

# PADDLES

## THE PADDLE METHOD Apparatus 2

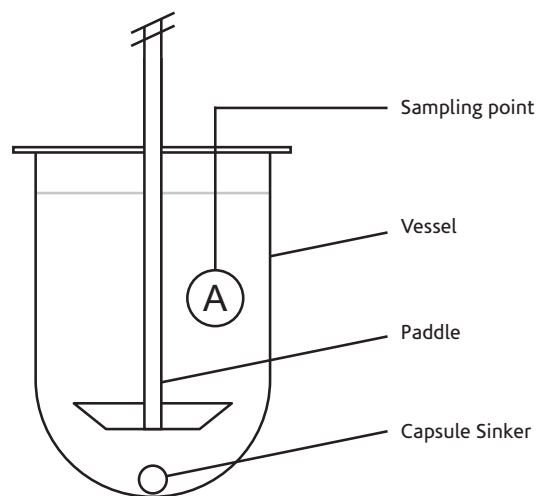
Apparatus 2, commonly known as the paddle method, has similar physical specifications to those of Apparatus 1 with a paddle substituted for the rotating basket.

Some of the dimensions and tolerances for the paddle are critical if consistent results are to be obtained from vessel to vessel.

The USP specifies that the paddle must rotate smoothly without significant wobble. The arc of the paddle blade creates considerable flow and any wobble will have an exaggerated effect on the flow profile.

The contours of the paddle blade must not include any sharp edges — at the tips for instance — that could produce turbulent instead of laminar flow patterns.

All QLA paddles are certified U.S. Pharmacopeia compliant where applicable and meet machine manufacturer specifications.



## KEY CONSIDERATIONS

### Types of Paddles:

**Electropolished 316 Stainless Steel** — The 316 stainless steel (316 SS) shaft is strong and has a high resistance to bending. It is electropolished for removal of surface impurities and corrosion resistance.

**PTFE Coated** — The USP suggests that paddles may be coated with an inert coating. Most paddles are accordingly coated with PTFE or another inert coating. If peeling or flaking of the coating is observed then the paddles should be replaced.

**Solid Fluoropolymer** — The single piece molded design features a fluoropolymer blade and single piece stem molded onto an electropolished 316 SS shaft.

This innovative design features no paddle-to-shaft joint, thus eliminating potential cross-contamination and removing a probable corrosion path. Wobble is also considerably reduced in the solid fluoropolymer paddle because it is a single piece cast.

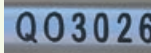
## CARE & MAINTENANCE

**Shaft Storage** — Bent or scratched shafts fail to comply with USP regulations so it is essential not to store shafts on a desk or loose in a drawer where damage or corrosion can occur. Proper storage in a basket shaft/paddle holder can prevent damage from occurring. See below for Basket Shaft/Paddle Holders.

**Wobble** — A Wobble Meter (WOBMET-MI) is available to monitor paddle wobble. See page 42 for Wobble Meter.



**Note:** All paddles are laser marked with a unique serial number and come with COC.



## BASKET SHAFT/PADDLE HOLDERS

Ideal for both basket shaft and paddle storage.

### Key Benefits:

- Prevents shafts/paddles from becoming bent or scratched
- Allows quick and easy transport of many shafts/paddles
- Handy end plate to stop shafts/paddles sliding out when carrying
- Holds most lengths and types of basket shafts and paddles
- Non-corrosive, quality plastic construction
- Space-saving, attractive design
- Available in both 12 and 16 shaft capacities



**Dual Purpose:** The Basket Shaft/Paddle Holders are designed for optimal handling and storage of both basket shafts and paddles. Why not use one to keep a set of both paddles and basket shafts next to each bath?

Part No.	Description	OEM Ref
PADHLD-12A	12 Position Paddle/Shaft Holder	QLA
PADHLD-16A	16 Position Paddle/Shaft Holder	QLA

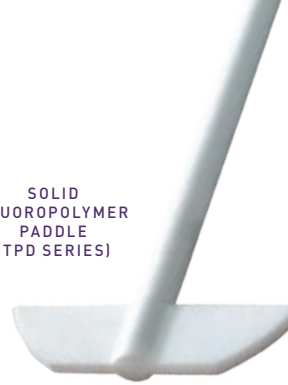
POLISHED STAINLESS STEEL PADDLE (EPD SERIES)



PTFE COATED PADDLE (NPD SERIES)



SOLID FLUOROPOLYMER PADDLE (TPD SERIES)

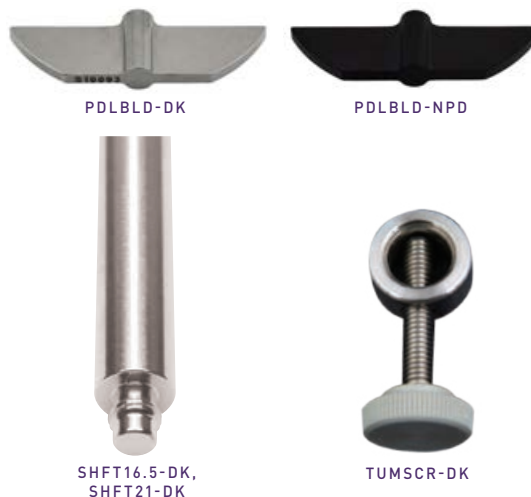


**AGILENT COMPATIBLE PADDLES** (INCLUDES LEGACY VANKEL)

Part No.	Description	OEM Ref
EPD013-01	14.5" (370mm) Paddle for V-Series, Electropolished 316 SS, Serialized	13-3590
EPD015-01	15" (380mm) Paddle, Electropolished 316 SS, Serialized	12-1030
EPD019-01	19" (480mm) Paddle, Electropolished 316 SS, Serialized	12-1040
EPD021-01	21" (535mm) Paddle, Electropolished 316 SS, Serialized	13-3595
EPD024-01	24" (610mm) Paddle, Electropolished 316 SS, Serialized	13-3597
NPD013-01	14.5" (370mm) Paddle for V-Series, PTFE coated over 316 SS, Serialized	13-3589
NPD015-01	15" (380mm) Paddle, PTFE coated over 316 SS, Serialized	12-1000
NPD019-01	19" (480mm) Paddle, PTFE coated over 316 SS, Serialized	12-1010
NPD021-01	21" (535mm) Paddle, PTFE coated over 316 SS, Serialized	13-3594
NPD024-01	24" (610mm) Paddle, PTFE coated over 316 SS, Serialized	13-3596
TPD013-01	14.5" (370mm) Paddle for V-Series, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA
TPD015-01	15" (380mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA
TPD019-01	19" (480mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA
TPD021-01	21" (535mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA

**DISTEK COMPATIBLE PADDLES**

Part No.	Description	OEM Ref
EPD016-02	16.5" (420mm) Paddle, Electropolished 316 SS, Serialized	QLA
NPD016-02	16.5" (420mm) Paddle, PTFE coated over 316 SS, Serialized	2821-0171
TPD016-02	16.5" (420mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA
SHFT16.5-DK	16.5" (420mm) Detachable Shaft, 316 SS, Serialized	2800-0165
SHFT21-DK	21" (535mm) Detachable Shaft, 316 SS, Serialized	2800-0334
SHFT21-NPD	21" (535mm) Detachable Shaft, PTFE coated over 316 SS, Serialized	2800-0334-T
ORING-SHFT	Black Viton O-Ring for Distek detachable shafts (Pack/12)	5570-8044
PDLBLD-DK	Paddle Blade, Electropolished 316 SS, Serialized	3251-1050
PDLBLD-NPD	Paddle Blade, PTFE coated over 316SS, Serialized	3251-1050-T
TUMSCR-DK	Shaft Collar with Thumb Screw for 2100 Series	2821-0094



**HANSON (SR8-PLUS) COMPATIBLE PADDLES**

Part No.	Description	OEM Ref
EPD016-01	16" (405mm) Paddle, Electropolished 316 SS, Serialized	65-700-036
NPD016-01	16" (405mm) Paddle, PTFE coated over 316 SS, Serialized	QLA
TPD016-01	16" (405mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	72-800-456
TPD018-01	18" (460mm) Paddle, Solid Molded Fluoropolymer, One Piece Design, Serialized	72-800-461

**SOTAX COMPATIBLE PADDLES**

Part No.	Description	OEM Ref
TPD012-ST	11.85" (300mm) Paddle with 10mm OD, Solid Molded Fluoropolymer, One Piece Design, Serialized	QLA

Note: Hanson Vision 2-piece Shafts can be found in SPIN SHAFT Section, page 14.