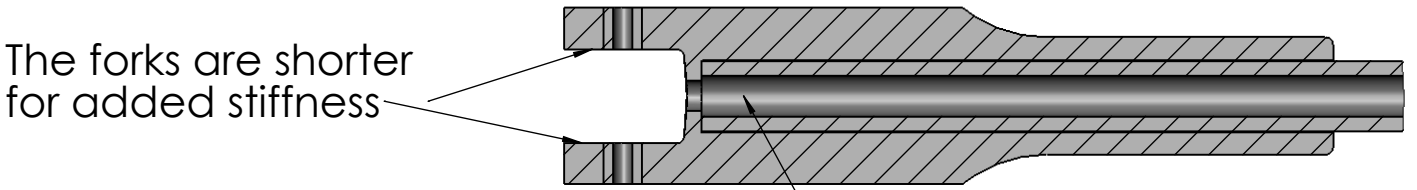
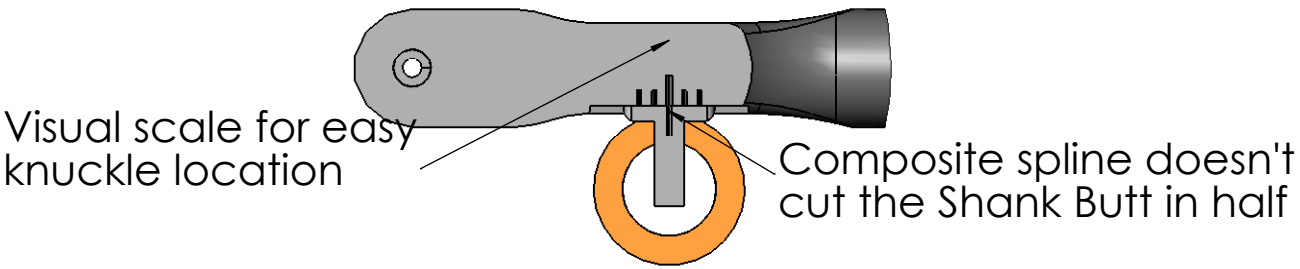
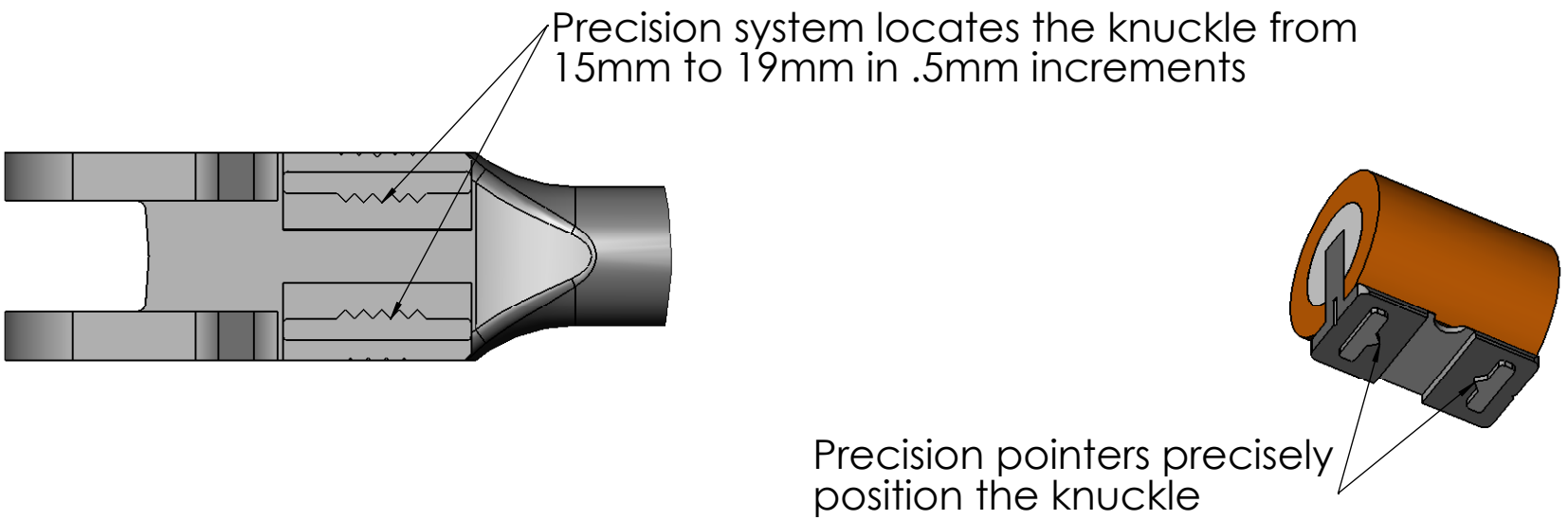
Wessell, Nickel & Gross Shanks & Flanges

New and Improved

The WNG Hammer Shank has been completely redesigned



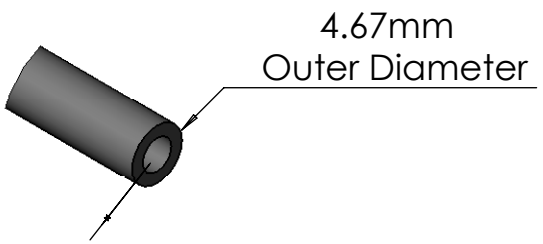




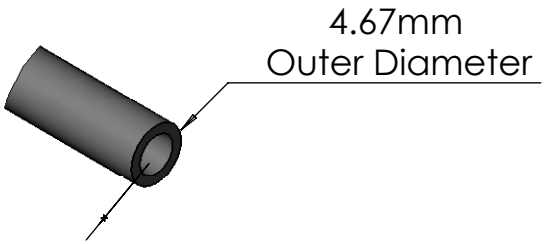
One external diameter for the shank

Three wall thickness for tapering

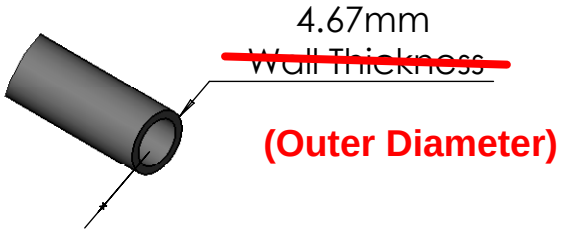
Bass Shank



Tenor Shank



Treble Shank

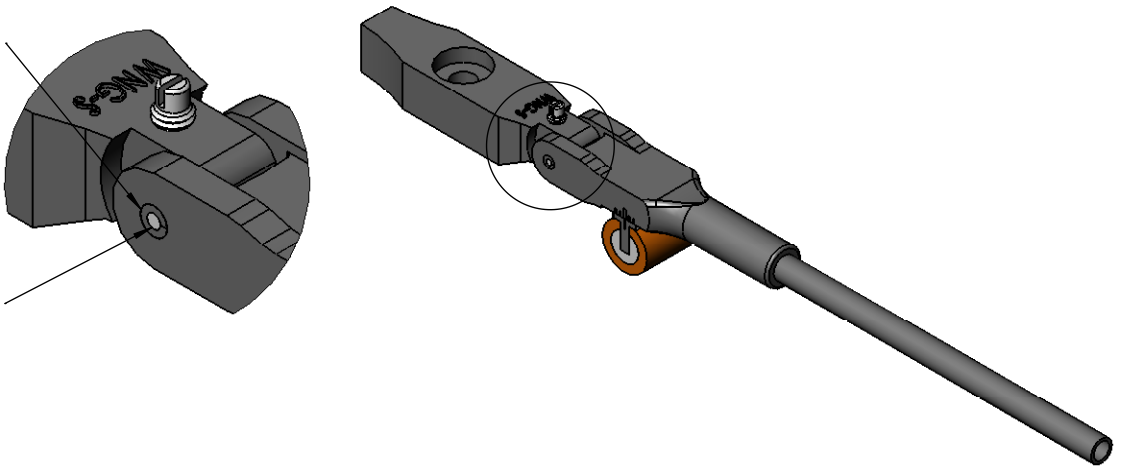


One external diameter makes drilling and hanging hammers easier

Hard Bushings

Dimensionally stable hard bushings

Super precise stainless steel needle bearings are used for center pins



Cloth bushings have problems

- Cloth bushings are unstable in a changing humidity environment
- As cloth bushings change, center pin torque changes
- As pin torque changes so does the touch of the piano

In comparison, hard bushings are quite advantageous

- Hard bushings are dimensionally stable as humidity changes
- When exposed to changing humidity, pin torque change is negligible
- Thus, the change in the touch of a piano is negligible

Test Results

After 18 million blows, pin torque exhibited virtually no change.

In extreme evironments, from 10% to 90% Equilibrium MoistureContent , pin torque was stable.

Give credit to Steinway

Steinway was very progressive and forward looking when they brought out teflon bushings in 1963.

For over a century piano people have understood the problems of cloth bushings. While cloth bushings are durable they are also troublesome. The fight to maintain a reasonable pin torque is constant battle, year after year.

Innovation, at it's best, sees a problem, and brings forth a solution. While often criticized, Steinway engineers saw the problems with cloth bushings and did their best to solve them.

For this they should be lauded. While often accused of cheapening the piano, Steinway tried only to make their pianos better.

Unfortunately, Teflon Bushings failed.

Teflon Bushings failed for 3 basic reasons

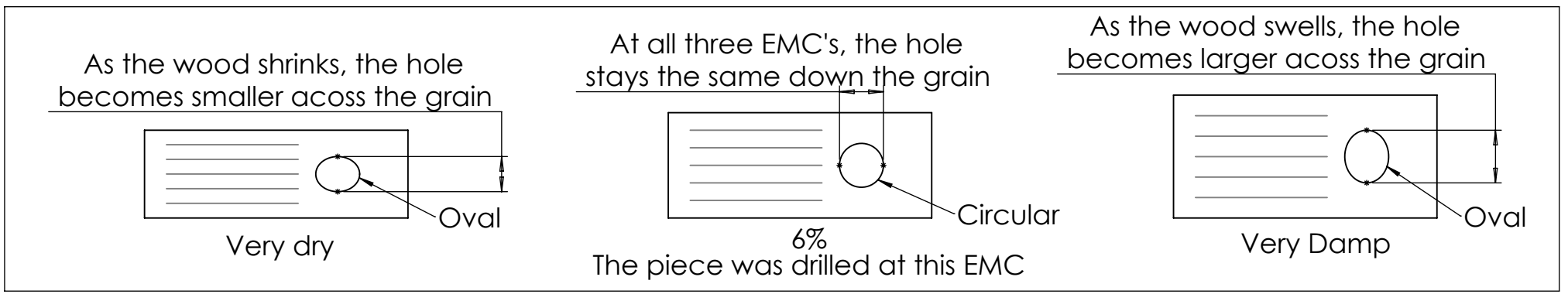
1. **Teflon was too soft, easily deforming under load.**
2. **Teflon bushings became loose or pinched by the wood depending upon EMC.**

   A hole in wood is circular only at the EMC at which it is drilled. As humidity changes, wood changes across the grain but not down the grain . Thus, a hole becomes oval when the EMC is above or below the level at which it was drilled.

   In dry weather, when the wood shrinks, the teflon becomes pinched by the oval hole in the wood. The pin torque becomes very high and piano becomes very hard to play.

   Because the teflon is soft enough to deform, the pressure is able to change the shape of the hole in the bushing.

   Later, during the damp season, the hole becomes larger across the grain than it was drilled. The pin tension in the teflon is no longer correct and furthermore, the bushing itself is now free to move in the hole. This resulted in clicking sounds.



3. **Teflon bushings were not executed with precision sufficient to the task.**

   Because a hard bushing hasn't the give of cloth, much more precision is required during the pinning process.

None of these problems apply to WNG hard bushings

1. **WNG bushing material does not deform under load**.

   Teflon was too soft and easily deformed. The WNG bushing material is substantially more dense and is thus able to carry the load.

2. **Composite action parts are stable during humidity changes and do not alter the cylindrical shape of the bushing.**

   The problems of wood moving around the teflon bushing while the bushing did not are not a problem with WNG composite actions.

   WNG action parts are not made of wood.

3. **WNG uses an extremely accurate process to achieve the necessary accuracy**.

   Any bushing, without give, requires precision. It was true of teflon and it is true with the WNG bushing system as well. Tolerances need to be tight so no motion of the shaft (center pin) in relation to the bearing is possible. It is this motion that causes clicking.

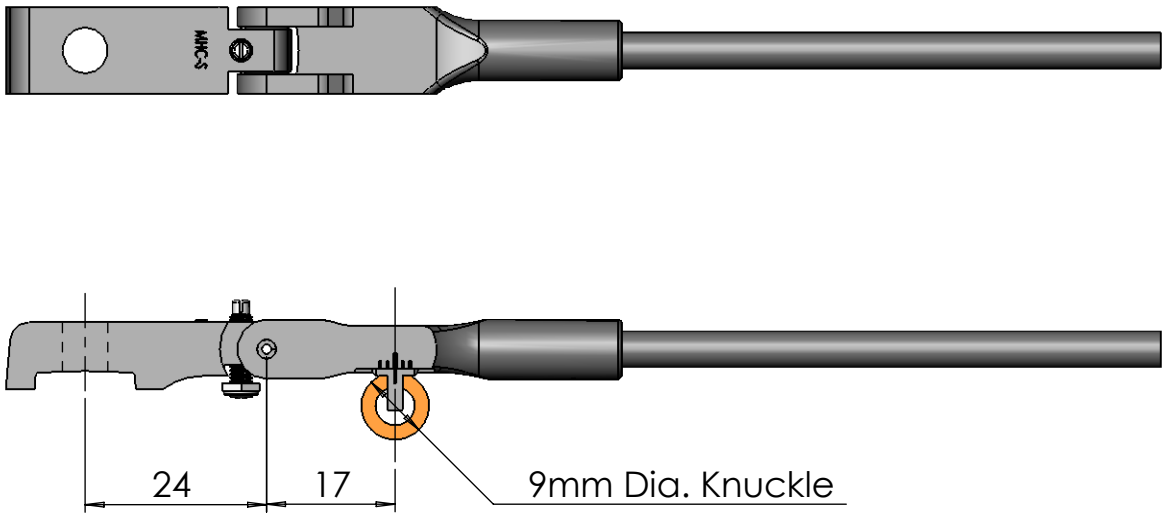
   WNG uses extremely precise stainless steel needle bearings and extremely accurate processes during the pinning process.

Mason & Hamlin Current (S/N 90000 and above)

Set of 90

Part No. 06-5108

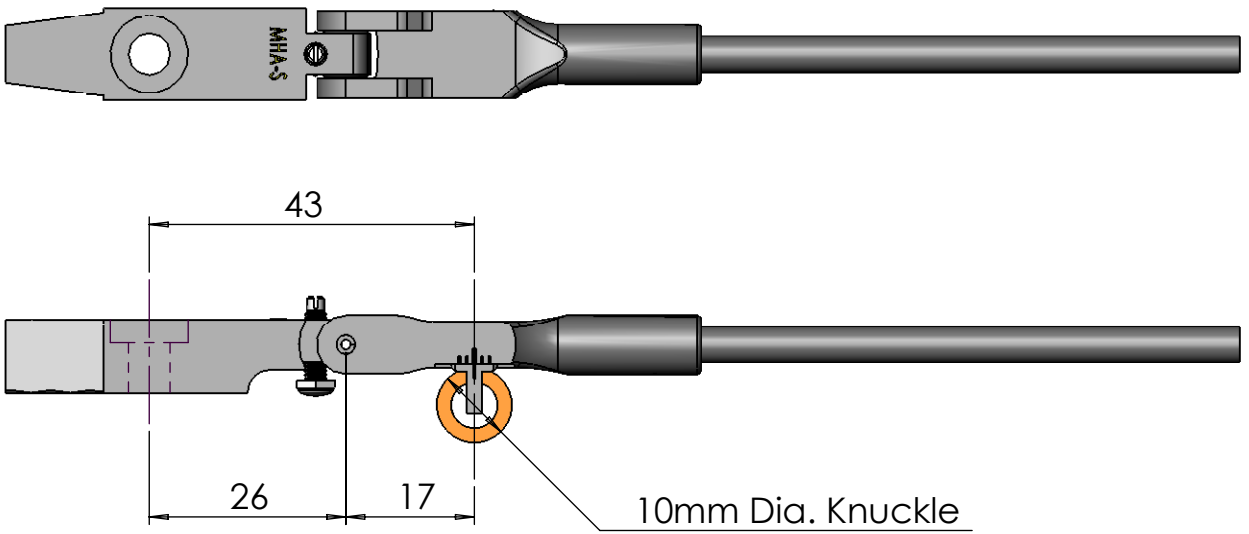
Features low leverage, a medium knuckle and a Current M&H flange



Aeolian Mason & Hamlin

Set of 90
Part No. 06-5104

Features low leverage, a large knuckle and an Aeolian M&H flange

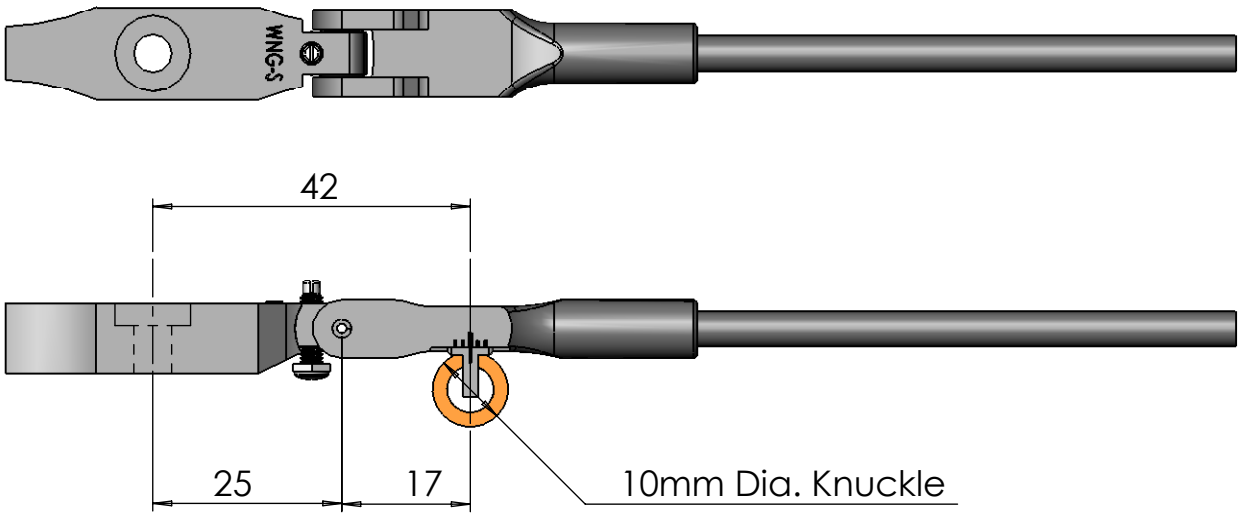


Wessell, Nickel & Gross Classic (Pre Aeolian Mason & Hamlin and more)

Set of 90

Part No. 06-5109

Features low leverage, a large knuckle and a WNG flange

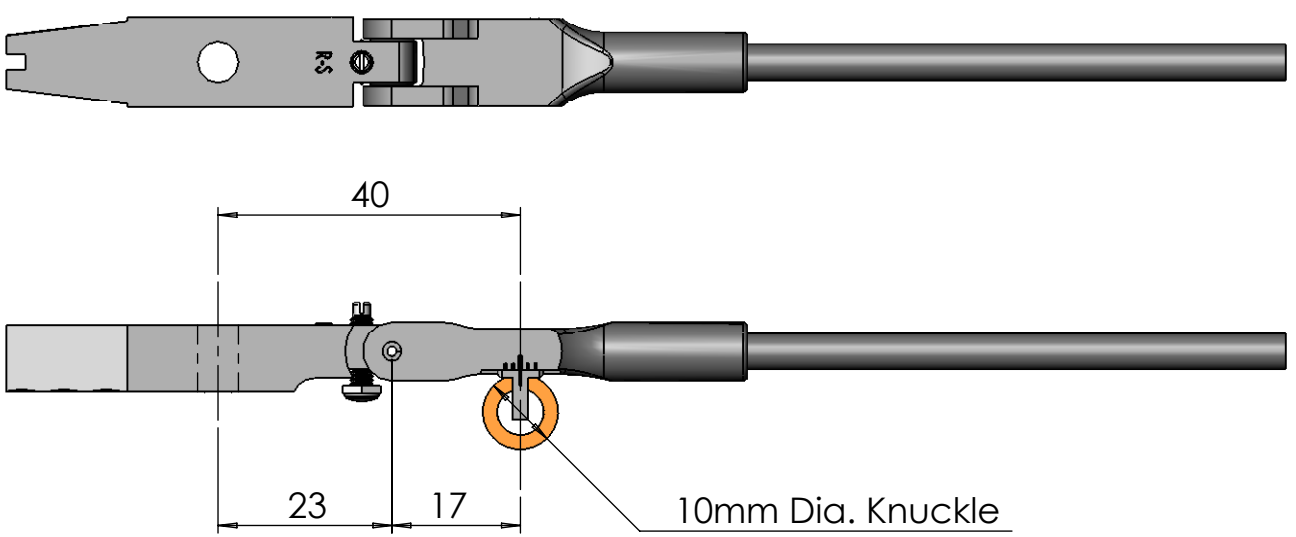


Renner Standard

Set of 90

Part No. 06-5110

Features low leverage, a large knuckle and a Renner flange

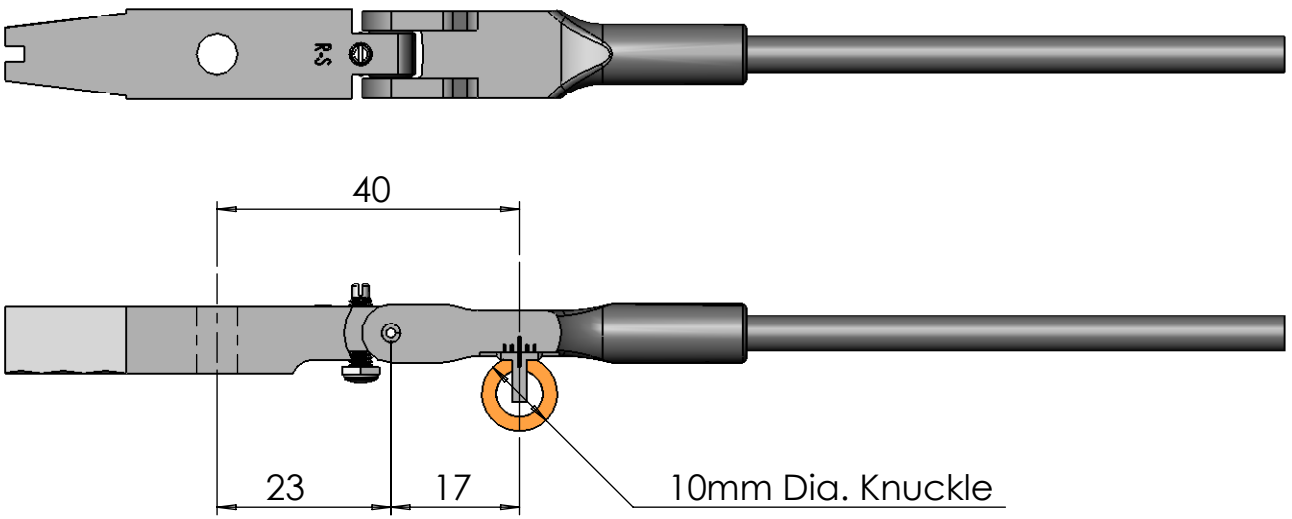


Baldwin Long / Renner Standard

Set of 90

Part No. 06-5110

Features low leverage, a large knuckle and a Renner flange

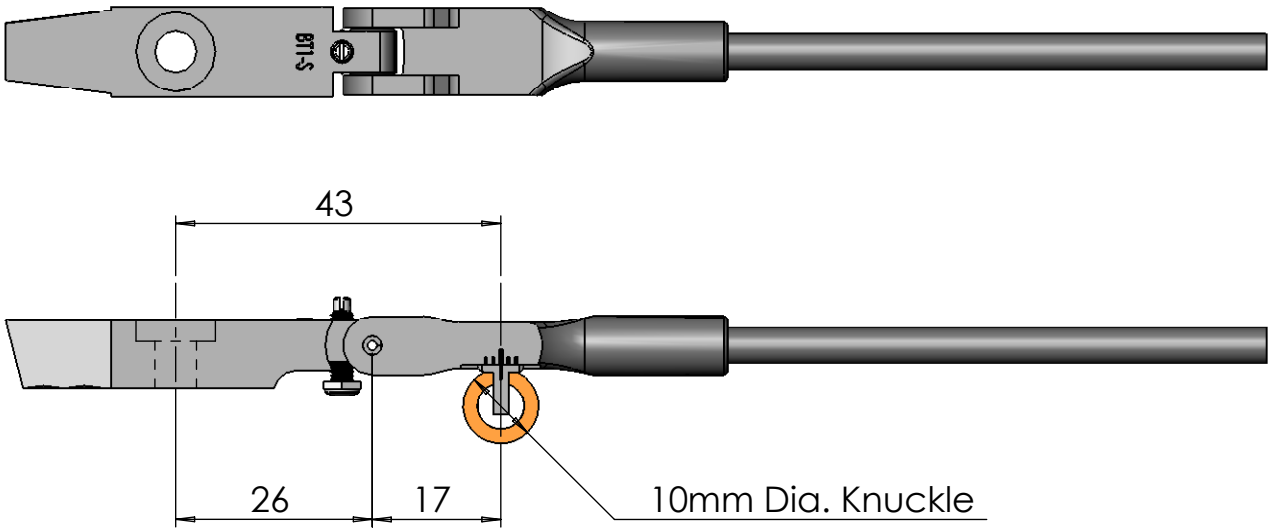


Baldwin Short

Set of 90

Part No. 06-5105

Features low leverage, a large knuckle and a Baldwin flange

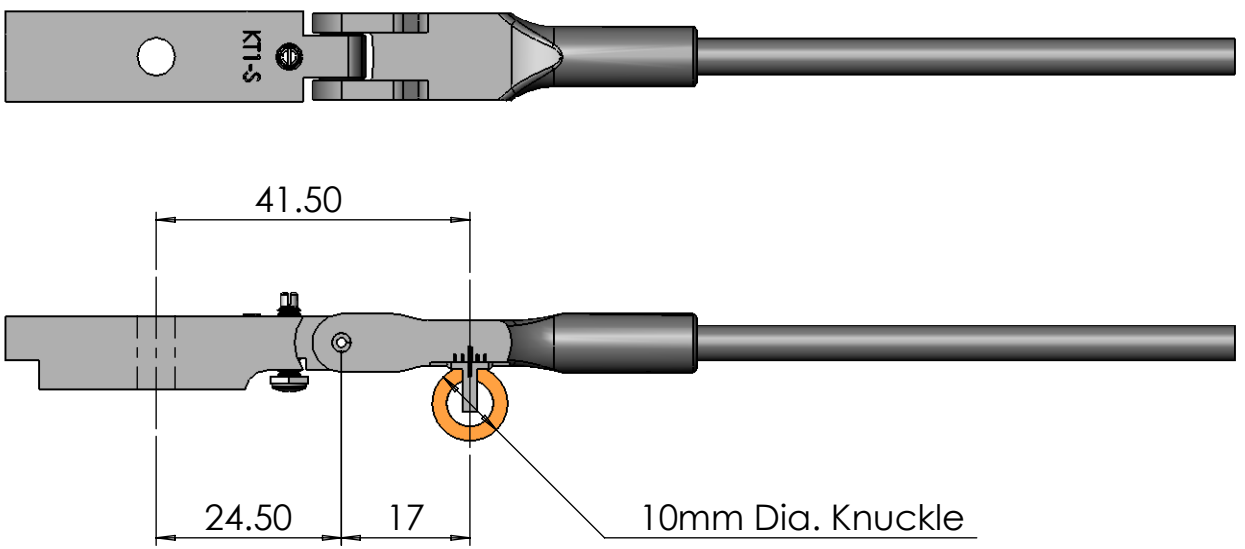


Knabe T1

Set of 90

Part No. 06-5111

Features low leverage, a large knuckle and a Knabe T1 flange

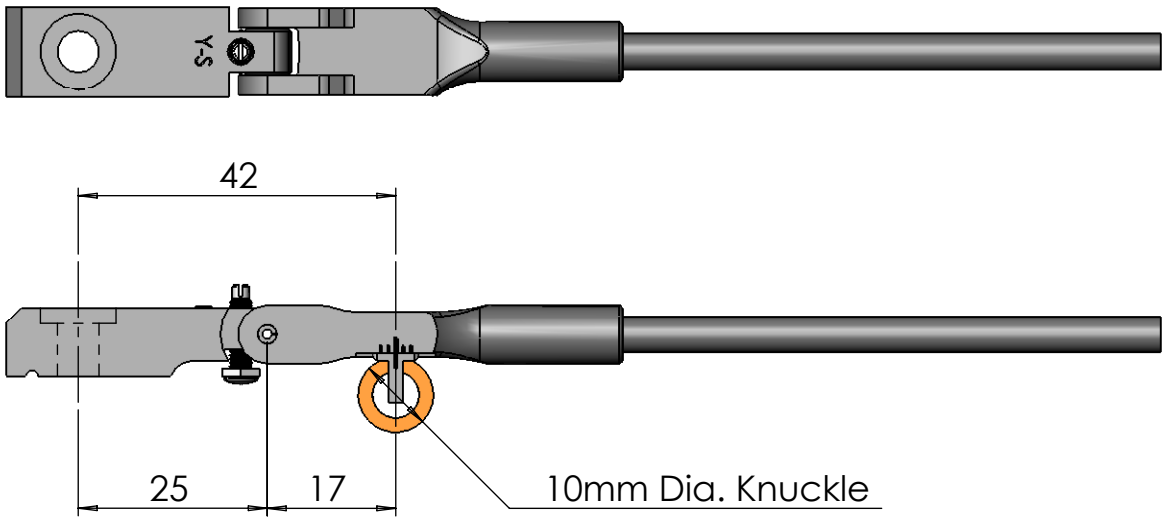


Yamaha

Set of 90

Part No. 06-5107

Features low leverage, a large knuckle and a Yamaha flange

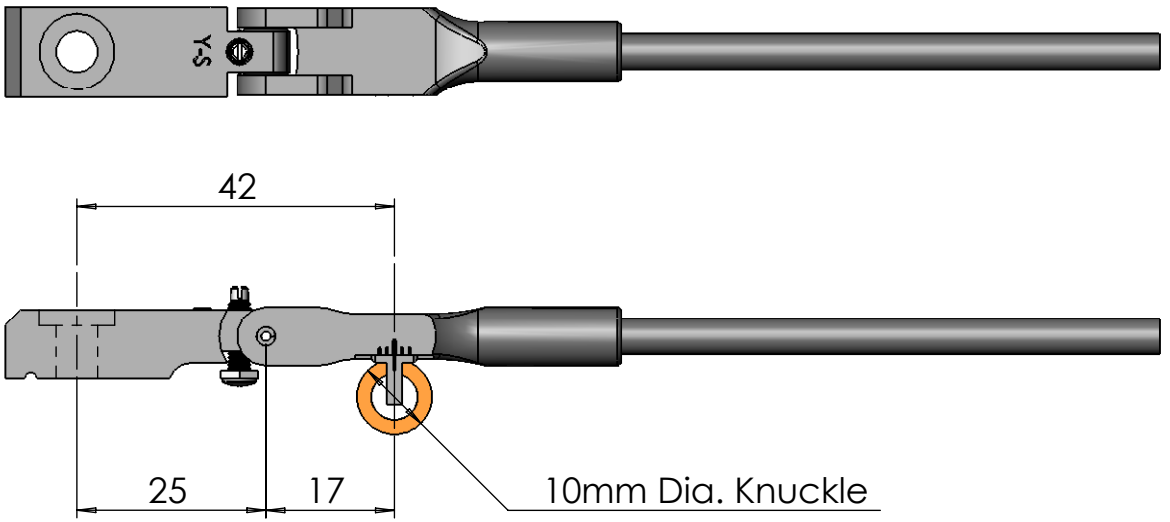


Young Chang / Yamaha

Set of 90

Part No. 06-5107

Features low leverage, a large knuckle and a Yamaha flange

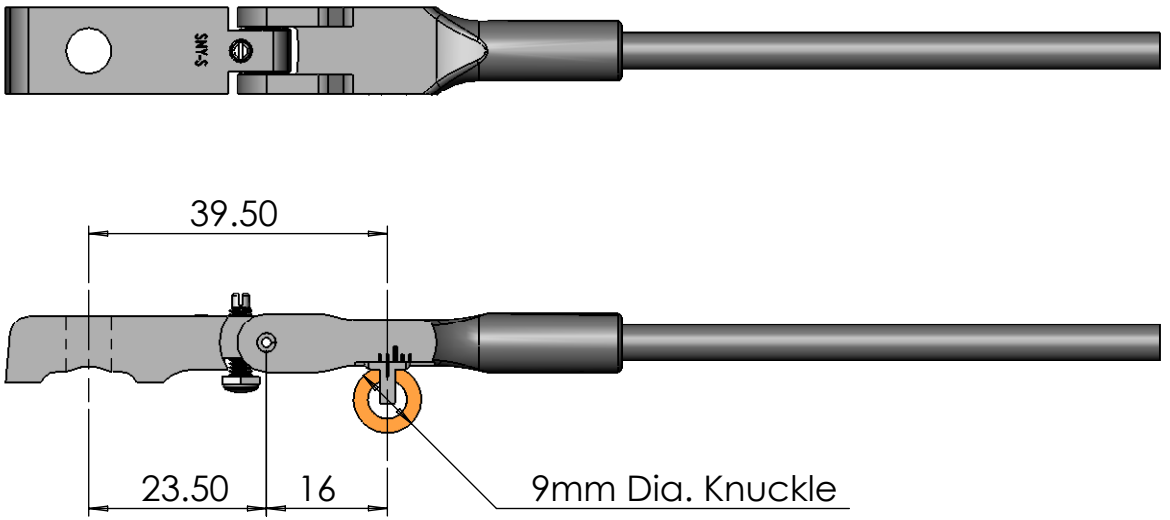


Steinway Type 1

Set of 90

Part No. 06-5100

Features high leverage, a medium knuckle and a New York flange

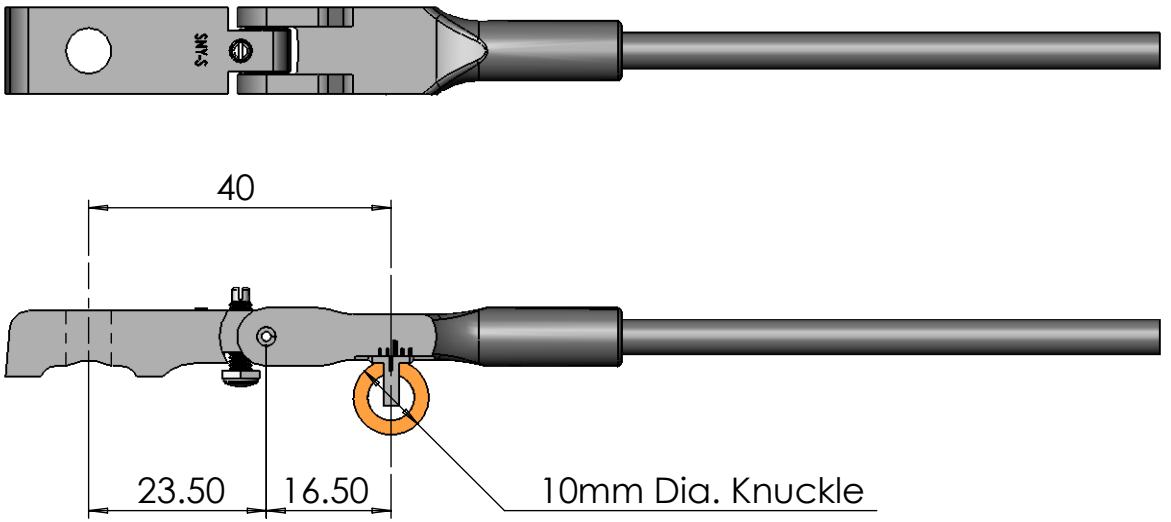


Steinway Type 2

Set of 90

Part No. 06-5101

Features medium leverage, a large knuckle and a New York flange

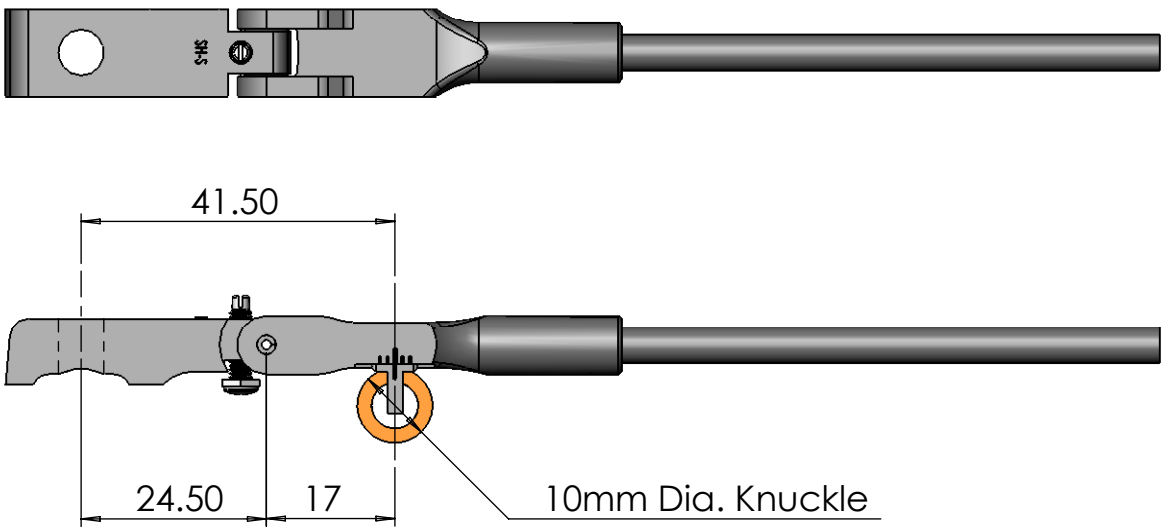


Steinway Type 3

Set of 90

Part No. 06-5102

Features low leverage, a large knuckle and a Hamburg flange

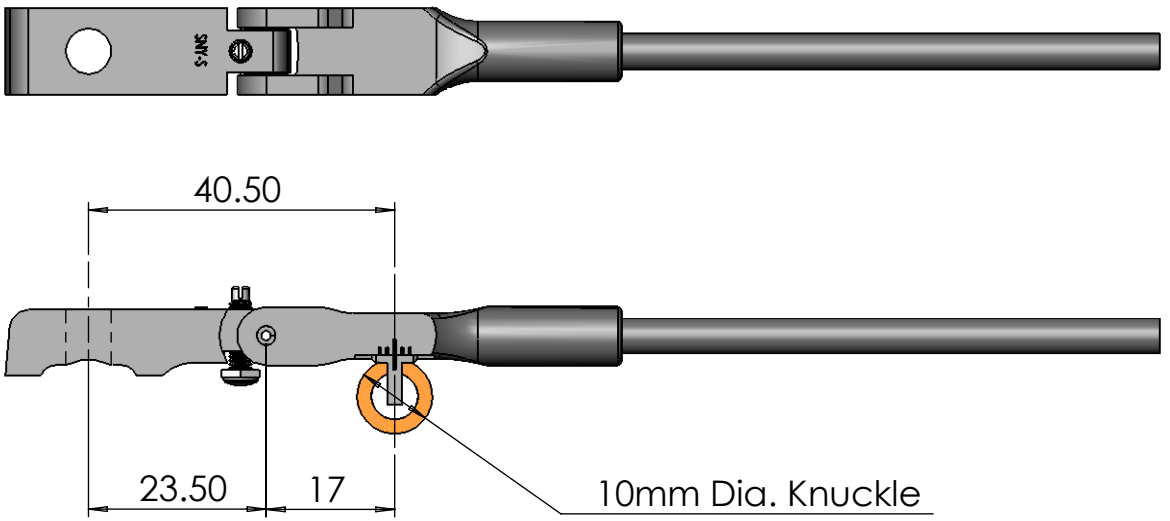


Steinway Type 4

Set of 90

Part No. 06-5103

Features low leverage, a large knuckle and a New York flange



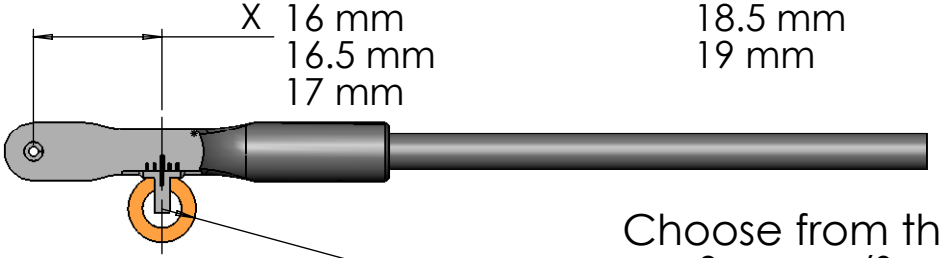
Custom Shank & flange

Set of 90

Creating your own custom shank & flange is as easy as (X), (Y) and (Z)

Choose from the following knuckle locations (X)

15 mm
15.5 mm
X 16 mm
16.5 mm
17 mm
17.5 mm
18 mm
18.5 mm
19 mm

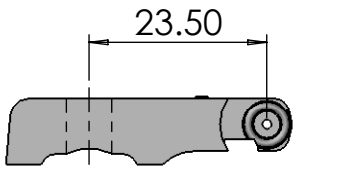


Choose from the following knuckle diameters (Y)

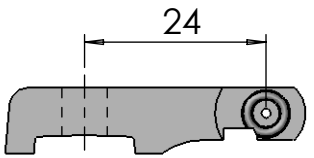
Y

8 mm (Small)
9 mm (Medium)
10 mm (Large)

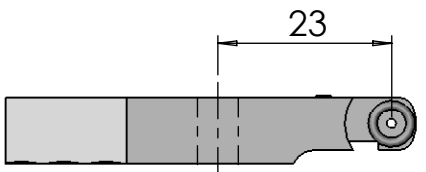
Choose from the following flanges (Z)



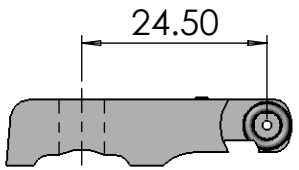
Fits Steinway New York



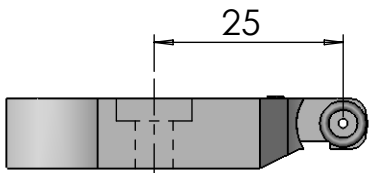
Fits Current Mason & Hamlin



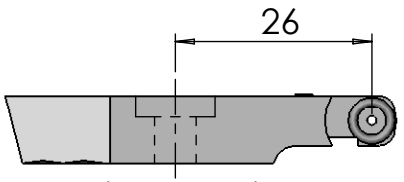
Fits Renner Standard / Baldwin Long



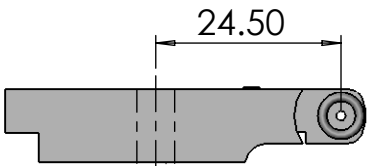
Fits Steinway Hamburg



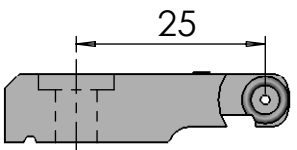
Fits Wessell, Nickel & Gross
(Pre Aeolian Mason & Hamlin)



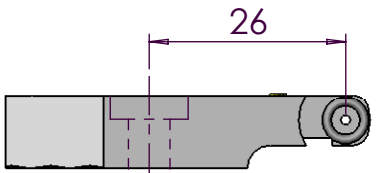
Fits Baldwin Short



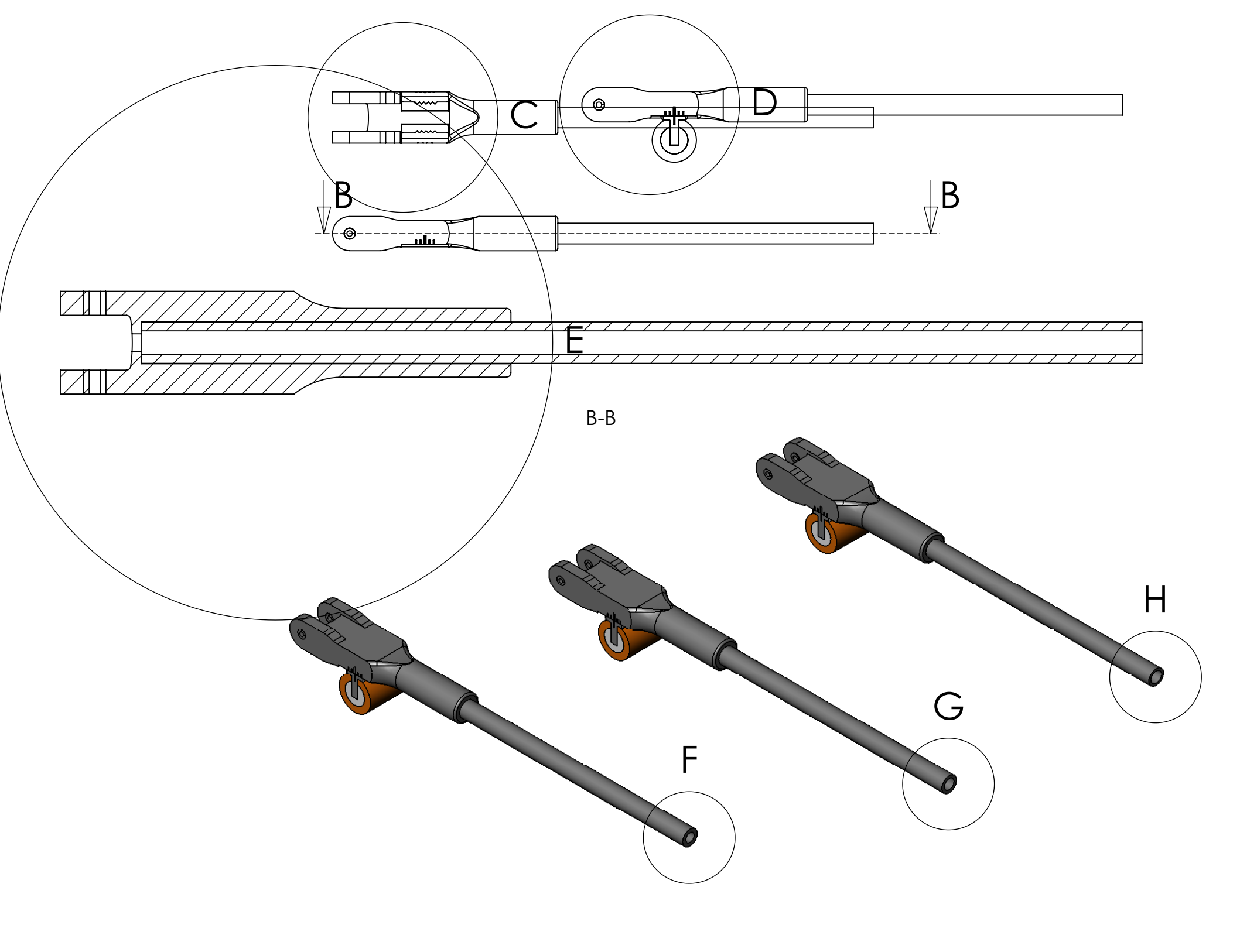
Fits Knabe T1



Fits Yamaha / Young Chang



Fits Aeolian Mason & Hamlin)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