

HALE PUMPS

Hale Fire Pump Company
708 Spring Mill Avenue
Conshohocken, Pa. 19428
(215) 828-8835

April 19, 1976

SERVICE BULLETIN #28

TO: ALL HALE CUSTOMERS

SUBJECT: Undersize Clearance Rings

Gentlemen:

Continuing our efforts to provide you good economical service practices, we are introducing the expansion of our Undersize Clearance Ring program.

Available very shortly will be undersize clearance ring to accommodate the following pumps: 60FR, 60FB, 50FR, 50FB and the "P" series front mount pump. In addition to the new listings, we have substantially updated the list of midship pumps previously covered by this program. Please note the significant modifications to this list, additions, deletions and corresponding machining changes, i.e. the QLD-321U clearance ring has been discontinued in favor of the QLD-321D with new machining requirements for the impeller hub.

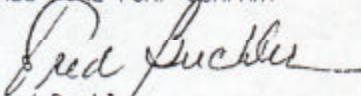
As you know, implementing this program effectively restores tolerances to design size between the impeller and clearance ring. By machining the original impeller hub to the appropriate size shown on the chart, the purchase of the appropriate undersize clearance ring will restore the tolerances to 005 to 007.

Careful examination of the original impeller is required before considering this program.

1. Check impeller hub wear to ensure enough metal to allow machining to new dimension.
2. Check internal segments of impeller and remove any blockage.
3. Check keyway of impeller for any rupture, cracks or excessive enlargement.
4. Inspect impeller vane edges for sharpness, grinding and rebalancing may be necessary for maximum performance.

Sincerely,

HALE FIRE PUMP COMPANY


Fred Buchler
Manager, Customer Service

FB:jz
Encl.

Fire, Irrigation, Contractor
and Petroleum Pumps



Ball Valves, Accumulators
and Proportioners

UNDERSIZE CLEARANCE RINGS

PUMP TYPE	PART NO. UNDERSIZE CLEARANCE RING	* TURN IMP. HUB TO THIS DIAMETER FOR THIS LENGTH AND BLEND INTO SHROUD	REMARKS CENTER BRG. HUB
QSM15, Q & QSMD	QSM15-321U	$\frac{5.408}{5.406} \times \frac{11}{16}$	$\frac{2.286}{2.284}$
QSM	QSM-321U	$\frac{4.908}{4.906} \times \frac{11}{16}$	
QLD & QSD	QLD-321D	$\frac{4.802}{4.800} \times \frac{11}{16}$	$\frac{1.917}{1.919}$
ZM, ZMF & ZMHD	ZM-321U	$\frac{5.408}{5.406} \times \frac{7}{8}$	
ZEY, ZEYC, ZEYCH & ZEYM	ZEY-321U	$\frac{3.907}{3.905} \times \frac{11}{16}$	
QL & HPQL	321-0221-01	$\frac{4.552}{4.550} \times \frac{7}{8}$	THIS RING CAN ALSO BE USED AS AN UNDER-SIZE REPLACEMENT PART FOR QL PUMPS WITH ZS-321 & QL-321 RINGS
Z, ZD, ZF, ZS ZSF, ZSD, ZSU, ZSUD, ZMM & ZMMD	321-0221-01	$\frac{4.552}{4.550} \times \frac{7}{8}$	$\frac{13}{16}$ LENGTH Z-16 IMPELLERS
ZL & HPZL	ZL-321U	$\frac{3.927}{3.925} \times \frac{3}{4}$	
ZLU, ZEYD, ZEYG ZEYDH, ZEYN	ZLU-321U	$\frac{4.052}{4.050} \times \frac{3}{4}$	
QS	QS-321U	$\frac{5.535}{5.533} \times \frac{7}{8}$	
4D	4D-321U	$\frac{4.679}{4.677} \times \frac{23}{32}$	
6D	6D-321U	$\frac{5.408}{5.406} \times \frac{11}{16}$	

*NOTE: IMP. HUB IS .060 TO .080 SMALLER THAN ORIGINAL SIZE.

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Conshohocken, Pa.

UNDERSIZE CLEARANCE RINGS

PUMP TYPE	PART NO. UNDERSIZE CLEARANCE RING	TURN IMP. HUB TO THIS DIAMETER FOR THIS LENGTH AND BLEND INTO SHROUD (see drawing)	REMARKS
6F, 6FR, 60FB 60FR SERIES	321-0040-01	$\frac{6.421}{6.419} \times \frac{13}{16}$ FRONT - $\frac{7}{8}$ REAR	REDUCTION .080
5F, 5FR, 50FR, 50FB SERIES	321-0050-01	$\frac{4.978}{4.976} \times \frac{3}{4}$ FRONT - $\frac{29}{32}$ REAR	REDUCTION .080
P	321-0080-01 FRONT	$\frac{5.408}{5.406} \times \frac{23}{32}$	REDUCTION .080
P	321-0090-01 REAR	$\frac{5.408}{5.406} \times \frac{13}{16}$	REDUCTION .080

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