it."[29]

Similarly, Renold O. Schilke, fellow Chicago Orchestra Principal Trumpet, commented:

> It is strange [,] also, conductors come in and they demand a certain thing [,] but if they hear of something that is exceptional, they'll change their concept as to what their players will give them. Very few conductors will arbitrarily feel, "Oh, this has to be this or nothing else — this has got to be this quality of sound."...I played with...practically all the conductors of our time[,] except the very new ones[,] and I found them to be very receptive to new ideas. New ideas of sound, if it enhances the music that they are playing.[30]

The conductor of the Syracuse Symphony Orchestra, Christopher Keene, originally wanted his performers to play rotary trumpets. When George Cable purchased one and played it for Keene, he decided it was brighter than the piston trumpets at a loud dynamic and abandoned the idea.[31]

Performers A, D, and E all reported positive interactions with conductors regarding the switch to rotary trumpet. In their opinion, it has become established which repertoire

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[29] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989), 206.
[30] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989), 206.
[31] James Russell Buckner, "Substitution of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices," DMA Document, (Northwestern University, 1989), 206.

most orchestras choose to use rotary trumpets on, and any time the piece could go either way (piston or rotor) the conductor usually defaults to the Principal Trumpet's decision.

Composers Writing Styles During the 19th Century

Early 19th century composers typically wrote trumpet parts in octaves. When the octave was unreachable by the second trumpet part because it was too low, they had to get creative and find harmonies that worked within the harmonic series instead. This sometime resulted in sudden leaps of ninth's or more. Pieces written by Felix Mendelssohn and Robert Schumann employed mostly the notes of the harmonic series. Those which were outside of the series (E-flat, D-flat, A, B, and F) could be achievable with hand stopping techniques.

The invention of valves allowed composers to change the way they wrote music for the trumpet section.

> Schumann's use of the valved trumpet is much more progressive, exploiting the true chromatic capabilities of the instrument. When Schumann did call for a crook change from F to E in the first movement of the *Fourth Symphony* (revised c. 1851), he did so for a specific purpose, to avoid the awkward fingerings of the keys of F-sharp and B-major. Schumann even included a short rest in the music, allowing the performers to affect the crook change.[32]

[32] Richard Philip Birkemeier, "The Orchestral Trumpet of the Nineteenth Century: An Historical and Acoustical Survey," DMA Dissertation. (Northwestern University, 1984), 46.

Due to the proliferation of the valve, Franz Lizst transitioned his writing style from mostly octaves to having three trumpet parts where the 1st and 2nd players both have solos in his later works.[33]

Despite the introduction of valved trumpets, Brahms refused to write anything more than notes which fell into the harmonic series (with a few exceptions). He preferred to write as Mendelssohn had before him - in octaves. This is in contrast to composers like Richard Strauss and Richard Wagner who still wrote with crook key changes, allowing the performer to decide whether they would play on an F trumpet and change crooks (although Wagner made that difficult with how frequent some of his key changes were) or with a valved instrument and transpose.

> Wagner and Strauss were well aware that valved trumpets were being employed in their orchestras and that their trumpeters were transposing instead of changing crooks, but they chose to honor the memory of Berlioz and his great contribution to the art of orchestration by continuing the practice anyway, long after the need had vanished….There appears to be no musical reason whatsoever for this practice.[34]

In his dissertation, Richard Birkemeier claims that performers were too quick to abandon the F trumpet. He writes, "Anyone who has taken the opportunity to play an F trumpet or has heard one played will attest to the great beauty and dramatic quality of its sound." According to the spectrum analysis tests he conducted, a Bb rotary trumpet closely

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[33] Richard Philip Birkemeier, "The Orchestral Trumpet of the Nineteenth Century: An Historical and Acoustical Survey," DMA Dissertation. (Northwestern University, 1984), 47.
[34] Richard Philip Birkemeier, "The Orchestral Trumpet of the Nineteenth Century: An Historical and Acoustical Survey," DMA Dissertation. (Northwestern University, 1984), 161.

matched the sound quality to F trumpets, thus making it a more "authentic" choice in his opinion.[35]

Chapter Summary

The invention of valves in the 19th century changed the world of music forever. Trumpet players were no longer restricted in note choice and doubled in octaves. Composers began writing melodic lines and in varying keys without worrying about the players having to change crooks. It inspired the proliferation of wind bands and brass bands in the United States, many playing at the highest musical level and with brass instruments constructed with piston valves. Rotary valve trumpets have always been present in the United States, but have never been commonly used despite the regular use in other countries such as Germany. It wasn't until 1965 that Adolph Herseth from the Chicago Orchestra decided that rotary trumpets should substitute piston trumpets in the early Germanic repertoire to achieve a sound color that was less piercing and more blended with the orchestra. Other orchestras followed Mr. Herseth's example, and the practice is still sometimes used today.

[35] Richard Philip Birkemeier, "The Orchestral Trumpet of the Nineteenth Century: An Historical and Acoustical Survey," DMA Dissertation. (Northwestern University, 1984), 155.

CHAPTER 3: METHODS AND PROCEDURES

Research Design

The research reported in this document consists of one round of interviews that collected qualitative data, as well as one fillable matrix chart which is sent to each interviewee prior to the interview.

The subjects were chosen from the top orchestras in the United States which are listed as having 150+ concerts per regular season and hold a AA rating in *Musical America Worldwide 2019* (described in detail below). Players in this collection of subjects will not share the same preferences, professional background, or experiences, and although each orchestra desires to sound similar in that they wish to do justice to the pieces they play, each ensemble does sound different, sometimes dramatically. Although these interviewees will be primary sources, the information elicited will be subjective. It may represent different opinions or omit information due to lapse of memory or personal preference.

None of the respondents interacted with each other, nor did they have access to any other's responses.

The matrix chart collected quantitative data regarding which pieces committees select to use rotary trumpet for auditions. It can be cross referenced with the compilation of sources gathered from a different primary source— public audition lists.

This research was submitted for IRB review and was considered exempt.

Confidentiality

This study anticipates minimal risks for the participants. All efforts were made to omit names, organizations, dates, and associations that could be traced back to the subject. Any names seen in the text of this document were provided within previously published

materials. The participant could request that any information be omitted, and they could voluntarily cease participation at any time. For future publications, de-identified information may only be used with informed consent.

Verbal and virtual interviews were recorded and stored in a safe location until they could be functionally transcribed to maintain accuracy for this document. Recordings will be erased once the mandated storage timeline has passed.

There were no other expected risks of participation.

Throughout this document respondents may be referred to as "he/his/him" without any risk of revealing confidentiality. All 25 Principal Trumpet Players reflect the ongoing gendered pattern of hiring in brass, therefore, all five respondents were men.

Selection of Subjects

Sample size was determined by the number of orchestras who currently hold the AA annual budget rating (the highest rating) in *Musical America Worldwide 2019.* This resource releases a yearly database listing all orchestras in the United States of America and Canada and includes their budgets, contact info, season length, conductors and managers, and more. In order to be listed as AA, the orchestra must maintain an annual budget of $10,000,000 and above. It was then decided to narrow the AA field to only include orchestras who perform 150+ concerts a year. The number of orchestras fulfilling those criteria was twenty-five. From among the members of these twenty-five orchestras, players holding the Principal Trumpet position were asked to participate first as the player in the Principal position is responsible for instrument selection and deciding other factors for the rest of the section players. Each Principal Trumpet invited to participate could choose to participate or suggest another player in the section whom they believed to be knowledgeable on this topic.

Subjects were recruited via email directly where possible, or through an orchestra manager. If neither was reachable via email, a written letter was sent to the orchestra's listed online address.

Consideration was given for a larger pool of interviews. However, in a paper on the very topic of "How Many Qualitative Interviews is Enough," most researchers stated that it depended on circumstance. This research will follow the advice of Tracey Jensen and Jennifer Mason:

> ...it was the quality of the analysis and the dignity, care, and time taken to analyze interviews, rather than quantity, that she valued in the work of others...Mason also identifies the need within qualitative research to build a convincing analytical narrative based on 'richness, complexity, and detail' rather than on statistical logic.[36]

Question Formulation

The interview was developed by the researcher and consists of 13 questions. It is presented as specific, yet open-ended questions designed to elicit as much information as the subject is willing or able to contribute to the topic. Musicians are accustomed to one-on-one instructional sessions through private lessons, so virtual questioning via VoIP platform and telephone was preferred. It is also a familiar and comfortable way for relaying their expertise. Even the length of the interview was designed to fit within 1 hour, the length of a typical lesson.

The thirteen questions (given in detail below) were structured to answer these six fundamental questions:

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[36] Sarah Elsie Baker and Rosalind Edwards, "How Many Qualitative Interviews is Enough?" National Centre for Research Methods. Accessed September 10, 2019. http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf.

1. Why are professionals playing rotary trumpet?
2. For which excerpts/pieces do these professionals use rotary trumpets?
3. What equipment are the professionals using and why?
4. What differences from piston trumpets make the rotary trumpet desirable?
5. What rotary trumpet does the current market have available and what are the professionals playing and recommending?
6. What should players who are new to rotary trumpets consider?

Data Analysis

The thirteen questions asked to the interviewees were created to fit within the six questions presented at the beginning of this document. Once selections from each interview were transcribed, they were compiled and compared. The content was then compared to prior research.

The Trumpet Orchestral Excerpt Compilation Lists were collected and compiled for quantitative analysis. Each piece that receives a response will be tallied.

Twenty-five Principal Trumpet Players were contacted for this research. Five were able and willing to respond with either written responses or interviews. Two of the respondents filled out the Trumpet Orchestral Excerpt Compilation List. Their combined answers to that prompt can be found in Appendix C.

IRB Clearance

Procedure of Participation

Subjects were asked if they wished to participate via email. If they agreed to schedule an interview via VoIP or telephone, they were verbally asked whether they consent to participate before the interview and had the ability to ask additional questions. Subjects also had the option to submit their answers in a typed email or written format. Each were sent the Trumpet Orchestral List Compilation (Appendix A) which was estimated to take no more than 15 minutes and was submitted before the participation deadline. Interviews lasted approximately 35-65 minutes.

Internal Validity

Subjects were carefully chosen for this interview based on their position and level of expertise. To eliminate experimental mortality, there were 25 orchestras contacted with the expectation that not all would respond, but that enough would agree to participate so that a good sampling of qualitative data could be collected. Those contacted also had the ability of suggesting a colleague within the orchestra to participate in their stead if they felt someone else would have more time or be more qualified. With this option, there was a better chance for the most experienced individual to be interviewed.

Because there was only one round of interviews, there could not be discrepancies between tests or instrumentation.

External Validity

When a subject filled out the Trumpet Orchestral Excerpt List Compilation chart, they may have been inclined to recall more information relevant to the topic and could then

impart it during the interview. Having the questions available to them before the interview aided in allowing the subjects to gather their thoughts and submit a more complete response for the study.

Interview Questions

1. Can you discuss your history exploring and performing with rotary trumpets?
2. Why do you play rotary trumpets?
3. Can you tell me about the Bb and C Rotary trumpets you own and/or play on a regular basis?
4. What are the significant differences between playing the standard American piston trumpet and rotary trumpets? [For example, instrument and mouthpiece design, playability, sound, etc.]
5. What mouthpiece(s) do you use for rotary trumpets?
6. Are there technical differences to playability and approach?
7. If you were going to purchase a Bb or C rotary trumpet today, how would you pursue that?
8. For what orchestral repertoire do you play rotary trumpets? Please be as specific as you can.
9. Do you play the repertoire on rotary trumpets by personal choice or by recommendation?
10. Do you believe that rotary trumpets are being requested and/or used more often in American Orchestras? If so, why?
11. Do you believe that rotary trumpets are now a requirement for those looking to pursue trumpet performance as a career?

12. What recommendations would you give to players who are new to rotary trumpets?
13. Do you use rotary trumpets in other areas of your playing outside of the orchestra?

Trumpet Orchestral Excerpt List Compilation

An orchestral excerpt list was compiled based on previous compilation research and current orchestral audition lists. The research from House, Theurer, Stowman, Dobrzelewski, and Hunsicker, as well as recent orchestra audition lists within the researcher's personal library was included.[37] Only excerpts typically seen on Principal/Assistant Principal Positions were listed. For simplicity, the list does not indicate particular excerpts (or snippets), but rather, listed the entire piece. Exceptions included where two or more trumpet parts are in different keys (as in *Ein Heldenleben*), offstage solos, posthorn solos, or multiple movements/scenes where appropriate.

For each piece, respondents were asked to indicate their opinion on whether rotary trumpet is usually requested, whether they prefer rotary trumpet, and whether they preferred a different instrument for a piece where rotary trumpet is usually requested.

[37] Lawrence House, "A Survey of 43 Orchestra Audition Lists for Trumpet," International Trumpet Guild 7, no. 2 (1981): 28; Britton W. Theurer, "An Interpretive Discussion of the Solo Passages Most Frequently Requested at Orchestral Trumpet Auditions," International Trumpet Guild 7, no. 3 (1981): 9-21; William Stowman, "A Survey of Orchestral Audition Lists for Trumpet: An Update," International Trumpet Guild 19, no. 2 (1993): 48-50, 34; Jan-Krzysztof W. Dobrzelewski, "The Most Requested Trumpet Excerpts from the Orchestral Repertoire" (Doctoral Document, Arizona State University, 2004), 15-21; and John David Hunsicker, "Professional Orchestral Auditions for Trumpet: Criteria for Evaluation of Candidates, Common Mistakes and Concerns, and a Discussion of the Top Fifteen Excerpts Asked at Auditions" (Doctoral Document, Arizona State University, 2012), 55-56.

The full form and excerpt list can be found in Appendix B. Results from the respondents can be found in Chapter 4: Results / Discussions: Audition Excerpt Compilation Summary.

CHAPTER 4: RESULTS / DISCUSSIONS

Respondents Experience with Rotary Trumpets

All the respondents mentioned having received a basic introduction to rotary trumpets during either undergraduate or graduate study. However, none of them mentioned any level of comfort with them or owning any of their own equipment until they were actively playing in professional orchestras.

Performer D emphasized that the students in his college did not own their own instruments. The college at that time did own a set which he borrowed to play professional orchestral engagements and to play Serbian Brass Band music locally. This is contrary to Performer E's experience: his undergraduate school did not own any rotary trumpets. He did not have access to one until graduate school and his experience with rotary trumpet was very limited.

Performers B, D, and E all mentioned the need to borrow instruments once they began to participate in the orchestral audition circuit to get their first jobs. Performer D had to return to his alma mater several times post-graduation to borrow the studio's rotary trumpet throughout his first professional orchestral appointment. Borrowing instruments from prior teachers and colleagues is how Performer B made it through those early times in his career where a rotary trumpet was needed.

Although all the respondents mentioned a late start to their rotary trumpet experience, Performer E expressed that "the expectation of owning or having access to the instrument has increased." For players who are attending or have recently graduated from a college, the studio may have instruments one can borrow. For those who do not have the option available to them, the choices are to buy one or to borrow from a colleague. However, music in the United States is considered a "gig economy". Because of this,

borrowing a rotary trumpet from a colleague may prove difficult: colleagues may be competing against one another for the same job or may need to perform on a rotary trumpet during the same concert week. A level of trust is also required in sharing costly equipment, especially when air travel is involved.

If a performer has won an audition and is regularly employed, they can utilize instruments owned by the orchestra (if applicable) or work towards purchasing their own rotary trumpet. It is also important to take into account the frequency with which a professional may need to use the rotary trumpet. As an example, Performer E uses the rotary trumpet in orchestral performance approximately one to two times a month; frequent enough that a purchase was definitely warranted.

Why Professionals Use Rotary Trumpets in U.S. Orchestras

Three fundamental reasons came up when discussing why these professionals decide to use or not use rotary trumpets in their orchestras: sound profile, blend within the orchestra, and because it has become the standard.

Performer A describes the sound profile in relation to the whole orchestra: "The rotary trumpet has a different color palette than the piston trumpet. Because of this, it creates a different blend and sound with the rest of the brass section and orchestra as a whole, which is much more appropriate for certain repertoire."[38] Performer E described the sensation as "sticking out" with a piston trumpet. On Beethoven and Brahms he felt in the way and uncomfortable - "I'm in the way and I don't understand."[39] Performer B said he, "spent about five years playing [everything] on piston and it never felt comfortable." In the search to blend better, Performer E tried deeper cup mouthpieces and even playing into a

[38] Performer A, Email message to author, Feb. 09, 2020.
[39] Performer E, Interview, March 07, 2020.

towel. The rotary trumpet has a "lateral sound" as opposed to a "directional sound" with a piston trumpet. This lateral sound helps those performers feel more connected with the woodwinds and trombones for that repertoire.

Other words for the sound profile included "depth" and creating different "colors." For instance, on Bruckner, Wagner, and Brahms, Performer D describes getting a warmer color underneath a *mezzo-forte* but, "if you heat the horns up, especially if you play a more traditional rotary setup, you get a little bit of a different burn - like on Schumann 3 [Symphony] when you are playing with the horns in a smaller orchestration and you need to heat it up at the end you get a different burn."

Trumpet players are always searching to make the instrument easier and our embouchure more efficient. Because the player isn't fighting the sound concept with a rotary trumpet it feels better on the embouchure. Fighting pitch and intonation on any trumpet can cause massive fatigue issues which is not the kind of problem you want to have during long Romantic symphonies with big brass finishes!

The sound concept should also blend with what the trombones are doing. If the principal trombone player decides on playing alto trombone then the trumpets should play rotaries. If the trombones stick to tenor trombones, then the section would play pistons. Collaboration with the trombones is necessary to achieving the right sound.[40]

Articulation between the two instruments is also a major difference. Piston trumpets, "attacks too much," "has too much presence," and "has a more piercing sound," than rotary trumpets, especially in the literature specified below. On the contrary, "the rotary trumpet's articulations blend nicely with woodwinds and strings. The decorative role with timpani…it does the job better…makes more sense."[41]

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[40] Performer E, Interview, March 07, 2020.
[41] Performer E, Interview, March 07, 2020.

Performer E points out that it is also important to consider the hall you are performing in when choosing an instrument. In his orchestra's regular performance space, "the hall brings out the highs." Consider what the performance space does and does not do for you and the orchestra's sound.

It is also important to consider other people in the choice for whether to use rotary trumpet. Conductors will sometime request rotary trumpets, especially if they are a guest conductor and are accustomed to seeing them used. As an added economic bonus, many performers will get doubling pay if the instrument choice is justified. Performer B mentioned that the doubling fees are determined at the beginning of the season. He is given the list of repertoire for the season and after reviewing it along with his colleagues he puts in the appropriate requests. So, each piece he decides will be played on rotary trumpet needs to be justifiable.

Audience members can also be considered when deciding which type of trumpet to play. "If you fancy yourself a music connoisseur you know that these European composers were writing for a certain kind of instrument and you see that on stage, you feel a certain kind of way." Even though Mozart wasn't writing for rotaries: "they didn't have rotaries, but you see this thing and it looks European and you think 'yes. You made the right choice on that.'"[42] This holds true with music critics, also. They see it as the, "authentic choice," or as "something exotic," and write approvingly of it.

Not every player interviewed agreed with using rotary trumpets in the orchestra. Performer C puts into his own words very clearly why he believes rotary trumpets should NOT be used in the United States:

[42] Performer E, Interview, March 07, 2020.

> …we do not currently use rotary trumpets in our orchestra. There are several reasons for this. First, our concert hall…has an extremely blended sound, to the point where clarity is actually difficult to achieve. Many of the conductors that come here complain that they cannot hear the trumpets from the podium hardly at all. Since blending is really the only reason to play the rotary trumpet, there is no point or advantage.
>
> The second, and more important reason we don't use them is that I personally have a big problem with the globalization of orchestral playing in the 21st century. When I started in the business…all the major American orchestras not only sounded different from European orchestras, but they sounded different from each other. This is no longer the case, and individualism seems to be frowned upon. I maintain that we, as an American orchestra, should retain our unique American sound, and in our orchestra, we do. So no rotary trumpets.
>
> The third reason is that no other section in any American orchestra is expected to play different instruments for Beethoven, Brahms, Mozart, etc. Only the trumpets. As if the trumpet part was supremely important in this repertoire! It's ridiculous in my opinion, so we don't do it.[43]

In the beginning of this section it was pointed out that the respondents used rotary trumpets for three fundamental reasons: sound profile, blend within the orchestra, and because it has become the standard. However, Performer C argues that all three of these qualities are the very reason he does not use rotary trumpet. He believes the sound profile of orchestras in the United States should be unique, the blend is undesirable in some concert halls, and that it is not standard practice for other instruments to change equipment

[43] Performer C, Email message to author, Feb. 21, 2020.

or match German trends and therefore should not be "standard" for trumpets. When Performer B was asked if there was anything else he would like to add to the conversation about rotary trumpets, he responded:

> Be open to using rotary. Understand how they work and the benefits of them. Don't have the mindset that 'I am an American and will play an American C trumpet.' It allows us to have different sound qualities and timbres. Rotary gives us the ability to play in the appropriate manner for German repertoire.[44]

Clearly, two distinct mindsets exist on whether or not to incorporate this instrument into the rotation of standard equipment in the U.S. trumpet player's gig bag.

What Repertoire Rotary Trumpets are Being Used For

> When the lyric first theme of the Brahms Fourth Symphony, first movement, sings out in the strings, the orchestral trumpets blend their accompanying chords, rhythms, and melodies into the total sound with a mellow, round color - a warm, luscious, brass sound which complements the string tone, adding body to create a resonant, deep experience that touches the innermost emotions of the listener. One has to hear it to understand it![45]

In 1972, this is how Maurice Faulkner felt when rotary trumpets were played in European orchestras. The difference was profound enough that he wished orchestras in the United States sounded the same way. He felt that if a listener could go overseas and hear

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[44] Performer B, Interview, Feb. 22, 2020.
[45] Maurice Faulkner, "The Rotary Valve Trumpet and the Vienna Style," *The Instrumentalist*, January 1972, 28.

the rotary trumpet in context, they would agree that it needs to be used in the United States. The evidence of this document would suggest that Faulkner was correct as the trend to use rotary trumpet has increased.

Many of the texts already written on this topic (repertoire for rotary trumpet) usually give a general description such as: "Germanic repertoire of the Romantic period," or "Beethoven, Mendelssohn and the like." It is the purpose of this section to not only list the composers or works specifically mentioned by the respondents and within the literature, but to give a more specific report.

The following is a list of composers in which a respondent or research text has mentioned using or potentially using rotary trumpet for their works. Each one will have a brief description of the varying or consenting opinions found for the purpose of this document. Descriptions will only include variations or exceptions. Otherwise, it is to be assumed that all other works by that composer would be played on rotary trumpet:

Beethoven, Ludwig von

Performer D prefers natural trumpet on his works

Performer E does not play the Offstage *Leonore* calls on rotary trumpet. He could also play *Wellington's Victory* on either piston or rotary trumpet.

Brahms, Johannes

Some players prefer to play *Tragic Overture* on piston trumpet.

Bruckner, Anton

Performer E will play either piston or rotary trumpet on all of Bruckner works depending on the factors listed in the last section (e.g. trombone choice, venue, etc.)

Dvorak, Antonin

Performer A will only play rotary trumpet on Dvorak works sometimes.

Performer D does not play his works on rotary by choice. However, he believes his conductor may prefer it.

Performer E will play either piston or rotary trumpet on all of Bruckner works depending on the factors listed in the last section. However, he will usually play the *9th Symphony* on piston trumpet.

Haydn, Joseph

Performer D prefers to play his works on natural trumpet

Mahler, Gustav

Performer A will play *Symphony No. 4* only on rotary trumpet sometimes. All other works are on piston.

Performer B, D, and E play all works on piston trumpet.

Mendelssohn, Felix

Mozart, Wolfgang Amadeus

Performer D prefers to play his works on natural trumpet.

Rossini, Gioacchino

The only piece considered for rotary trumpet is *Overture to William Tell*

Schubert, Franz

Schumann, Robert

Performer D will play the *3rd Symphony* on rotary trumpet

Strauss, Richard

Performer A will play Strauss Waltzes on rotary trumpet. He will sometimes play *Death and Transfiguration* on rotary also.

Performer B plays all works on piston trumpet.

Performer D does not play his works on rotary by choice. However, he believes his conductor may prefer it.

Performer E does not usually play his works on rotary trumpet. However, he would consider *Zarathustra* on rotary trumpet.

Suppe, Franz von

Wagner, Richard

Performer D plays Wagner's operas on rotary trumpet.

Performer E will decide instrument based on the role the trumpet plays within the opera. If it is more of a Siegfried or Parsifal role, he will play it on piston trumpet. If it is a role closer to Rienzi he will play rotary trumpet. Choice is also determined by whether the whole opera will be performed.

It is important to reiterate important factors which can alter the decisions listed above one way or another. First, the choice of tenor or alto trombone can determine which instrument the trumpet section will play. The halls acoustic properties can force a player to second guess their decision. Other pieces programmed on the concert and how lively the conductor wishes to perform a work can also change an equipment decision if it makes sense for embouchure endurance or sound profile of the concert as a whole. Ultimately, "it comes down to what the music directors want."[46]

That is, unless you are a member of Performer B's trumpet section. After 30 years of politics and fighting with conductors, the section members in B's orchestra worked with the Musician's Union to write a clause in the contract. This clause enabled them to veto any conductor's decision for instrument substitution and that they must get paid double if an alternate trumpet is used. Section members struggled to play with the Monke brand rotary trumpets that the symphony owned. Performer B slowly discussed the options of playing rotary trumpet and eventually purchased a much better-quality instrument. The section players are now much more willing to perform with a rotary trumpet.

Despite the idea that using rotary trumpets on the literature listed above is sometimes considered standard practice and may be required in certain situations, "there is no right and wrong concerning instrument choice."[47] If the performer has the option to choose which instrument they will use, it is best to go with what is comfortable for the player and will produce their best product.

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[46] Performer B, Interview, Feb. 22, 2020.

[47] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004), 55.

Differences Between Rotary and Piston Trumpets

Design

The rotary valve trumpet typically is designed to hold across a horizontal plane rather than the vertical like the piston trumpet. Pistons are activated and move through an up-and-down motion, consequently making the orientation of the wrap vertical. Rotary trumpets, however, rotate left-to-right and are actuated by levers and paddles/touchpieces that are activated through short up-and-down motions. The tubing also wraps around the valves horizontally with a wider bend than traditional piston trumpets. Faulkner believes that the tighter bends of piston trumpets break down the harmonics within the vibrating tubes and create an edgier tone.[48] The gradual bends of the rotary trumpet are therefore seen to have a big impact on the rounded sound. Upon looking at Appendix B: Tables of Rotary Trumpet Manufacturers, Makes, Models, and Specifications one can see that some manufacturers now offer a tight-wrap version of their instruments. These models may therefore not only feel different to hold but may also play with a different sound.

The left-hand hold can take time for piston players to adjust to. Typically two braces connect the valve body to the valve casing which are where the performer's thumb and index/ring fingers hook into and support the weight of the instrument. It takes time to create the strength needed to hold it comfortably for extended lengths of time. High-end rotary trumpet designs will often have a trigger mechanism that attaches to the 3rd valve slide for proper adjustments. Other options manufacturers offer is a combined trigger which moves the 3rd valve slide and 1st valve slide simultaneously (to aid 1st valve pitch adjustment and to lessen the distance-of-travel for 1-3 and 1-2-3 valve combinations) as well as a trigger lever for the tuning slide. Those are all activated with the thumb of the left

[48] Maurice Faulkner, "The Rotary Valve Trumpet and the Vienna Style," The Instrumentalist, January 1972, 29.

hand. Jack Burt mentions that the 3rd valve slide trigger cannot expand far enough for a low F (F3) like piston trumpets.[49] However, being a Schagerl artist, he must have convinced the designers that this was a necessity as they are now offering an extended 3rd valve slide option. (More on sponsored artists in Chapter 4: Results / Conclusions: Equipment Choices)

The leadpipe assemblies between the two instruments are also quite visually different. Piston trumpets have a long leadpipe, a tuning slide crook that redirects the tubing back towards the player and enters the valve casing through the 3rd valve. A rotary trumpet has a much shorter (approximately 5.5") leadpipe assembly which feeds directly into the 1st valve casing. Performer B feels that the, "direct shot into the rotors changes the resistance." This leaves most of the length of the instrument after the valve casing, including the tuning slide.

Perhaps this is also why the bore size of rotary trumpets is typically smaller or have conical bores; if the bore was larger, the taper to get from the mouthpiece receiver to the valve casing would be more extreme as there is only 5.5" to do so. The bore size on piston trumpets made in the United States are typically .459" or .462" for C Trumpets. However, according to the information found in Appendix B the most commonly used bore sizes are .433," .440," and a conical bore. Conical bores enter the valve casing with one size, expand through the valve casing, and exit the casing at a different size.

The bell on a rotary valve flares sooner so that by the end, the bell fare is usually about 1/4" larger than a typical piston trumpet. It is also typical for manufacturers to offer the option of a nickel-silver garland on the end of the bell flare. Jack Burt mentions that "[Some people] feel they enhance projection and stability in forte playing."[50] The thickness

[49] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 52.
[50] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 52.

of the bell is a feature that manufacturers of rotary trumpets focus on. In the specifications of the instrument, bell thickness and material are almost always listed. Among the high-end brands can be found an abundance of options with bell material, thickness, flare, plating, and the bell garland.

Due to the nature of the valve design, rotary trumpets have a shorter valve throw (the rotors' distance of travel). This is reflected with a shorter throw on the paddles. For players who regularly play piston trumpet, not only can the paddles feel different because the shape of the right-hand changes when holding the instrument, but to depress the valve fully requires much less travel. Coordination between the finger motion and articulation need to be re-calibrated upon switching instruments. Performer B indicated, due to this difference, U.S. players typically do not play technically demanding passages on rotary trumpet, instead opting for the familiar feel of the C Trumpet they have spent so many years perfecting. Due to the nature of the design, rotary valves are more complicated to oil and maintenance. The rotor bearing, valve, and linkages all require regular oiling to ensure quick, quiet action. When it is time to clean the instrument it is recommended for most players to take it to a trusted repair shop as the valves and mechanisms can be easily damaged.

German-style rotary valves also have *Überblasklappen (*vent key). More on those below.

A feature on some recent models includes a vent hole in the 3rd valve casing. This is for quicker valve action and less resistance. See Figure 1 on page 53.

"The old idea that a rotary trumpet is heavy and ungainly is inaccurate now, especially when talking about newer rotary models."[51] According to the data collected on

[51] David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 62.

makes and models currently available in the market, many options are available to make rotary trumpets heavier or lighter. Some brands offer options to change the thickness and of the bell, lighter or heavier bodies, and varying materials throughout the body of the instrument. These factors all effect the weight and response of the instrument.

Pitch

The biggest and most important difference between piston and rotary trumpets is how the instrument is tuned. Orchestras in the United States typically play at A=440, but German orchestras prefer A=444, so they tune their instruments to fit that calibration. Performer B pointed out that if you put your tuning slide in the same approximate location as your piston trumpet you will be really sharp.

Each performer mentioned getting very acquainted with the pitch tendencies of the instrument as you would with any other instrument switch. Just as U.S. performers spend many years growing up on a Bb Trumpet and then take an extended amount of time to adjust to C Trumpet, so too must the player do the same with rotary trumpet. "You have to recalibrate your approach."[52] According to Performer E these are the pitch tendencies to watch out for; the low register wants to go flat, G5 is no longer sharp and can be quite flat on certain models.

Blow/Feel

"A rotary plays much like a small car drives: quick, easy response, agile maneuverability. In comparison, pistons play more like a truck - firmer, stronger, easier to push, but less agile, and with a stiffer throttle."[53] The German school of thought is that the

[52] Performer E, Interview, March 07, 2020.
[53] David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 62.

rotary trumpet requires a, "broader, thicker air stream and a more active, sustained breath support."[54] Because of the type of airstream it can be easy to overblow the rotary trumpet. One must keep restraint from forcing the airstream.

Performer B describes says that it is an intuitive difference, that the resistance is different, but that, "your body will respond to it if you are in tune to it. I balance with it as I move in and out of the dynamics. And then I [makes fast air sound] into it if I need more." He also feels contact with the instrument right away, as though it is up close, providing resistance, but the outcome is a broader attack. "Rotary trumpets emphasize blend over projection, and piston trumpets emphasize projection over blend. This is an oversimplification, but it does illustrate the point."[55]

Performer D states that the rotary trumpet does not give you smooth valve transitions for free, like a piston trumpet. He regularly refers back to Jay Friedman's blog to remind himself of the differences between the instruments. "It is widely thought that rotary valves produce a smoother legato then piston valves. This is a fallacy. The rule is: the longer the throw of a valve the more possibility for legato, because there is more room for sound between notes, which is the essence of legato."[56] Again, the consistent air stream is key.

Articulations

In an interview with Adolph Herseth, he describes articulation differences between rotary trumpets and piston trumpets:

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[54] David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 64.
[55] David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 63.
[56] Jay Friedman, "Trompete Rides Again," Jay Friedman (Blog), May 14, 2007, http://jayfriedman.net/articles/trompete_rides_again.

> The attack, the articulation factor between the piston-valve trumpet and the rotary-valve trumpet [is] one of the big differences. If you play a very hard, spitty, sforzando attack on any piston-valve trumpet (particularly the Bach C or the Schilke) you get a real sizzle where the note starts. You can't even come close to getting that kind of attack on a rotary trumpet even if you tried. Dave [Monette's piston trumpet] is a little bit in that direction too. I like it for certain things I prefer an instrument that doesn't have too much at the beginning of the note."[57]

Mr Herseth verifies what most of the respondents to this study mention; that rotary trumpets are good for pieces that do not require crisp or harsh attacks. In fact, it is so round that switching between piston and rotary instruments can take some readjustment from the player. When we play soft, we want to touch notes on a piston trumpet, says Performer E, but we can afford more front on articulations on rotary trumpet in soft dynamics, "because that roundness has already been given to you by the instrument." He suggests one may need to articulate more pointed and assertive because a "dah" attack may crack and because the instrument is naturally less percussive.

Sound

Most people relate the sound of a rotary trumpet to German orchestras and describe it as dark and rounded. Jack Burt, however, describes the tone to be mellow in the softer dynamics versus brighter in the loud dynamics, whereas a piston trumpet has the same tone quality throughout with a more focused tonal core. Almost all of the performers

[57] William Neal Woolworth. "A Biography of Adolf S. Herseth: His Performance and Pedagogical Contributions," DMA Document, (Arizona State University, 1993), 57.

describe the sound as having more colors than piston trumpets. They also agree that the sound is more "lateral" versus the piston trumpet which is "directional."

The change in colors happens in relation to dynamic level. "Learning how to pace your dynamics in such a way that if you want to play relatively loud but with a warm sound you have to be aware that past a certain point the color just immediately changes."[58] Often the terminology used by the respondents for the color change was "hot."

Klappen

Performer E feels as though many players do not know what the *klappen* on a rotary trumpet do and that many principal players do not have any *klappen* on their rotary trumpets. Indeed, these keys are a relatively new addition to the rotary trumpet design, perhaps showing up within the last 15 years or so.

Klappen is the German word for "keys." They can also be called Überblaswasserklappe ("overblow water keys"), Vent Keys, and Overblow Valves/Keys. Each key is placed on a nodal point on the main tuning slide. When the key is opened for pitches within the corresponding harmonic series, the result is a drop in resistance pushing against the embouchure and better intonation. This gives a sense of security to the player that the note won't be chipped and that they can save some of their embouchure endurance. "If you really want to nail a C or A really loud and you don't want it to end up being a Bb or a G [use the key]. And it's almost impossible to miss those notes from above when you throw the key down."[59]

The keys look like water-keys with long trigger handles and are activated by the pinky of the right hand except for the G key which is positioned to be use with the left hand.

[58] Performer E, Interview, March 07, 2020.
[59] Performer E, Interview, March 07, 2020.

Because the Bb key also doubles as the water key (sometimes referred to as a "spit valve"), caution should be taken when using it to ensure that the water has been emptied first. Otherwise the pitch may come out garbled.

The available *klappen* on the market and the pitches they are used for are as follows:

Spit-Valve Key / Bb Key	F, Bb, D, and F
A Key	E, A, C#, and E
Vienna C Key / Ab key	Eb, Ab, C, and Eb
G key	D, G, B, and D (this key is instead used by the left hand)

Included below are three photos, two of which were graciously provided by Jack Burt. Figure 1 is a photo of the vent hole that some manufacturers include in their designs for smoother action. Figure 2 is a photo of the main tuning slide with each key labeled. Figure 3 is personal recommendations from Burt on ways to utilize the keys in specific excerpts.

Figure 1: Vent hole in the 3rd Valve Casing

Figure 2: Labeled *Klappen*

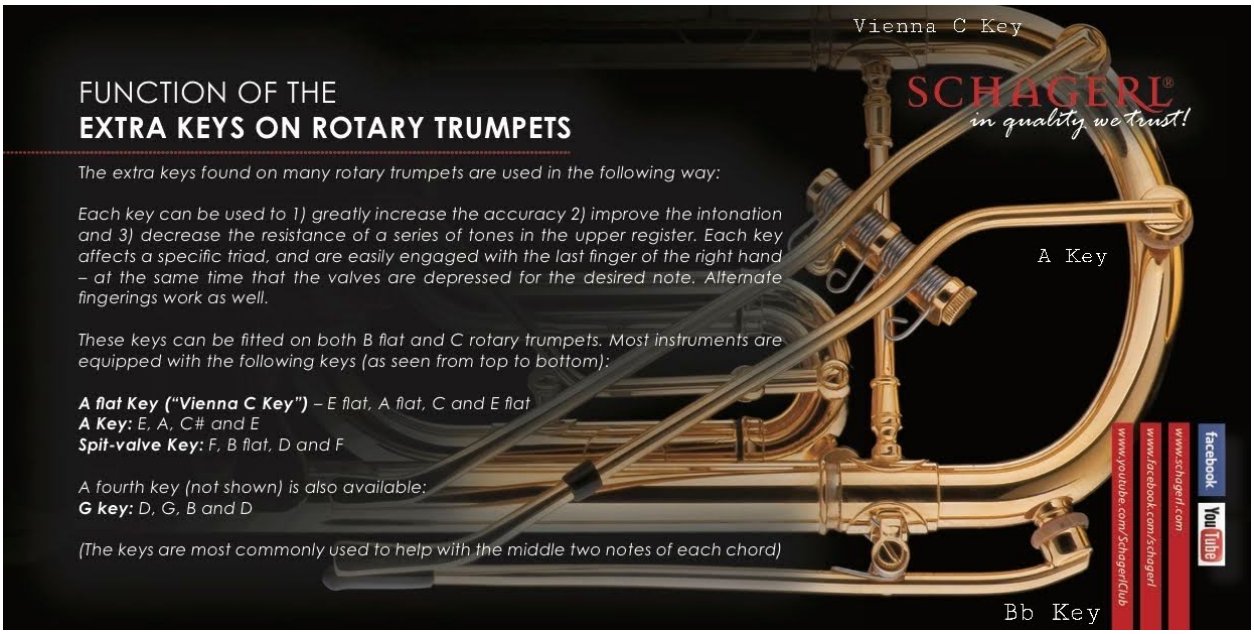
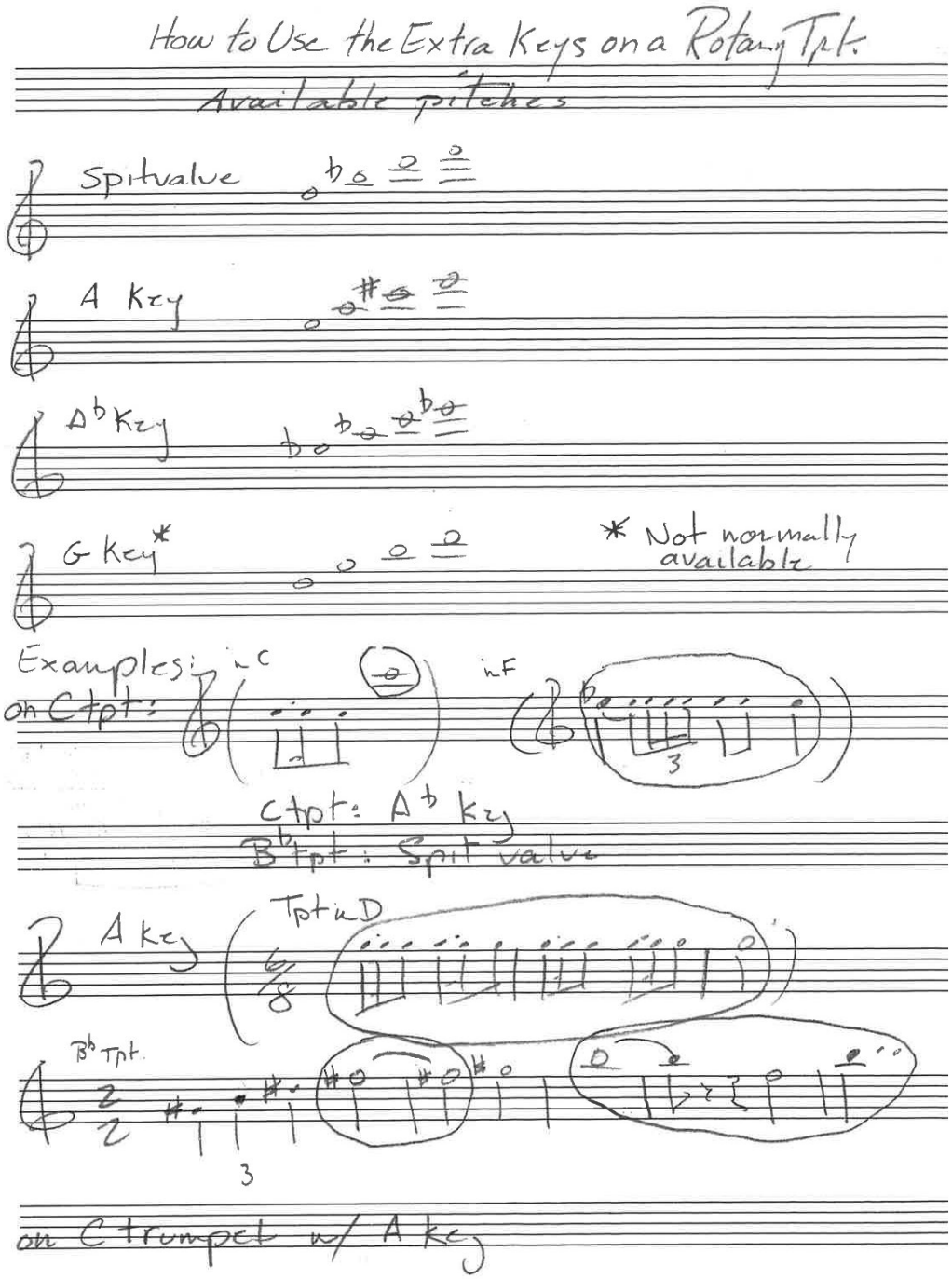


Figure 3: *Klappen* Examples



Equipment Choices

Of the literature that exists on this topic, the article, "The Rotary Trumpet: An Introduction" is, in fact, a great introduction. It was written 16 years ago and even in that amount of time, many things have changed in the industry. Burt mentions manufacturers Bach, Yamaha, and Blackburn offer rotary trumpet models in the United States of America. However, according to their advertisements and catalogs neither Bach nor Blackburn offer any Bb or C rotary trumpets (Blackburn recently retired and his company was merged with Pickett Brass).[60]

Burt also states that Rayburn Music Co. is the exclusive dealer of brands such as Martin Lechner, Josef Monke, Robert and Karl Schagerl, Thein. However, Rayburn Music is now only a seller of student rental instruments. Monke is a brand that Burt highly recommends in his 2004 article for American orchestras because of its heavy design and dark sound. Though Monke still has a website, it does not have any model information listed (see tables in Appendix B) nor has the research conducted for this document found any evidence of new Monke models on the market. The performers interviewed for this paper also consistently state a change in preference concerning which brands they prefer in the orchestras today.[61]

Professional musicians are often sponsored by instrument manufacturers to represent the brand by being a professional face for the brand. This can result in contracts to perform with that brand's instruments, take photos for advertisements, make videos about the brand, and more. This is especially true of the people who were interviewed for this research because of their positions and high level of performance. It is interesting to

[60] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 55.
[61] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 54.

note, however, that none of the respondents perform on the brand of instrument with which they are contracted as a performing artist. The only brands to be represented by the respondents of this research is Yamaha and Bach. As Bach no longer offers a rotary trumpet in the market, it makes sense that it is not promoted. Yamaha does offer a rotary trumpet (see Appendix C), however, it is not made in Germany and only one of the models contains a single *klappen* (YTR-948FFMGS). Yamaha must not mandate using their rotary trumpets in their performing artist contracts. For the range of this research, Jack Burt is the only player from the United States who was found as a representative of one of the European companies (Schagerl).

Performer A

Current Equipment:	Weimann Bb and C	Breslmair G2 mouthpiece
Past Equipment:	Ganter C, Monke Bb and C (two different eras)	various mouthpieces

"With the Monke Bb and C I used a JK Exclusive 4C and then a Breslmair G2. On the Weimann Bb and C I use a Breslmair H rim/G2 cup/J backbore. On the Monke D and Weimann D/Eb I use a JK Exclusive 4D."

In the beginning of his career the Ganter C with a standard 1.5C mouthpiece was what professionals were playing at the time, so he followed suite. The Monke Bb and C were instruments that the orchestra owned and what he was required to play on for some time. The section agreed that they were not adequate and decided to search for a new set of instruments. Monke redesigned their instruments and Performer A found them to be a marked improvement, so the orchestra purchased a set. For all these instruments he still played on his 1.5C, but after some searching settled on a JK 4C to play on the newer Monke.

The emergence of new and popular brands convinced the section to keep play testing new models. Upon trying Weimann they decided to purchase a set and Performer A switched to the Breslmair H rim/G2 cup/J backbore.

Performer B

Current Equipment:	Weimann C with standard body, heavyweight bell	Breslmair G2 or G3
Past Equipment:	Monke, Ganter, Weimann, Thein	

The symphony which Performer B is employed only recently began using rotary trumpets, so there was a need to purchase one for the orchestras inventory. The section was able to try a wide variety of models and the performance hall had a lot to do with the decision for them to purchase the Weimann light body with heavy bell thinking that the heavy bell helped to keep the sound intense for the space. Notice that his personally owned instrument is the light body.

The model he owns has interchangeable leadpipes and he switches them depending on the pieces he is performing.

Performer C

Current Equipment:	Prefers not to play rotary trumpet	
Past Equipment:	Lechner	

Performer C prefers to not play rotary trumpet at all, choosing to stick with piston trumpets. He feels that orchestras in United States should have their own unique sound.

However, when they were in a different performance space the conductor requested the section use the set of Lechner trumpets they have in inventory.

Performer D

Current Equipment:	Schagerl C with Zirnbauer valves and gold plating	Breslmair G3
Past Equipment:	Schagerl heavy body C, Ganter C and Bb, Weimann, Ricco Kühn	JK mouthpiece

For a long time, Performer D did not own his own instrument and instead had to borrow from his alma mater and colleagues. He was finally able to purchase a Weimann but did not quite like it. In fact, during the break of one rehearsal he was so frustrated that he grabbed the Schagerl from the orchestra inventory and played on that until he could purchase the current Shagerl he owns. For him, the Schagerl's with a rotary designed mouthpiece is the perfect balance for being clear, playing well, and for not sounding like a trumpet. Interestingly, his favorite instrument is still the Schagerl he borrowed from his alma mater.

Performer D emphasized his preference for the Zirnbauer valves with the Schagerl instruments and not the valves that they now make in-house. It is interesting that he struggled with the Weimann trumpets, because, according to their website all their models come with Zirnbauer valves. Even though the valves are from the same company, clearly a difference can be found between the way these two instruments are designed and/or manufactured.

Performer E

Current Equipment:	Schagerl Vienna C	Breslmair G1, G2, and G3 mouthpieces
Past Equipment:	Weimann C with heavy body and bell garland	Yamaha Bb, Miraphone C, Schagerl Berlin

Performer E prefers the Vienna model Schagerl because it affords more colors for him. The lighter body enables him to "light up at the louder dynamic," without problems. The Weimann heavy model with garland was the instrument he owned prior, but it was too dark. "It may have been good with a Bruckner [piece] with a huge orchestra, but it was more about color choices for me." He believes that the standard model performers buy is the Horsdorf Heavy Schagerl (this has been renamed to the Berlin Model).[62]

The orchestra used to have in its inventory two Yamaha Bb (Heckle copies) and a Miraphone C. He decided that they were unfit and decided to sell them.

Mouthpieces

Popular mouthpiece companies include Karl Breslmair, Brno Tilz, and Josef Klier (JK).[63] Every performer interviewed preferred either a Breslmair G1, G2, G3 or a JK mouthpiece with their equipment.

The rotary trumpet has the same size shank as piston trumpets and are interchangeable. It is of the belief of all those interviewed (except Performer C) that if the performer wishes to play on a rotary trumpet in order to get a different sound, color, or to

[62] "About the Schagerl Berlin Model Trumpet." Chuck Levins. Accessed March 22, 2020. https://www.chucklevins.com/products/schagerl-horsdorf-heavy-gold-plated-b-trumpet".
[63] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 54.

match the sound of a German orchestra, then it is appropriate to have the rotary style mouthpiece. It is also agreed that a rotary trumpet mouthpiece helps to improve intonation. Compared to a piston trumpet mouthpiece, a rotary mouthpiece has a rounder shape to the rim and softer bite. The respondents also believed there to be a difference with the shape of the backbore to account for the short leadpipe and smaller bore.

"If the desire of the trumpeter is to take advantage of the greater tonal palette that the rotary affords, one should seriously investigate the use of a mouthpiece that fits that type of trumpet best."[64] During masterclasses, Burt demonstrates the difference in sound and character by having students play an excerpt 3 ways: first, on their piston trumpets with the mouthpiece they regularly play on; then, on a rotary trumpet using the same comfortable mouthpiece; finally, on a rotary trumpet with a typical rotary-style mouthpiece. In his experience, the audience decidedly likes the sound of option 3 the best and option 2 the worst.[65]

Purchasing Rotary Trumpets in the Current Market

Unlike the typical manufacturing/retailer relationship in the United States where a performer must find a retailer that offers the instrument in order to purchase (the dealership model), German manufacturers often deal directly with the customer and make-to-order their instruments. Based on the abundance of options that the manufacturers are offering (see Appendix B) it makes sense why they would prefer to build upon order.

As it stands, those interested in purchasing a rotary trumpet have five ways to purchase or play test new models:

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[64] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 54.

[65] David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 64.

1. Some of the companies, like Schagerl, schedule occasional showings in the U.S. at colleges or some other venue. Following the company social media platforms would be the best way to find out where and when they will be.
2. The second method is to play test the brands which show at the yearly International Trumpet Guild Conference or similar venue with a handful of instruments to play test. These venues can be loud as there are many other players play testing instruments in the same cramped room.
3. Companies such as Schagerl and Josef Lidl Brno have one or two retailers they have partnered with to be a representative for them in the United States. In order to try specific configurations, one might need to call ahead to the store to see if the model is available. In certain cases, the player might have to buy or put a down payment on the instrument to try it.
4. The fourth way is to have a position with an orchestra. If the orchestra agrees to purchasing a new set of instruments, then companies will bring their models to the concert hall for the players to try.
5. The final method to purchase a rotary trumpet is to travel overseas and visit the manufacturers in person where the options are unlimited. Someone looking to purchase a rotary trumpet could also purchase through the company website directly if that option is available. Of course, that means the instrument would not get to be play tested.

An interesting thing to note is that no manufacturers in the United States currently build rotary trumpets. Kanstul Musical Instruments used to make rotary trumpet models in

the United States, but the company recently shut down. Blackburn was bought by Pickett Brass and their website does not show any models of rotary trumpet. Bach, subsidiary of Conn-Selmer, also offered a C Rotary Trumpet at least until 1992, but it is no longer advertised. Other companies such as O'Malley and Schiller are U.S. brands, but their instruments are built in China.[66] (See Appendix B: Table 1)

Performer A suggests trying all the "major" brands before settling on a purchase: Schagerl, Weimann, Kuhn, Thein, Dowids, Lechtner, etc. Performer B was able to try many brands through the orchestra search. These two respondents are the ones who seem from our conversations to have had the ability to try the most amount of makes and models of rotary trumpets. If Performer D had the option, he would prefer to travel to Europe and try as many options as possible. But, if he had to buy an instrument immediately, his option would be to, "scour the earth for a used Schagerl heavy with Zirnbauer valves." Performer E recommends purchasing a used instrument from a professional player who has played it in an orchestra, that way you know it works. Specifically, a Schagerl Vienna or Europa from the early 2000's.

The price for new models can reach as much as $7000 and may include an additional fee for transport overseas. Many base models without options hover in the $3000 to $4000 range. Used models are a good option for those who do not plan to play this instrument often. "There aren't a lot of people dropping $6000 on a [new] horn."[67] However, the respondents to this study reported using the rotary trumpet approximately 35-50% of the time, translating to an approximate one to two times a month for their orchestra positions.

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[66] O'Malley Musical Instruments. October 23, 2017. Comment on Rachel Yi, "Hi, I have a basic question about a bass clarinet on sale at your store." October 23, 2017. https://www.facebook.com/OMalleyMusicalInstruments/posts/1997064027249212; and TubeNet. April 13, 2009. Comment on sailn2ba, "What's the scoop on schiller tubas." April. 13, 2009.

[67] Performer E, Interview, March 07, 2020.

As is stated in other areas of this paper, they also recommend playing on a rotary trumpet often, even daily, to be accustomed to it. Sometimes, orchestral auditions also request rotary trumpet to be played. (See Audition Considerations and Appendix C: Orchestra Audition Lists.)

Current Trend of Usage in U.S. Orchestras

Performer A wrote about his experience with the increase of rotary trumpet use over time.

> Over the last 40 years the rotary trumpets are being used more and more. There are two reasons for this - First that the sound is seen more and more as the appropriate and needed tonal quality for the classical and Germanic repertoire. Also, and more importantly, the instruments being made now are much better than those made even 15-20 years ago. With access to better playing and better working instruments technically, this gives players the ability to play these types of horns and get a much better result.[68]

Every respondent (except Performer C) agreed that rotary trumpets are being used more often in orchestras within the United States. Their own requirement for the instrument has increased over the course of their careers. When asked, "Do you believe that rotary trumpets are now a requirement for those looking to pursue trumpet performance as a career?" those who responded to that particular question, agreed that it is necessary for trumpet players to be exposed to and feel comfortable playing rotary trumpet. Performer D emphasized the need by saying, "If you told me I had to play a week in any random U.S.

[68] Performer A, Email message to author, Feb. 09, 2020.

orchestra and told me the repertoire was going to include Schumann 3, I would be very very shocked if I showed up with a rotary and everyone was playing pistons."

"I have found that is it less about conductors wanting those instruments and more about players wanting to play them."[69] For trumpet players, these instruments provide a different sound, a way to blend, and a level of excitement. It is always exciting to be able to try new equipment and find a tool that works better to do our jobs. However, as stated in the last section, the price and availability of these instruments is still out of reach except for those who need them.

Audition Considerations

Hundreds of trumpet players across the United States of America are competing in auditions for a position within a professional orchestra. After years of practice, personal study, and guidance from many mentors they wish to be considered for a position with that orchestra and take part in an intensive audition process. Rotary trumpets have been a part of auditions for the highest-level orchestras since Adolph Herseth and the Chicago symphony introduced the trend in 1965. Since rotary trumpets have been used in U.S. orchestras more and more, the amount of auditions requesting or requiring that candidates be accustomed to the instrument have increased. "The expectation of owning or having access to the instrument has increased."[70] It will depend on which orchestra and for whom you are auditioning for as to what the expectation is. Performer B knew that the orchestra he was auditioning for preferred not to play rotary trumpet at all. He therefore decided to play on the instrument he was more comfortable with at the time, which was his Piston C

[69] Performer E, Interview, March 07, 2020.
[70] Performer E, Interview, March 07, 2020.

Trumpet. In Hunsicker's research of auditions, where he interviewed section players, conductors, and audition committee members, one respondent said:

> I don't think it is necessary to ask people to play rotary valves on an audition. Not everybody has a rotary-valve trumpet. Most orchestras own their own set, so whatever orchestra you're joining, you're going to end up playing one of those instruments or getting one of those instruments to match that set rather than your own anyways, and if you can play, you can play. And if you can play the trumpet and you can play music, then you can play music. For me if someone has a rotary at their disposal and they're comfortable with it, by all means use it, but the last thing I want to do is take somebody out of their comfort zone.[71]

Performer B also recommended considering for travel preparations. If you are taking a flight, consider whether you really need to take the instrument or if another option is available. Again, check the wording on the audition list carefully or ask the person of contact if the committee has a preference.

"You can't borrow a rotary trumpet, plug, and go," says Performer E. It is important to spend time with the instrument as you would any other new trumpet and learn intonation, feel, dynamic range, limits, articulation, etc. Adolph Herseth recommended playing rotary trumpets every day in the practice rotation. Even if the instrument is not requested for the published audition list, Performer D mentioned that he needed to play rotary trumpet for his audition trial weeks. Performer E, however, decided to play his audition on piston trumpet because he was more comfortable with it and the audition

[71] John David Hunsicker. "Professional Orchestral Auditions for Trumpet: Criteria for Evaluation of Candidates, Common Mistakes and Concerns, and a Discussion of the top Fifteen Excerpts Asked at Auditions," DMA Document (Arizona State University, 2012), 29.

committee did not request it. It is strongly recommended to pay attention to the wording of the audition list. For this reason, audition lists were gathered for this research. Below is a list of wording from recent audition lists collected by the author. (Since some orchestras do not wish for their audition materials to be made public, they will not be referenced to maintain anonymity):

- "Rotary trumpet required."
- "Rotary trumpet is optional."
- "Rotary preferred but not required."
- "The… section uses C rotary valve trumpets on the following repertoire. Rotaries are required on this repertoire."
- "Rotary trumpet suggested"
- "The use of rotary trumpet is not required to successfully audition for this position, however the winning candidate will need to be proficient on this instrument to complete the tenure process.
- "As requested, a rotary trumpet may be preferred for some sight-reading excerpts but is not required."
- "Although not required for the audition, this position will require rotary trumpet in performance."

It is important to point out that within the lists collected, two orchestras changed their wording regarding rotary trumpets. One orchestra had no mention of using rotaries in 2017. By 2019, the same audition list had inserted the final phrase from the above list.

Another important change was from an orchestra who released audition lists in 2010 and 2020:

2010: "Please note that for this audition, all excerpts may be played on piston trumpets."

2020: "Rotary trumpets are used by the…orchestra trumpet section. Please note that for this audition, performance on rotary trumpets is neither requested nor desired. All excerpts may be played on piston trumpets."

It is important to point out that between these two lists, the requirement did not actually change. Both 2010 and 2020 stated that certain excerpts "may" be played on rotary trumpets. There was, however, a need to clarify 10 years later that the auditionee was not required to audition on the rotary trumpet, nor was it preferable to the committee if they did. However, even if the auditioning player did not use or own a rotary trumpet for the audition, if they won the job, they would be required to play the instrument within the orchestra.

Even though this document is focused on audition lists within the United States of America, it is important to note that German orchestras use Rotary Bb Trumpets for a majority of pieces and for the whole season. The required piece is always either the Haydn or Hummel *Concertos* and is required to be played on Bb Rotary Trumpet.

Words of Wisdom for the Novice

The left hand can take time for piston players to adjust to. Typically two braces connect the valve body to the valve casing where the thumb and index/ring fingers hook

into and support the weight of the instrument. It takes time to create the strength needed to hold it comfortably for extended lengths of time.

Chris Martin, current Principal Trumpet of the New York Philharmonic, wrote a blog post on Jay Friedman's website about the importance of playing on a rotary trumpet regularly.

> One of the most helpful pieces of information he has given me is the fact that Bud spent so much time playing the rotary valve trumpet. I have taken his advice: adding regular, daily sessions on both Bb and C rotaries to my warmup and practice sessions. I have seen big gains in accuracy as well as noticeable improvements in the clarity and presence of my sound on piston trumpet. My legato, specifically the "pervasiveness" of my air to use Jay's term, has improved greatly thanks to my increased practice on rotary valves as well. Jay's assertion that piston valves allow trumpet players to relax the airstream during valve changes is absolutely accurate, and if you don't own a rotary valve trumpet, Jay's spare trumpet/trombone slide cream idea from his "Trompette!" article is an excellent substitute for this legato practice.[72]

The slide cream idea Martin and Friedman are referring to is a method of imitating the valve response of a rotary trumpet when you do not have access to one. This requires taking a piston trumpet (preferably a student model) and putting a thick cream on the pistons to make the valves sluggish. The air will be blocked between pitches by the valve itself due to the slower action and create a 1/2 valve sound. When the air is consistent despite the air

[72] Chris Martin, "Six Months in Chicago" *Jay Friedman* (blog), Feb 9, 2006, https://www.jayfriedman.net/articles/six_months_in_chicago.

blockage, it is a good representation of the type of air column needed for rotary trumpet according to Chris Martin and Jay Friedman.

On the same blog, John Hagstrom, current Principal Trumpet of the Chicago Symphony Orchestra, also noted how the rotary trumpet's valve transitions can help one's overall playing:

> Adolph Herseth…has often told me that playing successfully on the rotary valved trumpet makes the piston trumpet feel that much more comfortable. This is because the rotary valved instrument offers one the opportunity and/or challenge to produce musical phrases without the interruptions of the piston style valve changes. Since they are not an option, the player must make musical statements without using them as a potential crutch for continued response or having them as a potential obstacle to linear continuity.[73]

Despite the comments above which show how playing rotary trumpet can aide in the player's overall playing capabilities, Performer A feels that the two instruments still need to be treated differently.

> Don't approach it the same as your piston trumpet. Find a way to adjust articulation (not too pointed) as well as your air speed and air amount that you move through the horn. It's a different animal and should be treated as such. Come up with a unique formula that works for that equipment.[74]

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[73] John Hagstrom, "Trumpeting," Jay Friedman (blog), Feb 8, 2005, https://www.jayfriedman.net/articles/trumpeting_jay_friedman.
[74] Performer A, Email message to author, Feb. 09, 2020.

Novices should keep in mind German-made rotary valve instruments are tuned to A=444 and require a pitch adjustment. Respondents indicated practice on drones with a tuner is necessary to learn all the tendencies of the instrument.

Use Outside Orchestral Setting

Performer A

"I typically only use the rotary horns in the orchestra for this specific repertoire. Here and there I will maybe use them for chamber music like Hummel - *Military Septet*, which would be both fitting the use in classical repertoire as well as help me get the appropriate sound and blend."

Performer B

Experimented with using rotary trumpet early in the career in brass quintet, a solo recital, and for the Hindemith *Sonata*. He was unhappy with the results.

Performer D

When studying for Serbian Brass Band gigs he noticed all the big players play rotary trumpets. For the big festivals, hundreds of people play (typically) older models - whatever they can get their hands on.

Performer E

Performer E likes how the instrument blends with the woodwinds rather than as a solo instrument. Even though he enjoys listening to interpretations of solo and chamber repertoire performed by Gábor Tarkövi and Matthias Hoffs it, "isn't how I hear the literature."

Jack Burt mentions using the rotary trumpet in a larger amount of literature outside of the orchestra. Early on in his career, he was partial to the way the rotary trumpet sounded and frequently works in Germany.

Burt plays Rotary C Trumpet on the following pieces: Enescu *Legende*, Honegger *Intrada*, Stravinsky *L'Histoire du Soldat*. In contrast, Burt plays Rotary B-flat Trumpet on: Höhne *Slawische Fantastie*, Hindemith *Sonata,* and brass quintet literature such as the Böhme *Sextet* and Ewald *Quintets.*[75]

Other/Unexpected Findings

Design Problems

Members of the trumpet section in Performer B's orchestra refused to play rotary trumpets for decades. The orchestra purchased a set of Monke rotary trumpets that the section members found difficult and unacceptable to play. They did not want to be forced to play them so much that they worked with the union to write a clause which gave the section the power to decline playing rotary trumpet if a conductor requested it on a piece. Interesting that this mentality of a poor-quality instrument did not inspire U.S. manufacturers to produce a better quality instrument that would satisfy these players.

"After a few years of gentle nudging and bringing in instruments to try they [the section] said, 'Oh, instrument technology HAS changed. They are better instruments.'" The orchestra bought a Weimann Rotary C Trumpet which satisfied the section and now will play the instrument with a much more accepting attitude.[76]

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[75] Jack Burt, "The Rotary Trumpet: An Introduction," International Trumpet Guild 28, no. 3 (March 2004): 54; David Bilger, "Rotary Trumpets: A Conversation with Dr. Jack Burt," International Trumpet Guild 41, Issue 2 (Jan 2017): 63.
[76] Performer B Interview, Feb. 22, 2020.

Performer A mentioned a similar problem with the playability of the old Monke design. Even Performer D commented that he "came up in the generation that didn't have to go through the struggle to play 20 years on a Monke and refuse to play rotaries because of it…I wouldn't mind playing a traditional horn, but it's too hard to find a good one that plays in tune that doesn't make you miserable." This begs to question just how many orchestras in the United States (on all levels) have abandoned the thought of playing rotary trumpets because their only experience has been with poorly designed instruments.

Hall Problems

Performance space is always a consideration when choosing an instrument for a performance. In the case of Performer C, the hall is a major factor as to why he chooses not to use rotary trumpet. In his opinion, the sound of a rotary trumpet bends too much and gets lost. Performer B selected the particular model rotary trumpet based on his performance space. He felt that the heavy bell kept the sound intense for the hall. If a performer is not employed with an orchestra regularly, though, this is not a consideration.

American Sound

Performer C prefers to use piston trumpets to maintain a "unique American sound." He feels that orchestras in the United States have no reason to try and sound like orchestras in other countries of the world and that we should embrace sounding unique. Evidently, this is a division of thought in the trumpet community. The section players in the orchestra with Performer B had a similar mentality. He slowly convinced them to try rotary trumpets and they are more willing to play them, but it took time and trying the new designs of rotary trumpet on the market.

Sponsored Artists

The brands chosen as ideal for the respondents were not brands that they represent as a sponsored artist. Even though the five performers were sponsored by either Bach and Yamaha (or not at all), none of them preferred those models new or used. It is also interesting to note that none of the artists were sponsored by the companies which they prefer to play (Schagerl and Weimann). In fact, it was difficult to find any trumpet players from the United States who are sponsored by these companies (despite their increased use) except for Jack Burt.

Other

Performer D mentioned having the opportunity to play Serbian Brass Band music with a rotary trumpet he borrowed. It is a very popular music style in that culture with many bands having 2-3 trumpet players playing melodies and highly ornamented passages. Most of the musicians in that field use rotary trumpets. Hundreds of rotary trumpet players (many of them using older models) parade down the street during festivals, playing music all day long.

Audition Excerpt Compilation Summary

Figure 4: Audition Excerpt Compilation Summary Chart. A tally mark has been inserted for each response given. Two respondents filled out the form.

Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Adams, John	Doctor Atomic Symphony				
Bach, Johann S.	Brandenburg Concerto No. 2				
Bach, Johann S.	Cantata No. 51				
Bach, Johann S.	Christmas Oratorio				
Bach, Johann S.	Easter Oratorio				
Bach, Johann S.	Magnificat in D Major				
Bach, Johann S.	Mass in B Minor				
Bach, Johann S.	Orchestra Suite No. 3				
Barber, Samual	Capricorn Concerto				
Barber, Samuel	Symphony No. 1				
Bartok, Bela	Concerto for Orchestra				
Bartok, Bela	Piano Concerto No. 2				
Bartok, Bela	The Miraculous Mandarin				
Beethoven, Ludwig van	Consecration of the House Overture	Offstage trumpet call	II	I	
Beethoven, Ludwig van	Egmont	Overture	II	I	
Beethoven, Ludwig van	Leonore Overture No. 2	Offstage trumpet call	II	I	
Beethoven, Ludwig van	Leonore Overture No. 3	Offstage trumpet call	II	I	
Beethoven, Ludwig van	Piano Concerto No. 1		II	I	
Beethoven, Ludwig van	Symphony No. 4		II	I	
Beethoven, Ludwig van	Symphony No. 5		II	I	
Beethoven, Ludwig van	Symphony No. 7		II	I	
Beethoven, Ludwig van	Symphony No. 8		II	I	

Page 2 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Beethoven, Ludwig van	Symphony No. 9		II	I	
Beethoven, Ludwig van	Violin Concerto		I	I	
Berg, Alton	Kammerkonzert				
Berg, Alton	Violin Concerto				
Berg, Alton	Wozzeck				
Berlioz, Hector	Roman Carnival Overture				
Berlioz, Hector	Symphony Fantastique				
Bernstein, Leonard	Symphonic Dances from West Side Story				
Bizet, Georges	Carmen				
Brahms, Johannes	Academic Festival Overture		II	I	
Brahms, Johannes	Symphony No. 1		II	I	
Brahms, Johannes	Symphony No. 2		II	I	
Brahms, Johannes	Symphony No. 4		II	I	
Britten, Benjamin	Four Sea Interludes from Peter Grimes				
Britten, Benjamin	Sinfonia da Requiem				
Britten, Benjamin	Young Person's Guide to the Orchestra				
Brown	Singing in the Rain				
Bruckner, Anton	Symphony No. 4		II	I	
Bruckner, Anton	Symphony No. 5		II	I	
Bruckner, Anton	Symphony No. 6		II	I	
Bruckner, Anton	Symphony No. 7		II	I	
Bruckner, Anton	Symphony No. 8		II	I	
Copland, Eric	Billy the Kid				

Page 3 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Copland, Eric	El Salon Mexico				
Copland, Eric	Fanfare for the Common Man				
Copland, Eric	Lincoln Portrait				
Copland, Eric	Outdoor Overture				
Copland, Eric	Quiet City				
Copland, Eric	Rodeo				
Copland, Eric	Symphony No. 3				
Debussy, Claude	Fetes from Nocturnes				
Debussy, Claude	Iberia				
Debussy, Claude	La Mer				
Defalla, Menuel de	Three Cornered Hat				
Donizetti, Gaetano	Don Pasquale				
Dukas, Paul	Fanfare to La Peri				
Dukas, Paul	The Sorcerer's Apprentice				
Dvorak, Antonin	Cello Concerto			MAYBE	
Dvorak, Antonin	Symphony No. 8			MAYBE	
Dvorak, Antonin	Symphony No. 9			MAYBE	
Dvorak, Antonin	Violin Concerto			MAYBE	
Enesco, George	Romanian Rhapsody No. 1				
Franck, Cesar	Symphony in D minor				
Gershwin, George	An American in Paris				
Gershwin, George	Concerto for Piano in F				
Ginastera, Alberto	Dances to Estancia				
Goldsmith, Jerry	Chinatown				
Handel, George	Messiah				
Handel, George	Music for the Royal Fireworks				
Handel, George	Sampson				
Handel, George	Water Music				
Harbison, John	Concerto for Double Brass Choir and Orchestra				
Haydn, Joseph	Symphony No. 93		I	I	

Page 4 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Haydn, Joseph	Symphony No. 100		I	I	
Hayman	Pops Hoe-Down				
Hindemith, Paul	Concert Music for Brass and Strings				
Hindemith, Paul	Kammermusik No. 1				
Hindemith, Paul	Mathis der Maler				
Hindemith, Paul	Symphonic Metamorphosis				
Holst, Gustav	The Planets				
Ibert, Jacques	Escales				
Ives, Charles	Variations on "America"				
Janacek, Leos	Sinfonietta				
Kabalevsky, Dmitri	Colas Breugnon	Overture			
Kodaly, Zoltan	Dances from Galanta				
Kodaly, Zoltan	Hary Janos Suite				
Mahler, Gustav	Das Lied von der Erde	Intro			
Mahler, Gustav	Symphony No. 1				
Mahler, Gustav	Symphony No. 2				
Mahler, Gustav	Symphony No. 3	Offstage posthorn solo			
Mahler, Gustav	Symphony No. 4			MAYBE	
Mahler, Gustav	Symphony No. 5				
Mahler, Gustav	Symphony No. 6				
Mahler, Gustav	Symphony No. 7				
Mahler, Gustav	Symphony No. 8				
Mahler, Gustav	Symphony No. 9				
Mahler, Gustav	Symphony No. 10				
Martin, Frank	Concerto for 7 Instruments				
Mendelssohn, Felix	Fingal's Cave		I	I	
Milhaud, Darius	La Creation du Monde				
Mozart, Wolfgang	Piano Concerto No. 21		II	I	
Mozart, Wolfgang	Serenade No. 9	Posthorn	I	I	

Page 5 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Mussorgsky, Modest	Pictures at an Exhibition	Promenade			
Mussorgsky, Modest	Pictures at an Exhibition	Samuel Goldenberg and Schmuyle			
Prokofiev, Sergei	Cinderella Suite				
Prokofiev, Sergei	Lt. Kije				
Prokofiev, Sergei	Peter and the Wolf				
Prokofiev, Sergei	Romeo and Juliet				
Prokofiev, Sergei	Schythian Suite				
Prokofiev, Sergei	Suite from Lt Kije				
Prokofiev, Sergei	Symphony No. 2				
Prokofiev, Sergei	Symphony No. 5				
Prokofiev, Sergei	Symphony No. 6				
Prokofiev, Sergei	Violin Concerto no. 2				
Rachmaninoff, Sergei	Rhapsody on a Theme of Paganini				
Rachmaninoff, Sergei	Symphony No. 2				
Ravel, Maurice	Alborada a del Gracioso				
Ravel, Maurice	Bolero				
Ravel, Maurice	Concerto for the Left Hand				
Ravel, Maurice	Concerto pour Piano No. 1 en Sol				
Ravel, Maurice	Concerto pour Piano pour la Main Gauche				
Ravel, Maurice	Daphnis et Chloe Suite No. 1				
Ravel, Maurice	Daphnis et Chloe Suite No. 2				
Ravel, Maurice	La valse				
Ravel, Maurice	Piano Concerto in G Major				
Ravel, Maurice	Rhapsody Espagnol				
Ravel, Maurice	Tzigane				
Respighi, Ottorino	Fests Romane				

Page 6 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Respighi, Ottorino	Fountains of Rome				
Respighi, Ottorino	Pines of Rome				
Revueltas, Silvestre	Sensemaya				
Rimsky-Korsakov, Nikolai	Capriccio Espagnole				
Rimsky-Korsakov, Nikolai	Le Coq d'Or				
Rimsky-Korsakov, Nikolai	Russian Easter Overture				
Rimsky-Korsakov, Nikolai	Scheherezade				
Rossini, Gioacchino	Overture to William Tell			MAYBE	
Schoenberg, Arnold	Guerrelieder				
Schoenberg, Arnold	Theme and Variations Op 43b				
Schöenberg, Arnold	Variations for Orchestra				
Schubert, Franz	Symphony No. 8		II	I	
Schubert, Franz	Symphony No. 9		II	I	
Schumann, Robert	Symphony No. 2		II	I	
Schumann, Robert	Symphony No. 3		II	I	
Scriabin, Alexander	Poem of Ecstacy				
Shostakovich, Dimitri	Festive Overture				
Shostakovich, Dimitri	Piano Concerto No. 1				
Shostakovich, Dimitri	Symphony No. 1				
Shostakovich, Dimitri	Symphony No. 4				
Shostakovich, Dimitri	Symphony No. 5				
Shostakovich, Dimitri	Symphony No. 7				
Shostakovich, Dimitri	Symphony No. 8				
Shostakovich, Dimitri	Symphony No. 10				
Sibelius, Jean	En Saga				
Sibelius, Jean	Finlandia				
Sibelius, Jean	Symphony No. 1				
Sibelius, Jean	Symphony No. 2				
Sibelius, Jean	Symphony No. 5				
Strauss, Richard	Alpine Symphony				
Strauss, Richard	Also Spach Zarathustra				
Strauss, Richard	Death and Transfiguration			MAYBE	

Page 7 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Strauss, Richard	Der Burger als Edelmann				
Strauss, Richard	Der Rosenkavalier Suite				
Strauss, Richard	Don Juan				
Strauss, Richard	Don Quixote				
Strauss, Richard	Ein Heldenleben	Trumpet 1 in Bb			
Strauss, Richard	Ein Heldenleben	Trumpet 1 in Eb			
Strauss, Richard	Ein Heldenleben	Offstage Trio			
Strauss, Richard	Le Bourgeois Gentilhomme				
Strauss, Richard	Solome's Dance				
Strauss, Richard	Symphonia Domestica				
Strauss, Richard	Till Eulenspiegel				
Stravinsky, Igor	A Soldier's Tale				
Stravinsky, Igor	Card Game				
Stravinsky, Igor	Firebird 1919 Version				
Stravinsky, Igor	Firebird 1945 Version				
Stravinsky, Igor	Fireworks				
Stravinsky, Igor	L'Histoire du Soldat				
Stravinsky, Igor	Le Chant du Rossignol				
Stravinsky, Igor	Petrouchka	Dance of the Ballerina			
Stravinsky, Igor	Petrouchka	Valse			
Stravinsky, Igor	Petrouchka	Rehearsal 132/265 to the end			
Stravinsky, Igor	Pulcinella				
Stravinsky, Igor	Rite of Spring				
Stravinsky, Igor	Song of the Nightingale				
Stravinsky, Igor	Symphony in C Major				
Stravinsky, Igor	Symphony in Three Movements				
Stravinsky, Igor	The Rite of Spring				
Suppe, Franz von				MAYBE	
Tchaikovsky, Pyotr	Cappricio Italien				
Tchaikovsky, Pyotr	Nutcracker				
Tchaikovsky, Pyotr	Swan Lake				

Page 8 Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary
Tchaikovsky, Pyotr	Symphony No. 4				
Tchaikovsky, Pyotr	Symphony No. 5				
Tchaikovsky, Pyotr	Symphony No. 6				
Verdi, Giuseppe	Overture to the Force of Destiny				
Verdi, Giuseppe	Overture to Nabucco				
Verdi, Giuseppe	Requiem				
Wagner, Richard	Der Meistersinger	Overture	I	MAYBE	
Wagner, Richard	Gotterdammerung		I	MAYBE	
Wagner, Richard	Overture to Rienzi		I	MAYBE	
Wagner, Richard	Parsifal	Overture		MAYBE	
Wagner, Richard	Ride of the Valkyries			MAYBE	
Wagner, Richard	Seigfried Idyll		I	MAYBE	
Wagner, Richard	Tannhauser	Overture		MAYBE	
Weber, Carl	Oberon	Overture			
Webern, Anton	Passacaglia				
Webern, Anton	Six Pieces				

CHAPTER 5: CONCLUSIONS

Summary

The purpose of this document is to provide information for trumpet players wishing to learn more about the rotary trumpet, its use in orchestras within the United States of America, and information on current makes and models on the market. Interviews were conducted with Principal Trumpet Players in the country's top orchestras and analyzed with any prior literature pertaining to rotary trumpets. A compilation list of requested orchestral audition literature was compiled to show which excerpts require rotary trumpet and to aid respondents in the recall of pieces relevant to the topic. Another list was compiled of all the current makes and models or Bb and C rotary trumpets currently advertised as available in the market.

Why are Professionals Playing Rotary Trumpet?

It was discovered that not all performers prefer to play on rotary trumpets within the orchestra. Those who do not use them desire to perform with a unique sound rather than a globalized one. They also had problems with prior models of rotary trumpet and felt they were too difficult to play and cast them aside.

Those who choose to use rotary trumpets have several reasons they incorporate it into their playing. First, they appreciate the sound the instrument provides to the overall blend of the orchestra. It combines well with the woodwinds and alto trombone and has a lateral sound that does not stick out in certain literature. Because it is closer to the sound concept of the performer's inner ear, their embouchure does not experience premature fatigue from fighting the instrument. Second, the rotary trumpet allows the tone to change at different dynamic levels and give the performer a choice of colorful sounds from rich and

mellow to hot. Third, rotary trumpet is seen as the authentic choice for literature composed by German/Austrian composers in the 1800's from Mozart to the beginning of the late-Romantic composers (Strauss, Mahler, etc.). It is used as a substitution for the F Trumpet which was a lower pitched instrument (contributing to its sound) with no valves. German orchestras choose to perform on rotary trumpet for most of their literature inside and outside the orchestra and so the instrument is viewed as the right choice for composers of that nationality.

> It is not inconceivable that specialists on alto trumpets may arise, as they have with natural trumpets, but the satisfactory substitution of rotary trumpets in music written for alto instruments has eliminated the need for orchestral trumpeters to undertake the study and performance of alto trumpets, other than as substitutes for bass trumpets.[77]

For Which Excerpts and Pieces Do These Professionals Use Rotary Trumpets?

Every performer must make a calculated choice about whether to use rotary trumpet. They must consider whether the rotary trumpet works within the rest of the programming, hall, their personal preferences, and their playability. The general list consists of all works from Beethoven, Brahms, Bruckner, Dvorak (sometimes), Haydn, Mahler (sometimes), Mendelssohn, Mozart, Rossini (*Overture to William Tell*), Schubert, Schumann, Strauss (sometimes), Suppe, Wagner (sometimes). Any audition excerpt by the composers listed may appear on audition lists with a requirement to be played on rotary trumpet. Orchestra auditions are at the very least acknowledging the popularity of rotary trumpet by including a statement of preference for whether it is required on the audition. Committees

[77] Performer B Interview, Feb. 22, 2020.

do not always require rotary trumpet on the auditions, but it is quite possible it will be needed on the job after the audition is won.

Outside of the orchestra it is all determined by personal choice. If the rotary trumpet is the sound and blend the musician is looking for then they will use it.

What Equipment are the Professionals Using and Why?

All the respondents settled on C Trumpet models by the brands Weimann and Schagerl with Breslmair mouthpieces. The specifications and models were all different. They all agreed that these two brands have become the new, clear choice that fits their needs in the orchestra. Older models have fallen out of favor with most players because they are too difficult to manage or obtain. The mouthpieces of choice are Breslmair G1, G2, G3, and Josef Klier. A full list of brands is listed in Appendix B.

What Differences from Piston Trumpets Make the Rotary Trumpet Desirable?

Due to their completely different design from piston trumpets, rotary trumpets have a much different sound, color, projection, and articulation. Those qualities are desirable for playing certain repertoire with an orchestra. Recent rotary trumpet designs include *Klappen.* These keys make certain pitches easier to play and more accurate when engaged.

What Recommendations Do Professionals Have for Purchasing Rotary Trumpets in the Current Market?

Respondents recommended trying as many instruments as possible to determine which will be the right fit. Due to the difficulty of obtaining these instruments new and the high price tag, many of them suggest scouring for an instrument previously owned by a

colleague who has played it in their orchestras. After winning a position there may be more opportunity to try more models.

What Should Players Who Are New to Rotary Trumpets Consider?

Those who are new to rotary trumpet should consider practicing on a rotary trumpet every day to get accustomed to the unforgiving blow. Air stream, articulation, pitch, technique, and even handhold are all aspects that will need to be addressed upon practice.

Further Research

The research could be expanded to include the thoughts from a wider pool of trumpet players from the same professional orchestras. The opinions of conductors and collegiate trumpet professors would different perspectives to the subject matter.

An acoustical analysis could be performed on rotary and piston trumpets to determine how the differences in design are affecting the sound and feel differences.

Other research could be done to study the differences in mouthpiece design between the two instruments and why they work differently with the same instrument.

Since the 4th volume of *Trumpets and Other High Brass* was not yet published, perhaps a researcher would like to take the history of the valve and its design and trace how those design changes may have altered the trumpet community mentalities. In other words, were there certain areas which were more exposed to designs, good materials, war, travel restrictions, etc. It would be especially interesting to see the changes in trend within the last 20-30 years.

APPENDICES

Appendix A: IRB Materials

Research Protocol

I. **Objectives**

A. **Purpose of the Study**

The purpose of this study is to gather the opinions regarding Bb and C rotary trumpets from professional orchestral trumpet players who are employed in the highest ranking orchestral organizations in the United States of America. It has become increasingly commonplace to see trumpet sections playing rotary trumpet on stage, as well as to see statements on audition repertoire sheets requiring or requesting that certain excerpts be played on a rotary trumpet during an audition (or that the player at least have proficiency on the instrument).

The performers in these top-ranking orchestra positions would have extensive hands-on experience with the rotary trumpet. Other orchestras also desire to imitate these successful, high-ranking orchestras to keep up with current musical trends. Those in the audition circuit who hope to win a job with an orchestra, professors who teach music majors to be prepared for those auditions, and other professional players can use this information to better their chances for winning jobs and keep up with the current trends in the industry.

B. **Research Questions**

The research should answer the following questions:

1. Why are professionals playing rotary trumpet?
2. For which excerpts and pieces do these professionals use rotary trumpets?
3. What equipment are the professionals using and why?

4. What differences from piston trumpets make the rotary trumpet desirable?
5. What recommendations do professionals have for purchasing rotary trumpets in the current market?
6. What should players who are new to rotary trumpets consider?

II. **Background and Rationale**

The research regarding rotary trumpets is scattered and sparse. One of the main sources of information for trumpet players comes from the International Trumpet Guild (ITG) Journal and Conference speeches. No article or dissertation has collected the information from all these articles and speeches about the thoughts and opinions on rotary trumpets in orchestras. In order to gather the information from the conference speeches, a person would need to hear the information first-hand from personally attending conferences during their lifetime or would need to visit the ITG archives in Michigan. The average trumpet player is not going to go to every speech or catch and read every article about rotary trumpets to get a thorough knowledge of the instrument, its variations, characteristics, and use. If they were ambitious enough to do research in periodical indexes, they would find some sources, as described below.

A few short opinion articles and one book exclusively discuss the rotary trumpet in the United States. Two articles consulted the opinion of one professional performer by the name of Jack Burt and were published in the International Trumpet Guild Journal. The first article is a discussion of general topics revolving around rotary trumpet from his experience. As this article is 15 years old, some of its information (in particular, manufacturer information) may be outdated. In the second article, Mr. Burt was interviewed by David Bilger who asked general questions, but focused on the Germanic approach to the rotary trumpet. Both are only a few pages long and describe practice from one player's perspective

- Jack Burt - who had decidedly geared his career to working in Germany, where rotary trumpets are the regular instrument of choice and his personal preference. This position is not typical of most U.S trumpet players as piston trumpets are the more common instrument used nationwide. These articles also do not include the opinions of other players as they will no doubt have differing opinions about equipment, sound, or when it is necessary to use the rotary trumpet.

One book does exist about the rotary trumpet: it is entitled *Rotary Trumpet: An American Player's Perspective,* by Daniel Graham. In theory, this book should contain all the information this study is collecting. However, the book is self-published and not readily available (only one library in the country owns it). Even though Graham goes through many aspects of the rotary trumpet, from instrument design to how the instrument plays and many other topics, the information in his book is anecdotal as opposed to scholarly. Several gaps of knowledge show up in the content and words of uncertainty pop up throughout the book. In the Preface, Graham respectfully explains his experience:

> It is also only fair to all parties to emphasize that, while I have confidence in my evaluations, my experience with the products of the rotary trumpet and mouthpiece manufacturers mentioned in this book involves a small sample size, and that there are many more makes and models of rotary trumpets and mouthpieces that I have not yet had the opportunity to play.[78]

I agree with Graham's Preface section that a book should be made on this sparse topic; unfortunately, I do not believe that his book is complete enough to serve all the

[78] Daniel Graham, "Preface," In Rotary Trumpets: An American Player's Perspective. Rotary Trumpets on the Plains.

trumpet players of the United States. He admits to not being an expert on the topic as his experience on the rotary trumpet is limited ("At my own level of performance, where the demands are less severe…"[79] Since he was the primary source of information in the book, holes crop up in the information. Most professionals prefer multiple perspectives and a collection of information in order to make an informed decision for themselves. A performer looking to obtain knowledge on rotary trumpet in order to win an audition or because a conductor requires them to perform a piece on rotary trumpet would only be able to use this book as an introduction to stimulate further questions and research rather than as a complete source. Finally, due to the limited availability of this book, most will be unaware it exists and therefore cannot benefit from it. Graham's text will, however, be referenced in this research as an additional opinion.

Another text that has valuable information on the rotary trumpet is the dissertation by James Russel Buckner, titled *Substitutions of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices.*[80] An entire chapter in the text is devoted to "Rotary-Valve Trumpet versus Piston Trumpets." The 6-page chapter gathered useful information from several lectures, surveys, and older texts. It a good comparison of opinions from 30 years ago. An update is warranted.

Other available sources pertain to the history of the rotary valve design; voice opinions about whether orchestras in the United States should begin using the instrument; or focus on the frequent use of the rotary trumpet in places such as Germany.[81] Use of the

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[79] Daniel Graham, "Preface," In Rotary Trumpets: An American Player's Perspective. Rotary Trumpets on the Plains, 70.
[80] James Russel Buckner, "Substitutions of Trumpets in Orchestral Music: Origins, Development, and Contemporary Practices." DM Document, Northwestern University, Evanston, 1989.
[81] Maurice E. Faulkner, "Why American Orchestras Need Rotary-Valve Trumpets," Instrumentalist 39 (Feb 1985): 98.

rotary trumpet in the United States is considered a newer trend and only recently been an expectation for some auditions with orchestra jobs nationwide.

The proposed research will be unique in that it provides multiple top expert opinions in one place regarding the 6 research questions listed above. It is also unique in that it will include information regarding rotary trumpets in current auditions for orchestras and the pieces that request rotary trumpets. It will be supplemented with research regarding a brief history of rotary trumpet in the United States, a compiled list of pieces that a performer may be asked to play rotary trumpet on, a list of manufacturers and models available for purchase in the market today, explanations of design features with these instruments, and methods/suggestions for playing rotary trumpet. All this information together will be a much more complete reference for those who wish to play rotary trumpets in the professional circuit.

III. **Procedures**

A. **Research Design**

The research will consist of one round of up to 25 interviews that collect qualitative data, as well as one fillable matrix chart which is sent to each interviewee prior to the interview.

The subjects have been chosen from the top orchestras in the United States who are listed as having 150+ concerts per regular season. Players in this collection of subjects do not share the same preferences, professional background, or experiences, and although each orchestra desires to sound similar in that they wish to do justice to the pieces they play, each ensemble does sound different, sometimes dramatically. Although these interviewees will be primary sources, the information elicited will be subjective. It may

represent different opinions or omit information due to lapse of memory or personal preference.

The matrix chart will collect quantitative data regarding which pieces committees select to use rotary trumpet. It can be cross referenced with the compilation of sources gathered from a different primary source— public audition lists.

B. **Sample**

Sample size was determined by the number of orchestras who currently hold the AA annual budget rating in *Musical America Worldwide* (the highest rating). This resource contains a database listing of all orchestras in the U.S. and includes their budgets, contact info, season length, conductors and managers, and more. In order to be listed as AA, the orchestra must maintain an annual budget of $10,000,000 and above. From among the trumpet players who are members of these orchestras, players holding the Principal Trumpet position will be asked first because the player in the Principal position is responsible for choosing horns and deciding other factors for the rest of the section players. Each Principal Trumpet invited to participate can choose to participate or suggest another player in the section whom they believe to be knowledgeable on this topic.

Subjects will be recruited via email directly where possible, or through an orchestra manager.

Consideration was given for a larger pool of interviews. However, in a paper on the very topic of "How Many Qualitative Interviews is Enough," most researchers stated that it depended on circumstance. This research will follow the advice of Tracey Jensen and Jennifer Mason:

> ...it was the quality of the analysis and the dignity, care, and time taken to analyze interviews, rather than quantity, that she valued in the work of

others...Mason also identifies the need within qualitative research to build a convincing analytical narrative based on 'richness, complexity, and detail' rather than on statistical logic.[82]

C. Measurement / Instrumentation

1. Trumpet Orchestral Excerpt List Compilation: Appendix A

This compilation matrix was produced by the researcher. It is comprised of research lists by House, Theurer, Stowman, Dobrzelewski, and Hunsicker, as well as recent orchestra audition lists.[83] There are 209 pieces of music: for each piece, the subject will be asked to mark whether the rotary trumpet is A: Usually Requested, B: They Prefer Rotary Trumpet, and C: If A is True, Do They Personally Prefer a Horn Different from Rotary Trumpet if Given the Choice. Not all 209 pieces will have an entry, but this list is all the current possibilities an audition committee have considered for rotary trumpet up to this point. It is also a good selection to open the door of conversation for subjects to expand upon the topic.

2. Interview Questions: Appendix B

The interview was developed by the researcher and consists of 13 questions. It is presented as specific, yet open-ended questions designed to elicit as much information as the subject is willing or able to contribute to the topic.

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[82] Sarah Elsie Baker and Rosalind Edwards, "How Many Qualitative Interviews is Enough?" National Centre for Research Methods. Accessed September 10, 2019. http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf.

[83] Lawrence House, "A Survey of 43 Orchestra Audition Lists for Trumpet," International Trumpet Guild 7, no. 2 (1981): 28; Britton W. Theurer, "An Interpretive Discussion of the Solo Passages Most Frequently Requested at Orchestral Trumpet Auditions," International Trumpet Guild 7, no. 3 (1981): 9-21; William Stowman, "A Survey of Orchestral Audition Lists for Trumpet: An Update," International Trumpet Guild 19, no. 2 (1993): 48-50, 34; Jan-Krzysztof W. Dobrzelewski, "The Most Requested Trumpet Excerpts from the Orchestral Repertoire" (Doctoral Document, Arizona State University, 2004), 15-21; and John David Hunsicker, "Professional Orchestral Auditions for Trumpet: Criteria for Evaluation of Candidates, Common Mistakes and Concerns, and a Discussion of the Top Fifteen Excerpts Asked at Auditions" (Doctoral Document, Arizona State University, 2012), 55-56.

D. **Detailed Study Procedures**

Subjects will be asked if they wish to participate via email. If they agree to schedule an interview via VoIP they will be asked if they consent to participate verbally before the interview and can ask additional questions. Subjects will also have the option to indicate that they wish to conduct an interview via telephone or submit their answers in a typed format. They will then be sent the Trumpet Orchestral List Compilation (Appendix A) which will take approximately 15 minutes and is submitted prior to the interview. Interviews should last approximately 30-60 minutes.

Subject interviews will be saved on an external flash card/drive. Once selections from the interviews have been transcribed and the document has been approved by the committee, the recordings will be discarded.

E. **Internal Validity**

Internal:

Subjects are carefully chosen for this interview based on their position and level of expertise.

To eliminate experimental mortality, there are 25 orchestras being contacted with the expectation that not all will respond, but that enough will agree to participate that a good sampling of qualitative data is collected. Those contacted will also have the ability of suggesting a colleague within the orchestra to participate in their stead if they feel someone else is more qualified. This option allows for a better chance for the most experienced individual to be interviewed.

Because there is only one round of interviews, there cannot be discrepancies between tests or instrumentation.

External:

When a subject fills out the Trumpet Orchestral Excerpt List Compilation chart, they may be inclined to recall more information that is relevant to the topic they can impart during the interview. Having the questions available to them before the interview will aid in allowing the subjects to gather their thoughts and submit a more complete response for the study.

F. **Data Analysis**

Once selections from each interview are transcribed, they will be compared and compiled by subject for contributive content. The content will be compared to the prior research that has been collected.

The Trumpet Orchestral Excerpt Compilation Lists will be collected and compiled for quantitative analysis. Each piece that receives a response will be tallied.

G. **Risk**

There are minimal risks involved with participating in this research. Subjects' names will not be used in the write-up and information such as locations, dates, names, or other such references will be omitted and modified to keep the identity confidential.

Interview Questions and Script

"Hello, my name is Whitney Davis. I am a graduate student at The Ohio State University in the School of Music gathering research that will be used in my DMA Document.

I am studying the opinions of professional orchestral trumpet players on the use, design, and availability of the Bb and C rotary trumpet in the United States of America.

Given your position with one of the top-ranking orchestras in the United States, I am very interested in your opinions and experience with rotary trumpets. I would like to ask you a series of questions regarding the use and utilization of, the design, and availability of the rotary trumpet in the American professional environment.

The information you share with me will be beneficial to trumpet players, conductors, and teachers within the entire musical community. Your valuable experience within one of the greatest orchestras in the world will provide insight for many who may not have direct access to detailed information about the use, design, and availability of Bb and C rotary trumpets in America. Music performance is a highly competitive field with hundreds of trumpet players competing in auditions every day who would benefit from this compilation of information.

With this knowledge, performers have more equipment knowledge in order to use, "the right tool for the right job." They will also be well informed of what is available in the market for purchasing rotary trumpets if they see it fit to own one of their own. Conductors will also benefit from knowing which repertoire is typically utilizing rotary trumpet and what to expect when it is used in their orchestras.

This interview will take about 45-60 minutes of your time.

There is a small risk of a breach of confidentiality, but all efforts will be made to keep your name, organizations, and associations in the strictest confidentiality. I will not link your name to anything you say either in the transcript of this interview or in the text of my document.

Your de-identified information may be used or shared with other researchers without your additional informed consent.

For further publications, your de-identified information may only be used with your informed consent.

There are no other expected risks of participation.

If you have any additional questions concerning this research or your participation in it, please feel free to contact me, my document supervisor, or our university research office at any time.

Participation is voluntary. If you decide not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. You can, of course, decline to answer any question, as well as to stop participating at any time, without any penalty or loss of benefits to which you are otherwise entitled.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact The Office of Responsible Research Practices at 1-800-678-6251.

I would like to make a tape recording of our discussion, so that I can have an accurate record of the information that you provide to me. I will transcribe that recording by hand and will keep the transcripts confidential and securely in my possession. I will erase the tape after I transcribe it.

Do you have any questions about this research?

Do you agree to participate?

Great, let's begin…"

Interview Questions

Please answer each question as completely as you can.

1. Can you discuss your history exploring and performing with rotary trumpets?
2. Why do you play rotary trumpets?
3. Can you tell me about the Bb and C Rotary trumpets you own and/or play on a regular basis?

4. What are the significant differences between playing the standard American piston trumpet and rotary trumpets? [For example, instrument and mouthpiece design, playability, sound, etc.]
5. What mouthpiece(s) do you use for rotary trumpets?
6. Are there technical differences to playability and approach?
7. If you were going to purchase a Bb or C rotary trumpet today, how would you pursue that?
8. For what orchestral repertoire do you play rotary trumpets? Please be as specific as you can.
9. Do you play the repertoire on rotary trumpets by personal choice or by recommendation?
10. Do you believe that rotary trumpets are being requested and/or used more often in American Orchestras? If so, why?
11. Do you believe that rotary trumpets are now a requirement for those looking to pursue trumpet performance as a career?
12. What recommendations would you give to players who are new to rotary trumpets?
13. Do you use rotary trumpets in other areas of your playing outside of the orchestra?

This concludes our interview. Thank you so much for taking the time to talk with me about rotary trumpets today. I hope you enjoy the rest of your day!”

Recruitment Materials: Request for Participation

Subject: Request for Participation in an Interview Regarding Rotary Trumpets in America

Whitney Rose Davis
<Month><Day><Year>
The Ohio State University
850 Twin Rivers Drive
#1898
Columbus, OH 43216
614.738.0845
davis.4987@osu.edu

Request for Participation in Interview Regarding
Rotary Trumpets in America

Dear <First><Last>,

I hope this message finds you well! My name is Whitney Davis. I am a Doctorate student at The Ohio State University in the School of Music undertaking research that will be used in my DMA Document.

I am collecting the opinions of professional orchestral trumpet players on the current use, playing characteristics, and design of Bb and C rotary trumpets in the top American orchestras. The information collected will also contain recommendations and information for purchasing rotary trumpets in the current American market. Given your position in one of the top-ranking orchestras in the United States, I am very interested in your expert opinions and years of experience with rotary trumpets.

The information you share with me will be beneficial to trumpet players, conductors, and teachers within the entire musical community. Your valuable experience within one of the greatest orchestras in the world will provide insight for many who may not have direct access to detailed information about the use, playing characteristics, design, and market availability of Bb and C rotary trumpets in America. Music performance is a highly competitive field with hundreds of trumpet players competing in auditions every day who could benefit from this compilation of information.

With this knowledge, performers have more equipment knowledge in order to use, "the right tool for the right job." They will also be well informed of what is available in the market for purchasing rotary trumpets and to decide if their current performance load necessitates purchasing one. Conductors will also benefit from knowing which repertoire is typically utilizing rotary trumpet today and what to expect when it is used in their orchestras.

For your consideration, I have attached the interview questions to this correspondence.

Interview Information

Duration: This interview will take approximately 45-60 minutes of your time.

Risk: There is minimal risk of a breach of confidentiality, but all efforts will be made to keep your name, organizations, and associations in the strictest confidentiality. I will not link your name to anything you say either in the transcript of this interview (transcripts will not be included in the document) or in the text of my document.

Your de-identified information may be used or shared with other researchers without your additional informed consent.

For further publications, your de-identified information may only be used with your informed consent.

There are no other expected risks of participation.

Questions: If you have any additional questions concerning this research or your participation in it, please feel free to contact me, my document supervisor or our university research office at any time.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact The Office of Responsible Research Practices at 1-800-678-6251.

Transcription: I would like to make a recording of our discussion, so that I can have an accurate record of the information that you provide to me. I will transcribe the recording by hand and will keep the transcripts confidential and securely in my possession. I will erase the tape after the Document has been approved by the committee.

You may request any information from the interview be omitted from the transcript and subsequently the document at any time.

Participation: Participation is voluntary. If you decide not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. You can, of course, decline to answer any question, as well as to stop participating at any time, without any penalty or loss of benefits to which you are otherwise entitled.

If you Choose to Participate: Please send correspondence to davis.4987@osu.edu by <date> stating that you wish to schedule an interview time. To expedite the process, please send your preferred method(s) for the interview from the list below as well as availability for the interview.

Methods to Perform the Interview:

VoIP Methods	**Phone w/o video**	**Written Text**
Skype	Phone number upon request	Send via email to davis.4987@osu.edu
Facetime		Mail To: 850 Twin Rivers Drive, #1898, Columbus, OH 43216
Google Hangouts		
Google Voice		
Facebook Messenger		
Whatsapp		
Others by request		

If you Choose NOT to Participate: Feel free to do nothing or send a reply email simply stating you are not interested in participating. There will be no loss of benefits or penalty to you for not participating.

You may also recommend a colleague if you feel that they may have valuable information to contribute to this research. Please send recommendations and contact information to davis.4987@osu.edu.

Thank you so much for your time,

<Interview Questions are below>

Whitney Rose Davis
The Ohio State University, DMA (ABD)

Appendix B: Trumpet Orchestral Excerpt List Compilation Form

To be filled out by the Participant

Below is a compiled list of orchestral excerpts based on prior research from House, Theurer, Stowman, Dobrzelewski, and Hunsicker, as well as recent orchestra audition lists obtained by the researcher. Only excerpts typically seen on Principal/Assistant Positions are listed. For simplicity, the list does not indicate particular excerpts (or snippets), but rather, lists the entire piece except for cases where there are deviations from the standard 3 Trumpet part writing such as:

- Two 1st Trumpet parts (as in Ein Heldenleben with a 1st Bb and 1st Eb)
- A solo which requests a particular instrument (such as piccolo or posthorn)
- Offstage parts
- Multiple movements or scenes where deemed appropriate

Instructions

Please place a ✔ in the spaces of columns A, B, and C which, in your opinion, apply for rotary trumpet. Not all pieces need to have ✔'s. Only pieces which you prefer to use and/or are requested/required to use rotary trumpet.

The 3 Categories Are:

A: Rotary Trumpet Usually Requested/Required - These pieces are required or requested to have rotary trumpets played. This can be either "common practice" or requested/required by conductors.

B: You Personally Prefer Rotary Trumpet - If you prefer to play rotary trumpets on the piece listed. These can be requested/required pieces OR pieces that may typically be played on piston trumpets.

C: If A is True, Do You Personally Prefer a Horn Different from Rotary (if Given the Choice) - This category is for works which are "standard practice" to play on rotary trumpets (or are required by conductors) BUT you personally prefer to use a piston trumpet if given the choice.

Please complete and return to Whitney Davis at <email> any time before your scheduled interview.

Trumpet Orchestral Excerpt List Compilation

Composer Name	Piece	Section and Part	A: Rotary Trumpet Usually Requested/Required	B: You Personally Prefer Rotary Trumpet	C: If A is True, Do You Personally Prefer a Horn Different from Rotary if Given the Choice
Adams, John	Doctor Atomic Symphony				
Bach, Johann S.	Brandenburg Concerto No. 2				
Bach, Johann S.	Cantata No. 51				
Bach, Johann S.	Christmas Oratorio				
Bach, Johann S.	Easter Oratorio				
Bach, Johann S.	Magnificat in D Major				
Bach, Johann S.	Mass in B Minor				
Bach, Johann S.	Orchestra Suite No. 3				
Barber, Samual	Capricorn Concerto				
Barber, Samuel	Symphony No. 1				
Bartok, Bela	Concerto for Orchestra				
Bartok, Bela	Piano Concerto No. 2				
Bartok, Bela	The Miraculous Mandarin				
Beethoven, Ludwig van	Consecration of the House Overture	Offstage trumpet call			
Beethoven, Ludwig van	Egmont	Overture			
Beethoven, Ludwig van	Leonore Overture No. 2	Offstage trumpet call			
Beethoven, Ludwig van	Leonore Overture No. 3	Offstage trumpet call			
Beethoven, Ludwig van	Piano Concerto No. 1				
Beethoven, Ludwig van	Symphony No. 4				
Beethoven, Ludwig van	Symphony No. 5				
Beethoven, Ludwig van	Symphony No. 7				
Beethoven, Ludwig van	Symphony No. 8				
Beethoven, Ludwig van	Symphony No. 9				
Beethoven, Ludwig van	Violin Concerto				
Berg, Alton	Kammerkonzert				
Berg, Alton	Violin Concerto				
Berg, Alton	Wozzeck				

Berlioz, Hector	**Roman Carnival Overture**				
Berlioz, Hector	**Symphony Fantastique**				
Bernstein, Leonard	**Symphonic Dances from West Side Story**				
Bizet, Georges	**Carmen**				
Brahms, Johannes	**Academic Festival Overture**				
Brahms, Johannes	**Symphony No. 1**				
Brahms, Johannes	**Symphony No. 2**				
Brahms, Johannes	**Symphony No. 4**				
Britten, Benjamin	**Four Sea Interludes from Peter Grimes**				
Britten, Benjamin	**Sinfonia da Requiem**				
Britten, Benjamin	**Young Person's Guide to the Orchestra**				
Brown	**Singing in the Rain**				
Bruckner, Anton	**Symphony No. 4**				
Bruckner, Anton	**Symphony No. 5**				
Bruckner, Anton	**Symphony No. 6**				
Bruckner, Anton	**Symphony No. 7**				
Bruckner, Anton	**Symphony No. 8**				
Copland, Eric	**Billy the Kid**				
Copland, Eric	**El Salon Mexico**				
Copland, Eric	**Fanfare for the Common Man**				
Copland, Eric	**Lincoln Portrait**				
Copland, Eric	**Outdoor Overture**				
Copland, Eric	**Quiet City**				
Copland, Eric	**Rodeo**				
Copland, Eric	**Symphony No. 3**				
Debussy, Claude	**Fetes from Nocturnes**				
Debussy, Claude	**Iberia**				
Debussy, Claude	**La Mer**				
Defalla, Menuel de	**Three Cornered Hat**				
Donizetti, Gaetano	**Don Pasquale**				
Dukas, Paul	**Fanfare to La Peri**				
Dukas, Paul	**The Sorcerer's Apprentice**				
Dvorak, Antonin	**Cello Concerto**				
Dvorak, Antonin	**Symphony No. 8**				
Dvorak, Antonin	**Symphony No. 9**				
Dvorak, Antonin	**Violin Concerto**				
Enesco, George	**Romanian Rhapsody No. 1**				
Franck, Cesar	**Symphony in D minor**				
Gershwin, George	**An American in Paris**				

Gershwin, George	**Concerto for Piano in F**				
Ginastera, Alberto	**Dances to Estancia**				
Goldsmith, Jerry	**Chinatown**				
Handel, George	**Messiah**				
Handel, George	**Music for the Royal Fireworks**				
Handel, George	**Sampson**				
Handel, George	**Water Music**				
Harbison, John	**Concerto for Double Brass Choir and Orchestra**				
Haydn, Joseph	**Symphony No. 93**				
Haydn, Joseph	**Symphony No. 100**				
Hayman	**Pops Hoe-Down**				
Hindemith, Paul	**Concert Music for Brass and Strings**				
Hindemith, Paul	**Kammermusik No. 1**				
Hindemith, Paul	**Mathis der Maler**				
Hindemith, Paul	**Symphonic Metamorphosis**				
Holst, Gustav	**The Planets**				
Ibert, Jacques	**Escales**				
Ives, Charles	**Variations on "America"**				
Janacek, Leos	**Sinfonietta**				
Kabalevsky, Dmitri	**Colas Breugnon**	**Overture**			
Kodaly, Zoltan	**Dances from Galanta**				
Kodaly, Zoltan	**Hary Janos Suite**				
Mahler, Gustav	**Das Lied von der Erde**	**Intro**			
Mahler, Gustav	**Symphony No. 1**				
Mahler, Gustav	**Symphony No. 2**				
Mahler, Gustav	**Symphony No. 3**	**Offstage posthorn solo**			
Mahler, Gustav	**Symphony No. 4**				
Mahler, Gustav	**Symphony No. 5**				
Mahler, Gustav	**Symphony No. 6**				
Mahler, Gustav	**Symphony No. 7**				
Mahler, Gustav	**Symphony No. 8**				
Mahler, Gustav	**Symphony No. 9**				
Mahler, Gustav	**Symphony No. 10**				
Martin, Frank	**Concerto for 7 Instruments**				
Mendelssohn, Felix	**Fingal's Cave**				
Milhaud, Darius	**La Creation du Monde**				
Mozart, Wolfgang	**Piano Concerto No. 21**				
Mozart, Wolfgang	**Serenade No. 9**	**Posthorn**			

Mussorgsky, Modest	**Pictures at an Exhibition**	**Promenade**			
Mussorgsky, Modest	**Pictures at an Exhibition**	**Samuel Goldenberg and Schmuyle**			
Prokofiev, Sergei	**Cinderella Suite**				
Prokofiev, Sergei	**Lt. Kije**				
Prokofiev, Sergei	**Peter and the Wolf**				
Prokofiev, Sergei	**Romeo and Juliet**				
Prokofiev, Sergei	**Schythian Suite**				
Prokofiev, Sergei	**Suite from Lt Kije**				
Prokofiev, Sergei	**Symphony No. 2**				
Prokofiev, Sergei	**Symphony No. 5**				
Prokofiev, Sergei	**Symphony No. 6**				
Prokofiev, Sergei	**Violin Concerto no. 2**				
Rachmaninoff, Sergei	**Rhapsody on a Theme of Paganini**				
Rachmaninoff, Sergei	**Symphony No. 2**				
Ravel, Maurice	**Alborada a del Gracioso**				
Ravel, Maurice	**Bolero**				
Ravel, Maurice	**Concerto for the Left Hand**				
Ravel, Maurice	**Concerto pour Piano No. 1 en Sol**				
Ravel, Maurice	**Concerto pour Piano pour la Main Gauche**				
Ravel, Maurice	**Daphnis et Chloe Suite No. 1**				
Ravel, Maurice	**Daphnis et Chloe Suite No. 2**				
Ravel, Maurice	**La valse**				
Ravel, Maurice	**Piano Concerto in G Major**				
Ravel, Maurice	**Rhapsody Espagnol**				
Ravel, Maurice	**Tzigane**				
Respighi, Ottorino	**Fests Romane**				
Respighi, Ottorino	**Fountains of Rome**				
Respighi, Ottorino	**Pines of Rome**				
Revueltas, Silvestre	**Sensemaya**				
Rimsky-Korsakov, Nikolai	**Capriccio Espagnole**				
Rimsky-Korsakov, Nikolai	**Le Coq d'Or**				
Rimsky-Korsakov, Nikolai	**Russian Easter Overture**				
Rimsky-Korsakov, Nikolai	**Scheherezade**				
Rossini, Gioacchino	**Overture to William Tell**				
Schoenberg, Arnold	**Guerrelieder**				
Schoenberg, Arnold	**Theme and Variations Op 43b**				

Schöenberg, Arnold	Variations for Orchestra				
Schubert, Franz	Symphony No. 8				
Schubert, Franz	Symphony No. 9				
Schumann, Robert	Symphony No. 2				
Schumann, Robert	Symphony No. 3				
Scriabin, Alexander	Poem of Ecstacy				
Shostakovich, Dimitri	Festive Overture				
Shostakovich, Dimitri	Piano Concerto No. 1				
Shostakovich, Dimitri	Symphony No. 1				
Shostakovich, Dimitri	Symphony No. 4				
Shostakovich, Dimitri	Symphony No. 5				
Shostakovich, Dimitri	Symphony No. 7				
Shostakovich, Dimitri	Symphony No. 8				
Shostakovich, Dimitri	Symphony No. 10				
Sibelius, Jean	En Saga				
Sibelius, Jean	Finlandia				
Sibelius, Jean	Symphony No. 1				
Sibelius, Jean	Symphony No. 2				
Sibelius, Jean	Symphony No. 5				
Strauss, Richard	Alpine Symphony				
Strauss, Richard	Also Spach Zarathustra				
Strauss, Richard	Death and Transfiguration				
Strauss, Richard	Der Burger als Edelmann				
Strauss, Richard	Der Rosenkavalier Suite				
Strauss, Richard	Don Juan				
Strauss, Richard	Don Quixote				
Strauss, Richard	Ein Heldenleben	Trumpet 1 in Bb			
Strauss, Richard	Ein Heldenleben	Trumpet 1 in Eb			
Strauss, Richard	Ein Heldenleben	Offstage Trio			
Strauss, Richard	Le Bourgeois Gentilhomme				
Strauss, Richard	Solome's Dance				
Strauss, Richard	Symphonia Domestica				
Strauss, Richard	Till Eulenspiegel				
Stravinsky, Igor	A Soldier's Tale				
Stravinsky, Igor	Card Game				
Stravinsky, Igor	Firebird 1919 Version				
Stravinsky, Igor	Firebird 1945 Version				
Stravinsky, Igor	Fireworks				
Stravinsky, Igor	L'Histoire du Soldat				
Stravinsky, Igor	Le Chant du Rossignol				
Stravinsky, Igor	Petrouchka	Dance of the Ballerina			
Stravinsky, Igor	Petrouchka	Valse			

Stravinsky, Igor	**Petrouchka**	**Rehearsal 132/265 to the end**			
Stravinsky, Igor	**Pulcinella**				
Stravinsky, Igor	**Rite of Spring**				
Stravinsky, Igor	**Song of the Nightingale**				
Stravinsky, Igor	**Symphony in C Major**				
Stravinsky, Igor	**Symphony in Three Movements**				
Stravinsky, Igor	**The Rite of Spring**				
Suppe, Franz von					
Tchaikovsky, Pyotr	**Cappricio Italien**				
Tchaikovsky, Pyotr	**Nutcracker**				
Tchaikovsky, Pyotr	**Swan Lake**				
Tchaikovsky, Pyotr	**Symphony No. 4**				
Tchaikovsky, Pyotr	**Symphony No. 5**				
Tchaikovsky, Pyotr	**Symphony No. 6**				
Verdi, Giuseppe	**Overture to the Force of Destiny**				
Verdi, Giuseppe	**Overture to Nabucco**				
Verdi, Giuseppe	**Requiem**				
Wagner, Richard	**Der Meistersinger**	**Overture**			
Wagner, Richard	**Gotterdammerung**				
Wagner, Richard	**Overture to Rienzi**				
Wagner, Richard	**Parsifal**	**Overture**			
Wagner, Richard	**Ride of the Valkyries**				
Wagner, Richard	**Seigfried Idyll**				
Wagner, Richard	**Tannhauser**	**Overture**			
Weber, Carl	**Oberon**	**Overture**			
Webern, Anton	**Passacaglia**				
Webern, Anton	**Six Pieces**				

Fine

Appendix C: Tables of Rotary Trumpet Manufacturers, Makes, Models, and SpecificationsTable 1: Companies Currently in Production and Where to Purchase in the United States

Company	Country	State/City	Distributor in the U.S.
Baumann	Germany	Aschau im Chiemgau	
Bernhard Werner Schmidt	Germany	Vogtland, Saxony	Online
Brassego	Austria	Haag	
B & S	Germany	Markneukirchen	Numerous
Dowids	Germany	Munich	
Galileo	Switzerland	Basel	
Josef Lidl Brno	Czech Republic	Brno	The Horn Guys, Pasadena, CA
Josef Monke	Germany	Cologne	
Krinner	Germany	Gaißach	
Kühnl & Hoyer	Germany	Markt Erlbach	Dillon Music, Woodbridge, NJ
Lechner	Germany	Bischofshofen	
M. Jiracek & Sons	Czech Republic	Šaratice	Ferguson Music, La Crescenta, CA or online
Martin Schmidt	Germany	Potsdam	
Miraphone	Germany	Waldkraiburg	numerous
O'Malley	China	Douglas, GA	O'Malley Musical Instruments
Ricco Kühn	Germany	Oederan	
Schagerl	Germany		Austin Custom Brass, Reading, MA / Levin's Washington Music Center, Wheaton, MD
Schiller	China/USA	Stevens Point, WI	Jim Laabs Music
Scherzer	Germany	Markneukirchen	Dealers available or contact a representative
Stomvi	USA	Xirivella, Valencia, Spain	Milano Music Center, AZ Anbrass Music, CA Union Music Company, CA The Symphony Music Shop, MA Chuck Levine's, MD Schmitt, MN Thompson Music, NE Dillon Music, NJ
Thein	Germany	Bremen	Houghton Horns, Keller, TX
Thomann	Germany	Burgebrach, Bavaria	Online
Weimann	Germany	Kappellendorf	
V. F. Cerveny	Czech Republic	Hradec Králové	New York, NY
Wessex	UK	Andover	Chicago, IL showroom
Yamaha	Japan	Hamamatsu	Numerous Yamaha dealers

Manufacturers of rotary trumpets who have recently ceased production: Blackburn (recently purchased by Pickett Brass and no longer advertises a rotary trumpet), Dotzauer, Ganter, and Kanstul. Rotary trumpet models by these companies may still be found in the used market.

Table 2: Models Available and Cost

All currencies were converted to USD.

Company	Models	Key	Designation	Cost MSRP
Baumann	110	Bb or C		
	1135	Bb or C		
	2	C		
Bernhard Werner Schmidt	20/05 Cologne	C		$2411 - $3583
	20/07 Cologne	Bb	Student	$2148 - $2926
	20/08 Cologne	Bb		$2712 - $3598
	20/09	Bb		$2793 - $3693
Brassego	Mirabell	Bb or C		$3455 - $4012
B & S	3005	Bb	Intermediate/Professional	$1365 - $1599
	K & K Vienna	Bb		$3,790
	Belvedere	Bb		$3733 - $4792
	Schönbrunn	Bb or C		$4346 - $6285
	Schönbrunn Zebra	Bb		$4,680
	Meisterwerk	Bb		$4570 - $6887
Dowids	BZ Series	Bb or C		
	NB Series	Bb or C		
	M Series	Bb		
Galileo	Model 42	Bb		$4957 - $6774
	Model 43	Bb		$4957 - $6774
	Model 44	C		$4957 - $6774
Josef Lidl Brno	LTR 735	Bb		
	LTR 745	Bb		
	LTR 845	C		
Josef Monke	no information available			
Krinner	Concert trumpet	Bb or C		$3666 - $4814
	New Age	Bb or C		$3666 - $4814
Kühnl & Hoyer	1105 Orchestra	Bb		
	6010	Bb		
Lechner	Student	Bb		
	Gold Brass	Bb		
	Orchestra (6 different models)	Bb or C		
M. Jiracek & Sons	172L	Bb		$2,407
Martin Schmidt	Student	Bb	Student	$2020 - $2195
	Concert	Bb	Medium-class	$2,744
	Heckel	Bb or C		$5380 - $5534
	Heckel II	Bb		$3563 - $3778
	Orchestra	Bb or C		$4147 - $5063
	Large	Bb or C		$4147 - $4347
	X-Series eXperience	Bb		$4181 - $6100
	X-Series eXcellence	Bb		$4181 - $6101
Miraphone	11	Bb		$3481 - $5032
	9R	Bb		$2908 - $4910
O'Malley	OMRTP200	Bb	Professional Model	$1,495
	OMRTP300	Bb	Vienna Rotary	$2,995

O'Malley (continued)		C	C Trumpet Rotary Valves Professional C Trumpet	$2,195.00
Ricco Kühn	T 043/B	Bb	Basic	$3,347.58
	T 053/B	Bb	Professional	$3,751.99
	T 053/BX	Bb	Professional Custom	$4,021.59
	T 053/BX-L	Bb	Professional Custom	$3,909.25
	T 053/CX	C	Professional Custom	$4,021.59
	T 053/CX-L	C	Professional Custom	$3,909.25
	T 073/CX	Bb	Professional Custom with exchangeable bell	
	T 063/B	Bb	Exclusive	$3,909.25
	T 063/C	C	Exclusive	$3,909.25
Schagerl	Spyder	Bb		$5572 - $7132
	Raweni	Bb		$5015 - $6686
	Ganschhorn	Bb		$4457 - $5795
	Hans Ganch	Bb		$4000 - $6452
	Vienna	Bb or C		$4446 - $6391
	Berlin	Bb		$4223 - $6975
	Berlin	C		$4669 - $6975
Schiller	Elite		Affordable	$439
	Frankfurt Elite			$997
	Frankfurt Elite - Nickel			$997
Scherzer	8228	Bb		$2835 - $3049
	8218 Cologne	Bb		$3,189
	8217 Cologne	C		$4,977
Stomvi	Titan	C		$4,375
	Titan	Bb		$4,375
Thein	Deutsche	Bb		
	Deutsche 4-valve	Bb		
	Deutsche	C		$7,895
Thomann	Concerto ML/MS/MGP	Bb		$855 - $1425
	Concerto GML/GMS/GMGP	Bb		$877 - $1425
	Classica II MR/MS	Bb		$1419 - $1519
	Classica II GML/GMS	Bb		$1469 - $1519
	Classica III GML	C		$1,519
	Classica III MS	C		$1,599
Weimann	Passion	Bb		$3,918.35
	Classico	Bb		$3,794.84
	Vivat	Bb		$3,794.84
	Passion	C		$3,918.35
	Classico	C		$3,794.84
	Vivat	C		$3,794.84
V. F. Cerveny	501RT	Bb		$988
	701R	Bb		
Wessex	R45	Bb	Affordable	$485
Yamaha	YTR-938FFMGS	Bb	Custom	$5187.99 - $7191
	YTR-948FFMGS	C	Custom	$5,187.99
	YTR-436G	Bb	Intermediate	$1,439

Table 3: Valve Design

Company	Models	Rotary Valve Design
Baumann	110	J. Meinlschmidt
	1135	J. Meinlschmidt
	2	J. Meinlschmidt
Bernhard Werner Schmidt	20/05 Cologne	J. Meinlschmidt
	20/07 Cologne	J. Meinlschmidt
	20/08 Cologne	J. Meinlschmidt
	20/09	J. Meinlschmidt
Brassego	Mirabell	Nickel silver valve
B & S	3005	Conical valves. Nickel silver valve casing. 3B ball bearing linkages
	K & K Vienna	Nickel silver valve
	Belvedere	Meinlschmidt
	Schönbrunn	Meinlschmidt
	Schönbrunn Zebra	Removable valves
	Meisterwerk	
Dowids	BZ Series	Zirnbauer valve. German silver bronze
	NB Series	Meinlschmidt. German silver bronze. Gold brass knuckles
	M Series	Meinlschmidt. Brass. Knuckles are gold brass
Galileo	Model 42	Zirnbauer Rotary Valve
	Model 43	Zirnbauer Rotary Valve
	Model 44	Zirnbauer Rotary Valve
Josef Lidl Brno	LTR 735	Nickel silver
	LTR 745	Nickel silver
	LTR 845	
Josef Monke	No information available	
Krinner	Concert trumpet	
	New Age	
Kühnl & Hoyer	1105 Orchestra	Nickel silver casing with Bronze rotors
	6010	
Lechner	Student	
	Gold Brass	
	Orchestra (6 different models)	
M. Jiracek & Sons	172L	
Martin Schmidt	Student	Nickel silver casing, Bronze valves. Spiral spring mechanism with 3B-joints
	Concert	Nickel silver casing, Bronze valves. Spiral spring mechanism with 3B-joints

	Heckel	Nickel silver casing, Bronze valves. Spiral spring mechanism with SW4-joints
	Heckel II	Nickel silver casing, Bronze valves. Spiral spring mechanism with SW4-joints
	Orchestra	Nickel silver casing, Bronze valves. Spiral spring mechanism with SW4-joints
	Large	Nickel silver casing, Bronze valves. Spiral spring mechanism with SW4-joints
	X-Series eXperience	Zirnbauer valve. Nickel silver casing, Bronze valves. Spiral spring mechanism with Minibal joints
	X-Series eXcellence	Zirnbauer valve. Nickel silver casing, Bronze valves. Spiral spring mechanism with Minibal joints
Miraphone	11	
	9R	
O'Malley	OMRTP200	
	OMRTP300	
Ricco Kühn	T 043/B	
	T 053/B	
	T 053/BX	3 valve section designs
	T 053/BX-L	3 valve section designs
	T 053/CX	3 valve section designs
	T 053/CX-L	3 valve section designs
	T 073/CX	
	T 063/B	New valve section with round valve passage
	T 063/C	New valve section with round valve passage
Schagerl	Spyder	Heavy. Top action rotary valve
	Raweni	Heavy valve section. Top action rotary valve
	Ganschhorn	Top action rotary valve. Optional heavy valve body.
	Hans Ganch	Optional heavy valve body
	Vienna	
	Berlin	Conical Heavy or Cylindrical Heavy
	Berlin	Cylindrical Heavy or Conical Heavy
Schiller	Elite	
	Frankfurt Elite	Frankfurt Valves
	Frankfurt Elite - Nickel	Frankfurt Valves
Scherzer	8228	Conical. 3B linkage system
	8218 Cologne	Conical. 3B linkage system
	8217 Cologne	Conical. 3B linkage system
Stomvi	Titan	Stomvi or J. Meinlschmidt Valves
	Titan	Stomvi or J. Meinlschmidt Valves
Thein	Deutsche	Meinlschmidt (Zirnbauer optional?)
	Deutsche 4-valve	4 valves

	Deutsche	Zirnbauer
Thomann	Concerto ML/MS/MGP	
	Concerto GML/GMS/GMGP	
	Classica II MR/MS	
	Classica II GML/GMS	
	Classica III GML	
	Classica III MS	
Weimann	Passion	Zirnbauer Rotary Valve
	Classico	Zirnbauer Rotary Valve
	Vivat	Zirnbauer Rotary Valve
	Passion	Zirnbauer Rotary Valve
	Classico	Zirnbauer Rotary Valve
	Vivat	Zirnbauer Rotary Valve
V. F. Cerveny	501RT	
	701R	
Wessex	R45	
Yamaha	YTR-938FFMGS	
	YTR-948FFMGS	
	YTR-436G	

Table 4: Bore and Body Materials

Company	Models	Bore	Body Materials
Baumann	110	ML	
	1135	ML or L	
	2	ML	
Bernhard Werner Schmidt	20/05 Cologne	.433"	
	20/07 Cologne	.433"	
	20/08 Cologne	.433"	
	20/09	.433"	
Brassego	Mirabell		Golden brass
B & S	3005	.433"	Gold brass
	K & K Vienna		Crooks of gold brass. Slides of nickel silver
	Belvedere		Gold brass body
	Schönbrunn	.433"+	
	Schönbrunn Zebra	.435"	Nickel silver tubes. Gold brass crooks
	Meisterwerk	.435" or .440	
Dowids	BZ Series	Conical .435" - .440"	Gold brass
	NB Series	.435"	
	M Series	.440"	
Galileo	Model 42	.4409", Optional .452"	Nickel silver slides. Tuning crooks red brass.
	Model 43	.4409", Optional .452"	Nickel silver slides. Tuning crooks red brass.
	Model 44	.4409"	Nickel silver slides. Tuning crooks red brass.
Josef Lidl Brno	LTR 735	.460"	Gold brass. Nickel silver slides
	LTR 745	.460"	Gold brass
	LTR 845	.437"	Gold brass
Josef Monke	no information available		
Krinner	Concert trumpet	.433" - .440"	Gold brass. Light, medium, or heavy
	New Age	.433" - .440"	Gold brass. Light, medium, or heavy
Kühnl & Hoyer	1105 Orchestra	.435"	Gold brass
	6010	.433"	Gold brass
Lechner	Student		
	Gold Brass		
	Orchestra (6 different models)		
M. Jiracek & Sons	172L	.4409" or .460"	Nickel brass
Martin Schmidt	Student	.433"/.440"	Gold brass
	Concert	.433"/.440"	Gold brass
	Heckel	.440"	Gold brass
	Heckel II	.440"	Gold brass
	Orchestra	.452"	Gold brass
	Large	.452"	Gold brass

Martin Schmidt (continued)	X-Series eXperience	.440"	Gold brass
	X-Series eXcellence	.440"	Gold brass
Miraphone	11	.443"	Gold brass body. Gold brass-nickel silver valve section
	9R	.431"	Yellow brass. Nickel silver trimmings. Or Gold brass with nickel silver valve section
O'Malley	OMRTP200	.433"	Yellow Brass Piston
	OMRTP300	.441"	Yellow Brass Piston
		.4409"	Gold Brass, Nickel Silver Valves, Nickel Silver inner and outer slide tubes
Ricco Kühn	T 043/B		Bronze valves
	T 053/B		Bronze valves
	T 053/BX		Nickel silver valve body with bronze valves
	T 053/BX-L	.4409"	
	T 053/CX		Nickel silver valve body with bronze valves
	T 053/CX-L	.4409"	
	T 073/CX	.433"-.439" bronze valves; .433"-439" nickel silver body with bronze valves; .440" bronze valves	Brass or Nickel Silver
	T 063/B		Gold Brass
	T 063/C		Gold Brass
Schagerl	Spyder		
	Raweni	L	
	Ganschhorn	ML	
	Hans Ganch	L	
	Vienna	ML	
	Berlin	L (if cylindrical), ML (if conical)	
	Berlin	L (if cylindrical), ML (if conical)	
Schiller	Elite	.433"	Brass and Nickel Silver tubing
	Frankfurt Elite		Heavy duty design 80/20
	Frankfurt Elite - Nickel		Heavy duty design 80/20
Scherzer	8228	.411"	Gold brass body
	8218 Cologne	.441" or .453"	Gold brass body
	8217 Cologne	.441" or .453"	Gold brass body
Stomvi	Titan	.441"	
	Titan	.441"	
Thein	Deutsche	.452"	Thein Kruspe proprietary materials
	Deutsche 4-valve		Thein Kruspe proprietary materials
	Deutsche	.433" or .452"	Thein Kruspe proprietary materials
Thomann	Concerto ML/MS/MGP	.4409"	Brass. Outer slides and leadpipe nickel silver.

Thomann (continued)	Concerto GML/GMS/GMGP	.4409"	Outer slide and leadpipe of nickel silver
	Classica II MR/MS	.433"	Outer slide and leadpipe of nickel silver
	Classica II GML/GMS	.433"	Gold brass body
	Classica III GML	.433"	Gold brass body. Nickel silver outer slides. Main tuning slide nickel silver inner slide tube.
	Classica III MS	.433"	Brass body, outer slides, and leadpipe
Weimann	Passion	.4409"	Gold brass with nickel silver trimmings. Gold brass valve connections
	Classico	.435-.440"	Gold brass with nickel silver trimmings, Gold brass valve connections
	Vivat	.435"	Gold brass with nickel silver trimmings, Gold brass valve connections
	Passion	.4409"	Gold brass with nickel silver trimmings, Gold brass valve connections
	Classico	.435-.440"	Gold brass with nickel silver trimmings
	Vivat	.435"	Gold brass with nickel silver trimmings
V. F. Cerveny	501RT	.437"	Yellow brass. Nickel silver leadpipe
	701R	.437"	Red Brass. Nickel silver leadpipe
Wessex	R45	.43"	Nickel leadpipe. Nickel tuning slides
Yamaha	YTR-938FFMGS	.433"	Gold brass leadpipe, Yellow brass body, Gold brass bell
	YTR-948FFMGS	.442"	
	YTR-436G	.433"	

Table 5: Bell Size, Materials, and Other

Company	Models	Bell Size	Bell Material	Bell Flare / Shape / Pieces / Thickness / Etc.
Baumann	110	Bores to.433" - .440" available	Gold brass. Extreme lightweight to heavy. Complete nickel silver available	.015", .017", .019", .021", Nickel silver wreath available
	1135	Bores to.433" - .440" available	Gold brass. Extreme lightweight to heavy. Complete nickel silver available	.015", .017", .019", .021", Nickel silver wreath available
	2	Bores to.433" - .440" available	Gold brass. Extreme lightweight to heavy. Complete nickel silver available	.015", .017", .019", .021", Nickel silver wreath available
Bernhard Werner Schmidt	20/05 Cologne	4.72"		.015" thickness
	20/07 Cologne	5.11"		.017" thickness
	20/08 Cologne	5.11"	with small nickel silver wreath	.015" thickness
	20/09	5.11"		.013" thickness
Brassego	Mirabell	5"	Brass	
B & S	3005	4.960" or 4.512"	Gold brass	
	K & K Vienna	5"	Gold brass	
	Belvedere	5.11"		.017" (Also available in .015" and .019")
	Schönbrunn	5.11" or 5.39"	Brass	.017" (Also available in .015" and .019")
	Schönbrunn Zebra	5.11"		.017"
	Meisterwerk	5.11"		
Dowids	BZ Series		Gold brass	
	NB Series	optional		
	M Series	5.19"	Gold brass. Model 72	
Galileo	Model 42		Yellow brass or Red Brass. Optional Nickel silver rim	Bell Thickness Options: .017, .019, .023
	Model 43		Yellow brass or Red Brass. Optional Nickel silver rim	Bell Thickness Options: .017, .019, .023
	Model 44		Yellow brass or Red Brass. Optional Nickel silver rim	Bell Thickness Options: .017, .019, .023
Josef Lidl Brno	LTR 735	5.11"		
	LTR 745	5.11"		
	LTR 845	5.11"		
Josef Monke	no information available			
Krinner	Concert trumpet	5.11" or 5.31"		.017" or .019" Thickness
	New Age	5.11" or 5.31"		.017" or .019" Thickness

Kühnl & Hoyer	1105 Orchestra	5.118"		
	6010	5.118"		
Lechner	Student			
	Gold Brass			
	Orchestra (6 different models)			
M. Jiracek & Sons	172L		One piece. 72% Copper, 28% Zinc	
Martin Schmidt	Student	5.11"		French rim. Medium thickness
	Concert	5.11"	Nickel silver garland	Medium-thin thickness
	Heckel	5.11"	Nickel silver "Heckel" garland.	Very thin thickness
	Heckel II	5.11"	Nickel silver "Heckel" garland.	Thin thickness
	Orchestra	5.34"		French rim. Medium thickness
	Large	5.51"		French rim. Medium thickness
	X-Series eXperience	5.19"		French rim. Medium thickness
	X-Series eXcellence	5.19"		French rim. Thin thickness
Miraphone	11	5.118"		
	9R	5.118"		
O'Malley	OMRTP200	5.078"		
	OMRTP300	5.157"		
		5.196"		
Ricco Kühn	T 043/B	5.11" and 5.51"	Gold brass	some one piece. Some 2 piece
	T 053/B	5.51" recommended	Gold brass recommended	3 different bell options. Not listed on website
	T 053/BX	5.51"	Rose brass with nickel silver garland	
	T 053/BX-L	5.51"	Gold Brass	
	T 053/CX	5.51"	Rose brass with nickel silver garland	Fixed bell
	T 053/CX-L	5.51"	Gold Brass	
	T 073/CX	5.51"		Exchangeable bell
	T 063/B	5.51" or 5.11"	Gold brass and one other not specified	
	T 063/C	5.51" or 5.11"	Gold brass and one other not specified	
Schagerl	Spyder	5.11"	Gold brass	
	Raweni	4.84"	Gold brass	.015" thickness
	Ganschhorn	5.11" or 5.19"	Gold brass	.017" or .019" thickness
	Hans Ganch	5.11" or 5.39"	Gold brass	.019" thickness
	Vienna	5.11"	Gold brass	.017"thickeness

Schagerl (continued)	Berlin	5.11"	Gold brass	.017" if conical, .019" if cylindrical
	Berlin	5.11"	Gold brass	.017" thickness
Schiller	Elite			
	Frankfurt Elite	5"		
	Frankfurt Elite - Nickel	5"		
Scherzer	8228	5.118"	Optional yellow brass	
	8218 Cologne	5.512"		
	8217 Cologne	5.197"		
Stomvi	Titan	5.5"	Bellflex. Copper, or Gold Brass upon request	#28
	Titan	5.5"	Bellflex. Copper, or Gold Brass upon request	#28
Thein	Deutsche	5.511"		Kranz rim. .011" thickness
	Deutsche 4-valve	5.511"	yellow brass	Kranz rim. .017" thickness
	Deutsche	5.11"		Kranz rim. .017" thickness
Thomann	Concerto ML/MS/MGP	5.39"	Brass	Medium thickness
	Concerto GML/GMS/GMGP	5.39"	Gold Brass	Medium thickness
	Classica II MR/MS	5.19"	Brass	Medium thickness
	Classica II GML/GMS	5.19"	Gold Brass	Medium thickness
	Classica III GML	5.11"	Gold Brass	Medium thickness
	Classica III MS	5.11"	Brass	Regular thickness
Weimann	Passion	5.51"		
	Classico	5.511"		
	Vivat	5.118"		
	Passion	5.118"		
	Classico	5.118"		
	Vivat	5.118"		
V. F. Cerveny	501RT	5.3"	Nickel silver bell rim	
	701R	5.3"	Nickel silver bell rim	
Wessex	R45	5.31"	Gold Brass	
Yamaha	YTR-938FFMGS	5.375"	Gold-Brass or Yellow Brass	One-piece
	YTR-948FFMGS	5.437"	Gold-Brass or Yellow Brass	One-piece
	YTR-436G	5.29"	Gold-brass	

Table 6: Klappen and Triggers

Company	Models	Klappen	Water Keys	Slide Trigger Availability and Types
Baumann	110	C, A	1-2	3rd Valve Slide Trigger
	1135	C, A	1-2	
	2	C, A	1-2	
Bernhard Werner Schmidt	20/05 Cologne		1	Optional 3rd Valve Slide Trigger
	20/07 Cologne		1	3rd Valve Slide Trigger
	20/08 Cologne	C-sharp, D, and Overblow key	2	3rd Valve Slide Trigger, 3-part
	20/09	C-sharp, D, and G-sharp	2	3rd Valve Slide Trigger, 3-part
Brassego	Mirabell		1	3rd Valve Slide Trigger
B & S	3005		2	3rd Valve Slide Trigger
	K & K Vienna		1	3rd Valve Slide Trigger
	Belvedere		2	3rd Valve Slide Trigger
	Schönbrunn		2	3rd Valve Slide Trigger
	Schönbrunn Zebra		1	3rd Valve Slide Trigger
	Meisterwerk	2 optional		Removeable 3rd valve slide trigger
Dowids	BZ Series	3 optional with water key	1	3rd Valve Slide Trigger with lock
	NB Series	4 optional with water key	1	
	M Series	5 optional with water key	1	
Galileo	Model 42	C and A optional	1	Progressive trigger on 3rd valve slide. Optional double trigger for 1st and 3rd valve slides
	Model 43	C and A optional	1	Progressive trigger on 3rd valve slide. Optional double trigger for 1st and 3rd valve slides
	Model 44	C, A, and B optional	1	Progressive trigger on 3rd valve slide. Optional double trigger for 1st and 3rd valve slides
Josef Lidl Brno	LTR 735		2	
	LTR 745		1	3rd Valve Slide Trigger
	LTR 845		1	3rd Valve Slide Trigger
Josef Monke	no information available			
Krinner	Concert trumpet	3	2	3rd Valve Slide Trigger
	New Age	3	2	3rd Valve Slide Trigger
Kühnl & Hoyer	1105 Orchestra	Optional	2	3rd Valve Slide Trigger
	6010		2	3rd Valve Slide Trigger
Lechner	Student			
	Gold Brass			

Lechner (continued)	Orchestra (6 different models)	3 optional		Optional: thumb trigger, 1st and 3rd individual trigger, 1st and 3rd combined trigger
M. Jiracek & Sons	172L		2	3rd Valve Slide Trigger
Martin Schmidt	Student		2	3rd Valve Slide Trigger
	Concert	1	2	3rd Valve Slide Trigger
	Heckel	C, optional A	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
	Heckel II	C	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
	Orchestra	C, optional A	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
	Large	C	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
	X-Series eXperience	Optional C	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
	X-Series eXcellence	Optional C	2	3rd Valve Slide Trigger, Pitch-finder tuning slide trigger
Miraphone	11		1 or 2	3rd Valve Slide Trigger optional
	9R		2 or 2	3rd Valve Slide Trigger optional
O'Malley	OMRTP200			
	OMRTP300			
				3rd Slide Trigger
Ricco Kühn	T 043/B		2	Paddle trigger mechanism for third slide
	T 053/B	C, additional optional	2	Paddle trigger mechanism for third slide
	T 053/BX	C, additional optional	2	Paddle trigger mechanism for third slide
	T 053/BX-L	C, additional optional	2	Paddle trigger mechanism for third slide
	T 053/CX	C, additional optional	2	Paddle trigger mechanism for third slide
	T 053/CX-L	C, additional optional	2	Paddle trigger mechanism for third slide
	T 073/CX	C, additional optional	2	Paddle trigger mechanism for third slide
	T 063/B	C, additional optional	2	Paddle trigger mechanism for third slide
	T 063/C	C, additional optional	2	Paddle trigger mechanism for third slide
Schagerl	Spyder		1-2	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
	Raweni		2	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
	Ganschhorn		2	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
	Hans Ganch		1	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
	Vienna	A and C	1-2	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide

Schagerl (continued)	Berlin			Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
	Berlin	A and C	1-2	Optional: Extended 3rd valve trigger, Combo trigger for 1st and 3rd slide
Schiller	Elite		2	3rd Valve Slide Trigger
	Frankfurt Elite	optional		3rd Valve Slide Trigger
	Frankfurt Elite - Nickel	optional		3rd Valve Slide Trigger
Scherzer	8228	1 optional	2	3rd Valve Slide Trigger
	8218 Cologne	A and/or C	2	3rd Valve Slide Trigger
	8217 Cologne	A and/or C	2	3rd Valve Slide Trigger
Stomvi	Titan	Optional C, B, A, G		
	Titan	Optional C, B, A, G		
Thein	Deutsche	B, C, and A	2	3rd Valve Slide Trigger. Left hand thumb trigger mechanism for the main tuning slide.
	Deutsche 4-valve	1	2	3rd Valve Slide Trigger. Left hand thumb trigger mechanism for the main tuning slide.
	Deutsche		1	3rd Valve Slide Trigger. Left hand thumb trigger mechanism for the main tuning slide.
Thomann	Concerto ML/MS/MGP		1	3rd Valve Slide Trigger
	Concerto GML/GMS/GMGP		1	3rd Valve Slide Trigger
	Classica II MR/MS		1	3rd Valve Slide Trigger
	Classica II GML/GMS	2nd main tuning slide with 2 keys	1	3rd Valve Slide Trigger
	Classica III GML	3	1	3rd Valve Slide Trigger
	Classica III MS	3	1	3rd Valve Slide Trigger
Weimann	Passion			3rd Slide Trigger
	Classico			3rd Slide Trigger
	Vivat			3rd Slide Trigger
	Passion			3rd Slide Trigger
	Classico			3rd Slide Trigger
	Vivat			3rd Slide Trigger
V. F. Cerveny	501RT		2	3rd Valve Slide Trigger
	701R		2	3rd Valve Slide Trigger
Wessex	R45		2	Tuning trigger
Yamaha	YTR-938FFMGS		2	3rd Valve Slide Trigger
	YTR-948FFMGS	C	2	3rd Valve Slide Trigger
	YTR-436G		2	3rd Valve Slide Trigger

Table 7: Other Features

Company	Models	Finishes Available	Other Features	Other
Baumann	110	Silver, Heavy Silver, Gold with Silver	Slim design. While they do have standard models, Baumann uses a "modular design system" allowing for various combinations of weight, materials, mouthpipes, sizes, etc. LR system for reduced resistance. Interchangeable leadpipes. Cap screws with engraving available. Heavy caps available. Interchangeable bell.	Cap screws with engraving available
	1135		Classic wide design. While they do have standard models, Baumann uses a "modular design system" allowing for various combinations of weight, materials, mouthpipes, sizes, etc. LR system for reduced resistance. Interchangeable leadpipes. Cap screws with engraving available. Heavy caps available. Interchangeable bell.	Cap screws with engraving available
	2		Classic design. In the range between the 110 and 1135 model. While they do have standard models, Baumann uses a "modular design system" allowing for various combinations of weight, materials, mouthpipes, sizes, etc. LR system for reduced resistance. Interchangeable leadpipes. Cap screws with engraving available. Heavy caps available. Interchangeable bell.	Cap screws with engraving available
Bernhard Werner Schmidt	20/05 Cologne	Brass, Golden Brass, Silver, Gold-plate		Options to add to any horn: Gold plating on caps, tunings slides, or inside the bell. Tuning slide with overblow water-keys in C-sharp and D. Tuning slide with overblow water-key in C-sharp, G-sharp, and D. 3rd valve slide trigger.

Bernhard Werner Schmidt (continued)	20/07 Cologne	Golden Brass, Brass, Silver		Options to add to any horn: Gold plating on caps, tunings slides, or inside the bell. Tuning slide with overblow water-keys in C-sharp and D. Tuning slide with overblow water-key in C-sharp, G-sharp, and D. 3rd valve slide trigger.
	20/08 Cologne	Golden brass, Brass, Silver, Gold-plate	Comes with case and mouthpiece of choice. Has a nickel silver wreath on the bell.	Options to add to any horn: Gold plating on caps, tunings slides, or inside the bell. Tuning slide with overblow water-keys in C-sharp and D. Tuning slide with overblow water-key in C-sharp, G-sharp, and D. 3rd valve slide trigger.
	20/09	Golden brass, Brass, Silver, Gold-plate	Comes with case and mouthpiece of choice. Has a nickel silver wreath on the bell.	Options to add to any horn: Gold plating on caps, tunings slides, or inside the bell. Tuning slide with overblow water-keys in C-sharp and D. Tuning slide with overblow water-key in C-sharp, G-sharp, and D. 3rd valve slide trigger.
Brassego	Mirabell	Brushed and Lacquered		
B & S	3005	Clear Lacquer		Comes with case, mouthpiece, and maintenance accessories
	K & K Vienna	Brushed and Lacquered		Ergonomic design
	Belvedere	Lacquered, Brushed and Lacquered, Silver plate, Gold plate		
	Schönbrunn	Raw/Polished, Silver-plate, Gold-plate	Singing bell hammered bell available for extra charge	Viennese model Suited for orchestra and soloists.
	Schönbrunn Zebra	Zebra finish (Burned and lacquered)	ML leadpipe	
	Meisterwerk	Raw/polished. or Gold-plated bell, silver valve body and leadpipe	Removeable bell. Different leadpipes available. Lyre adapter available. Register keys optional. Singing bell hammering optional.	
Dowids	BZ Series	Polished brass, Lacquer, Silver, Gold plate	One-piece knuckles and slides. Spiral in the valve bearing. Compensation hole on 3rd valve case. Exchangeable leadpipe. Exchangeable bell. Available in heavy valve block also.	Other Options: Combo trigger, lever trigger, finger hooks, Amado water key, water valve on 3rd slide, wreath on the bell

			Series of various bells available. C trumpet available with optional long leadpipe.	
Dowids (continued)	NB Series	Lacquer, Silver, Gold plate	Click clock on 3rd slide. Multiple bell options	Other Options: Combo trigger, lever trigger, finger hooks, Amado water key, water valve on 3rd slide, wreath on the bell
	M Series	Lacquer, Silver, Gold plate	Spiral in the valve bearing. Compensation hole on 3rd valve case. Exchangeable leadpipe. Exchangeable bell. Available in heavy valve block also. Series of various bells available	Other Options: Combo trigger, lever trigger, finger hooks, Amado water key, water valve on 3rd slide, wreath on the bell
Galileo	Model 42	Polished brass, Silver, or Gold plate	Heavy version available. Nickel silver bell rim optional.	
	Model 43	Polished brass, Silver, or Gold plate	Heavy version available. Nickel silver bell rim optional.	
	Model 44	Polished brass, Silver, or Gold plate	Optional nickel silver garland	
Josef Lidl Brno	LTR 735	Lacquer	Minibal linkages	
	LTR 745	Lacquer	Minibal linkages. Wide wrap or close wrap	
	LTR 845	Lacquer		
Josef Monke	no information available			
Krinner	Concert trumpet	Raw Brass, Lacquer, Silver, Antique Stain, Polished Lacquer, Antique silver, Gold plate,	Changeable bell. Built completely in house and willing to make custom requests	
	New Age	Raw Brass, Lacquer, Silver, Antique Stain, Polished Lacquer, Antique silver, Gold plate,	Oval shape. Changeable bell. Built completely in house and willing to make custom requests	
Kühnl & Hoyer	1105 Orchestra	Lacquer or Silver	Hand-made bell. One-piece slides. 2 interchangeable leadpipes. Heavy cap on 3rd valve	Mouthpiece included
	6010	Clear Lacquer, Brass	Fixed leadpipe	3C mouthpiece included

Lechner	Student	Lacquer, Silver, Silver and Gold, Raw brass, Sandblasted, or Scratched		
	Gold Brass	Lacquer, Silver, Silver and Gold, Raw brass, Sandblasted, or Scratched		
	Orchestra (6 different models)	Lacquer, Silver, Silver and Gold, Raw brass, Sandblasted, or Scratched		
M. Jiracek & Sons	172L	Lacquer, Silver with gold plate hardware, or Gold plate	Optional: Rotary valve mechanism can be equipped with the piping in one piece without coupling rings. Tuned to 443-440Hz	Comes with case
Martin Schmidt	Student	Clear Lacquer	Optional pitch-finder trigger	Optional Schmidt case
	Concert	Clear Lacquer, Silver	Pitch-finder trigger	Optional Schmidt case
	Heckel	Gold plate, Silver	Design engraved in the garland and valve caps. Compensation hole at 3rd rotor housing Interchangeable leadpipe optional. Heckel snail. Strong leadpipe brace.	Optional Schmidt case
	Heckel II	Clear Lacquer, Silver, Gold plate	Design engraved in the garland and valve caps. Compensation hole at 3rd rotor housing. Interchangeable leadpipe optional	Optional Schmidt case
	Orchestra	Silver, Gold plate	Interchangeable leadpipe. Compensation hole at 3rd rotor housing	Optional Schmidt case
	Large	Silver, Gold plate	Available in heavy version. Interchangeable leadpipe	Optional Schmidt case
	X-Series eXperience	Silver, Gold plate	Designed to feel like a piston trumpet. Optional double trigger mechanism for 1st and 3rd valve slide	Optional Schmidt case
	X-Series eXcellence	Silver, Gold plate	Lightweight. Designed to feel like a piston trumpet. Optional double trigger mechanism for 1st and 3rd slide.	Optional Schmidt case

Miraphone	11	Lacquer, Silver, or Gold plated	Miraphone minibal rod. Spiral spring system. Exchangeable valves. Tuned to 443Hz.	Comes with mouthpiece. Case optional
	9R	Lacquer, Silver, or Gold plated	Miraphone minibal rod. Spiral spring system. Exchangeable valves. Tuned to 443Hz. Optional Haeckel wreath	
O'Malley	OMRTP200			
	OMRTP300		.408" Leadpipe, 2 tuning slides included - one with a standard water key. One with a water key and 2 Vienna keys	
		Clear Lacquer	Interchangeable leadpipe, changeable bell 5.2"	
Ricco Kühn	T 043/B	Gold Brass	Miniball joints for valve mechanisms	Bells are produced out of house and finished in Kuhn factory. They bend and harden the bells after another company cuts, shapes and brazes the bell to shape based on Kuhn tooling. "We bend the bells by hand, shaping them to make an exact fit. Hammering compresses and hardens the material in areas to be bent. In addition to the sound qualities of instruments produced by this expensive method, the compressed material is also more resistant to corrosion. Every bell is electronically measured and tested before assembly." Valves have "tapered/conical fittings" and are made with special alloys for speed and wear ability. Models can be modified or have features added including: adding C key, adding A key, adding B key, additional gold plated leadpipe, 1st slide trigger, combination 1st and 3rd slide trigger, pitchfinder for main tuning slide, and detachable bell. Marcus Bonna cases sold separately
	T 053/B	Gold Brass	Interchangeable leadpipe	
	T 053/BX		3 interchangeable leadpipe	
	T 053/BX-L		3 interchangeable leadpipe	
	T 053/CX		3 interchangeable leadpipe	
	T 053/CX-L		3 interchangeable leadpipe	
	T 073/CX	Polished; Silver Plate; Gold Plate	Tuning Slide Options: Gold brass of various diameters, Rose Brass, or Nickel Silver. Leapipe Options: B1, B2, B3, B4	
	T 063/B		New valve section, exchangeable leadpipe, one-piece valve slides	
	T 063/C		New valve section, exchangeable leadpipe, one-piece valve slides	

Schagerl	Spyder	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	
	Raweni	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	
	Ganschhorn	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched, Scratched silver.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	
	Hans Ganch	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	
	Vienna	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	Comes with mouthpiece
	Berlin	Silver, Vintage Matt Lacquer with gold trim, Vintage Matt Lacquer with silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable gold brass leadpipe on the conical version. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	Previously the Horsdorf model

Schagerl (continued)	Berlin	Silver, Vintage Matt Lacquer with Gold trim, Vintage Matt Lacquer with Silver trim, Finish Lacquer, Gold plate, Gold plate scratched.	Changeable leadpipe. Options include: Adjustable removeable brace, additional water key, heavy bottom valve caps, extra main tuning slide, combination trigger for 1st and 3rd slide.	Comes with mouthpiece. Previously the Horsdorf model
Schiller	Elite	Lacquer		
	Frankfurt Elite	Silver	Exchangeable Symphonic Slide. Heavy duty design. Frankfurt Elite fast flow leadpipe crook	
	Frankfurt Elite - Nickel	Silver	Exchangeable Symphonic Slide. Heavy duty design. Frankfurt Elite fast flow leadpipe crook	
Scherzer	8228	Clear Lacquer, Silver	2 interchangeable leadpipes: a sterling silver for an easy high register, and yellow brass for responsive low register. Optional double trigger for 1st and 3rd valve slide. Optional yellow brass bell	Comes with case, mouthpieces, wrenches, and maintenance accessories
	8218 Cologne	Clear Lacquer, Silver	4 interchangeable gold brass lead pipes with different tapers. Optional double trigger for 1st and 3rd valve slide	Comes with case, mouthpieces, wrenches, and maintenance accessories
	8217 Cologne	Clear Lacquer, Silver	4 interchangeable gold brass lead pipes with different tapers. Optional double trigger for 1st and 3rd valve slide	Comes with case, mouthpieces, wrenches, and maintenance accessories
Stomvi	Titan	Silver or Raw Brass Gold plated upon request.	Removable bell. Comes with 2 leadpipes (#3 and #5)	Bellflex is a flex alloy and treatment acoustically matched to the leadpipe. Purchasers have the option to have valve sections from the Stomvi plant which has a sealed ball bearing or from J. Meinlschmidt. This model has an adjustable receiver to fine tune the response, intonation, and feel.
	Titan	Silver or Raw Brass Gold plated upon request.	Removable bell. Comes with 2 leadpipes (#3 and #5)	Bellflex is a flex alloy and treatment acoustically matched to the leadpipe. Purchasers have the option to have valve sections from the Stomvi plant which has a sealed ball bearing or from J. Meinlschmidt. This

				model has an adjustable receiver to fine tune the response, intonation, and feel.
Thein	Deutsche	Silver	Exchangeable leadpipe. Tuning slide upgrade includes "kappe" and handguard, C, A, and waterkey with "Super sound" quality. Removeable bell	
	Deutsche 4-valve	Silver		
	Deutsche	Silver	Changeable bell system. Tuning slide and leadpipe available to put the instrument in Bb. The bow has a control valve to quickly change back and forth from C to Bb.	
Thomann	Concerto ML/MS/MGP	ML = Clear Lacquer, MS = Silver, MGP = Gold plated	Conical rotary valves. Minibal ball joints. Exchangeable bell	Gig bag included
	Concerto GML/GMS/GMGP	GML = Clear Lacquer, GMS = Silver, GMGP = Gild Plate	Conical rotary valves. Minibal ball joints. Exchangeable bell	Gig bag included
	Classica II MR/MS	MR = Unlacquered, High gloss polish, MS = Silver	Conical rotary valves. Minibal ball joints. Exchangeable bell. Exchangeable leadpipe	Maintenance accessories and Protec case included.
	Classica II GML/GMS	GML = Clear Lacquer, GMS = Silver	Conical rotary valves. Minibal ball joints. Exchangeable bell. Exchangeable leadpipe	Maintenance accessories and Protec case included.
	Classica III GML	GML = Clear Lacquer	Conical rotary valves. Minibal ball joints.	Maintenance accessories and Protec case included.
	Classica III MS	MS = Silver	Minibal ball joints	Protec case included
Weimann	Passion	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
	Classico	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D	

			leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
Weimann (continued)	Vivat	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
	Passion	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
	Classico	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
	Vivat	Polished brass	One-piece valve slides, Hand forged braces, Interchangeable leadpipe. Optional Features: Red Brass (tombac) bell, X, A, or D leadpipe diameters, Bells in different sizes, thickness, with or without garland, or with different plating, and an appliance for a removable bell.	
V. F. Cerveny	501RT	Lacquer		Comes with mouthpiece and case

V. F. Cerveny (continued)	701R	Lacquer		Comes with mouthpiece and case
Wessex	R45	Lacquer or Silver	Comes with a case and mouthpiece	
Yamaha	YTR-938FFMGS	Silver	Heavyweight. Mother of pearl buttons. One-piece hand hammered bell. Adjustable mouthpiece receiver to adjust resistance and playability. "Light-touch mechanism" design for the valves. Comes with 15E4 mouthpiece	Pressure formed tubing. This instrument "was developed at the Yamaha Frankfurt Atelier with input from Markus Bebek, Associate Principal Trumpet of the Opera Frankfurt am Main."
	YTR-948FFMGS		Heavyweight. One-piece hand-hammered bell. Adjustable mouthpiece receiver to adjust resistance and playability. "Light-touch mechanism" design for the valves. Comes with 16E4 mouthpiece. Case included	Pressure formed tubing. This instrument "was developed at the Yamaha Frankfurt Atelier with input from Markus Bebek, Associate Principal Trumpet of the Opera Frankfurt am Main."
	YTR-436G	Clear Lacquer	Medium weight. "Light-touch mechanism" design for the valves. Comes with 15E4 mouthpiece.	Not available in all territories.

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