

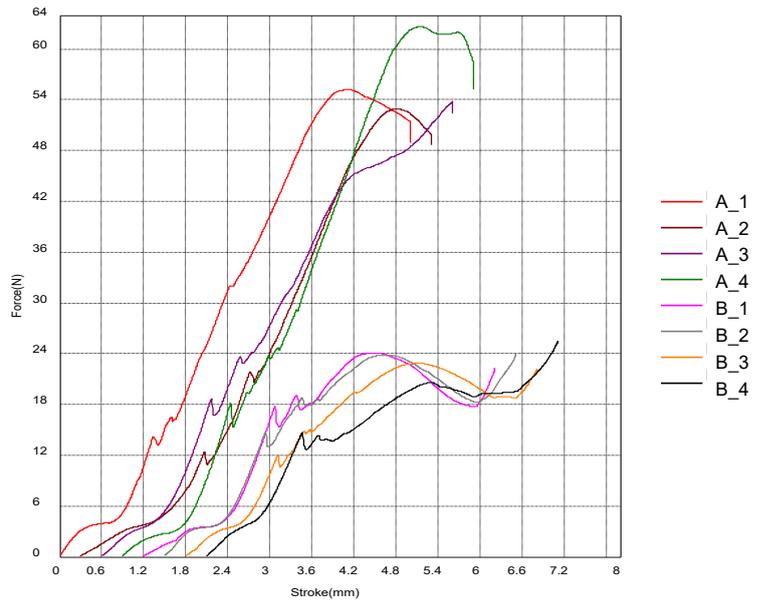
# Push-Out Test for Pills in Push-Through-Packs

## Pharmaceutical and Medical Evaluations

Push-out tests for push-through-packs (PTP) help to evaluate the force applied when a person removes a pill from its wrapping. A pill in a PTP is placed on an adapter, which has a hole in it, and the pill is pushed out from above by a probe. The test force at this point is equivalent to the strength required to push the pill out of the PTP. This strength is evaluated to make it easier to remove pills, while also ensuring they are not inadvertently pushed out of the packaging.



Pill Push-Out Test Using a Pill Push-Out Test Jig Set



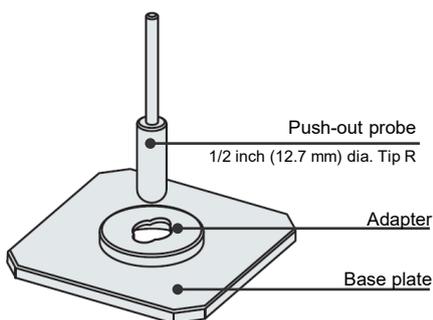
Pill Push-Out Test Results

Name	Maximum Test Force	Peak Test Force
Unit	N	(Aluminum Rupture) N
A_1	55.2	14.2
A_2	53.0	12.4
A_3	53.8	18.6
A_4	62.7	18.0
Average value	56.2	15.8
B_1	24.1	17.6
B_2	23.9	14.7
B_3	22.9	12.0
B_4	25.5	14.7
Average value	24.1	14.8

Tests were performed on two types of PTPs with the same shape (A and B). In comparing the test force when the aluminum wrapping starts to rupture (the point when the test force starts to fall off sharply), it is evident that the values for both types are about the same.

In contrast, they differ significantly in terms of the maximum test force, with the value for A more than twice the value for B. The maximum test force is likely the plastic pressing force required to completely push the pill out of the PTP after the aluminum ruptures.

While PTPs may have the same shape, different kinds of plastic materials are often used for PTP sheets depending on the type of pill. Therefore, experimental evaluations of the ease of pill push-out and retrieval are required depending on the plastic material used and the PTP shape.



### Pill Push-Out Test Jig Set

Push-out tests on pills and capsules with different sizes can be performed by changing the adapter. Adapters with four different hole sizes are available, and can be exchanged to suit the pill size. Attach the base plate to the jig platform. When the pill or capsule is pushed out, it is collected by the receptacle provided.