

NEW IN THE **QUAD⁺DRILL⁺** LINE FOR ALUMINUM DRILLING

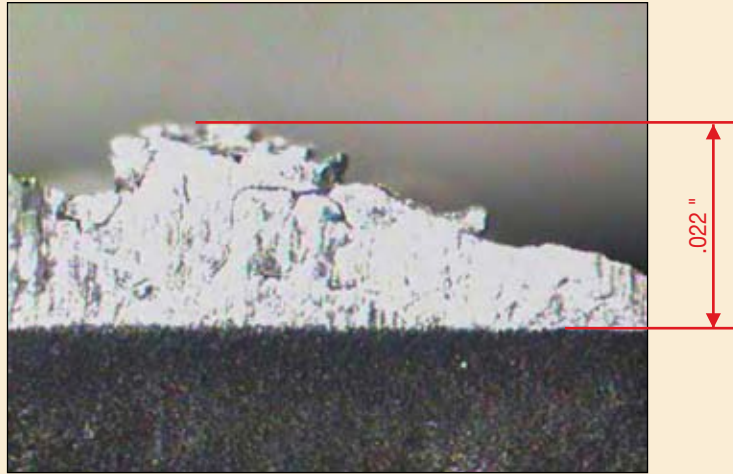


Ingersoll's endeavor to manufacture exceptional hole making products continues with the new Chipbreaker for drilling aluminum. The new "HP" Chipbreaker has a polished top surface and is ground peripherally to minimize cutting forces and built-up-edges during drilling on aluminum material. The end user can use each HP insert in the same QuadDrill range of diameters as the existing PH or PH1 inserts.

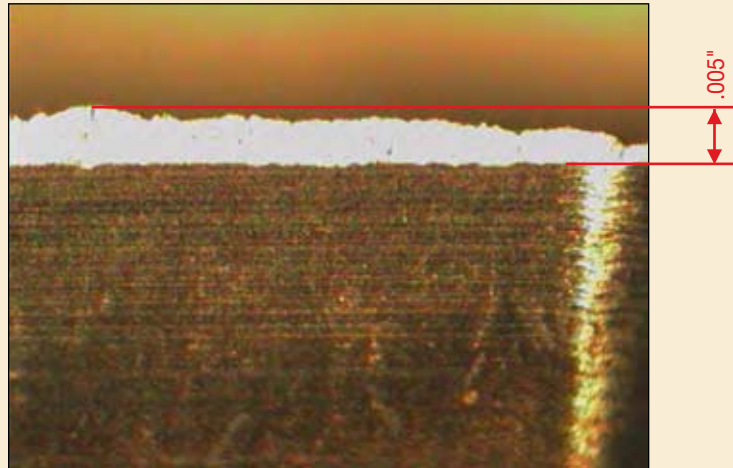
COMPARISON TEST BETWEEN HP AND THE PH (PH1) CHIPBREAKER

Drill: Q0270108N6R01
Insert: SPLT07T308N-PH IN2005 on both pockets.
SDGT07T308N-HP IN10K on both pockets.
Machining Condition: $V = 1150$ SFM, $f = 0.008$ in/rev.
Workpiece: AC4C (Si 6%) Aluminum

BUILT-UP EDGE ON EACH CHIPBREAKER AFTER 200 INCH DRILLING.



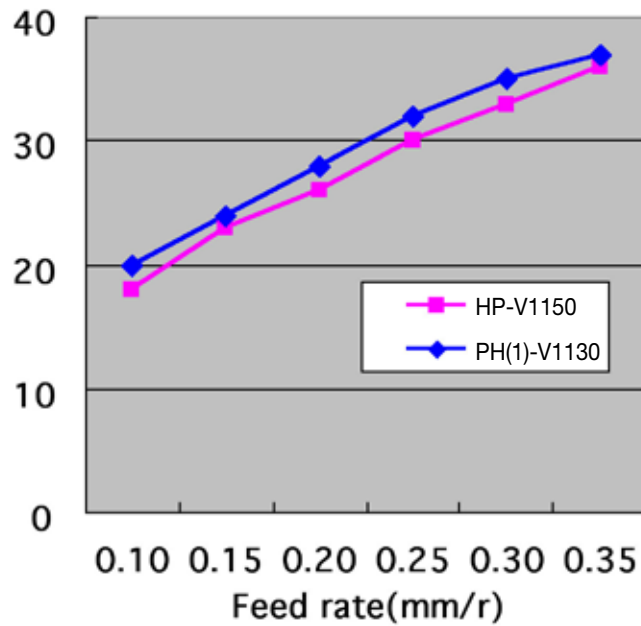
From SPLT07T308N-PH IN2005
Insert in central pocket.



From SDGT07T308N-HP IN10K
Insert in central pocket.

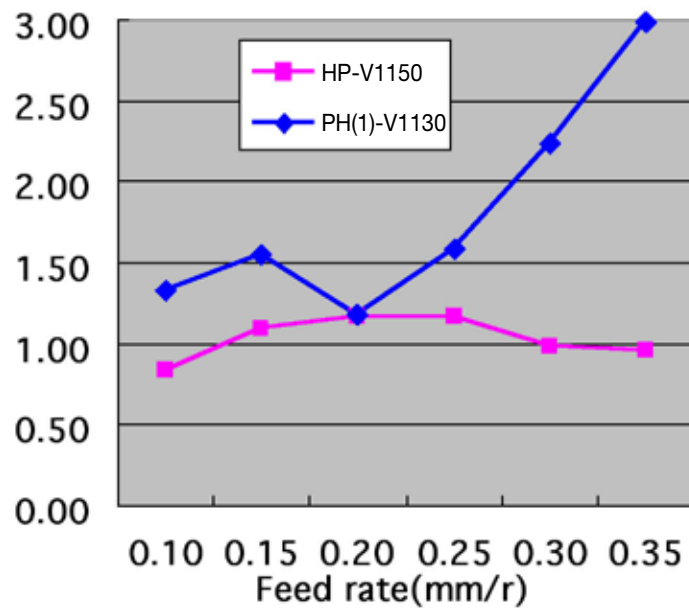
It is almost impossible to avoid formation of built-up edges when drilling on aluminum, but as the above shows, the HP can minimize it's formation with polished top surface and sharp edge ground peripherally.

CUTTING FORCE COMPARISON BETWEEN PH (PH1) VS HP PER FEED RATE.

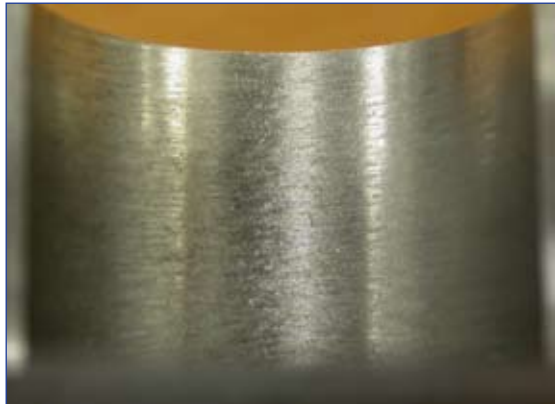


HP can reduce cutting forces by a minimum of 2% compared to the PH (PH1), when drilling aluminum.

SURFACE FINISH COMPARISON DRILLED WITH PH (PH1) AND HP PER EACH FEED RATE.

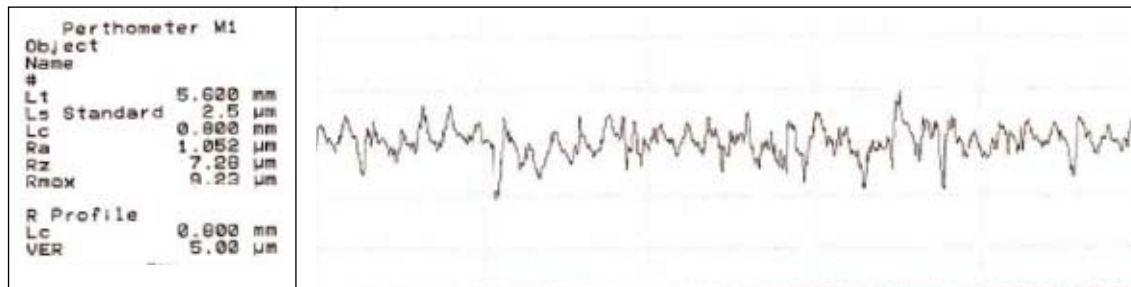


SURFACE FINISH



HP can achieve much better surface finish at high feed rate.

Drilled with HP at V=1150 sfm

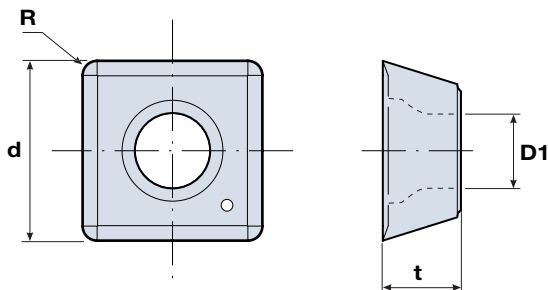


This demonstrates that the HP works on aluminum successfully and can achieve these advantages against PH (PH1) Chipbreaker:

- A. Tool life is increased by apprximately 4 times
- B. Improved hole surface & tolerance.
- C. Reduced cutting force by 2% minimum.

TABLE OF INSERTS - INSERTS FOR ALUMINUM ALLOY

■ SHGT/SDGT □□□□□ HP



Designation	Dimensions (inches)				Drill range	Grade
	d	t	R	ØD1		
SHGT050204-HP	.200	.094	.016	.089	.50 - .594	○
SHGT060204-HP	.289	.094	.016	.103	.625 - .813	○
SDGT07T308-HP	.315	.156	.031	.112	.843 - 1.063	○
SHGT090408-HP	.389	.169	.031	.159	1.094 - 1.312	○
SHGT110408-HP	.453	.189	.031	.175	1.343 - 1.625	○
SDGT140512-HP	.563	.205	.097	.226	1.687 - 2.000	○