

# THE VALUE OF TRANTEX THERMOPLASTIC DIES



**The Trantex die** is an incredibly unique thermoplastic die. This report highlights the obvious dramatic differences versus other thermoplastic die choices. Let's go over the unique features of a Trantex die that make a huge difference everyday with users of all experience levels.

## **DIE CONSTRUCTION:**

Trantex dies are manufactured with more steel and thicker steel than any other steel die. Trantex dies are nearly twice the weight of competitive steel dies. Even in the less critical areas of die construction, the Trantex die has 25% heavier wall thickness. What does this added thickness, weight, and mass do for you?



1. A heavier die makes every attempt to maintain a perfect seal with the road surface regardless of road surface conditions. Trantex uses this heavier die weight to maintain the surface seal. This makes the Trantex die stand out when dealing with irregular surfaces like chip seal, exposed aggregate, or just uneven surfaces. With lighter weight dies, line quality begins to deteriorate under challenging conditions. Some steel designs, and all aluminum dies, rely on a mechanical linkage to maintain the fixed surface contact. This mechanical linkage is typically set at a fixed depth and surface irregularities will degrade line quality noticeably. The linkage may not maintain ideal road surface contact on steeper hills, both up and down. The Trantex die's extra weight and ability to float these surface changes (up, down, left, and right), sets it apart from the crowd.
2. The use of more steel in die construction allows superior temperature stability which adds consistency and improves line quality day in and day out.
3. Having more easily controlled die temperatures simplifies the operation, improves performance, and enhances production. No more rapid temperature spikes up or down!
4. Another great benefit of using heavier and greater capacity Trantex dies over lighter steel and aluminum versions is the potential for reduced propane use. Over the course of a year, the Trantex dies may even begin to pay for themselves through efficiencies gained.
5. Fast "really NO TOOLS" die change. Trantex' simple and efficient hand tight levers allow you to quickly and effortlessly change dies. This no tools mount allows for die rotation to the left and to the right to easily deal with the crest on any road. Aluminum die edge line quality suffers quickly under these conditions as they have little to no side rotation capability.

## **DIE CAPACITY:**

Trantex dies are designed to carry more melted material than any other die. In fact, the Trantex die carries 30% more onboard melted material than the next closest product. Incredibly, the Trantex dies holds 160% more capacity than aluminum dies. What does this added capacity do for you?

1. First off, this additional capacity adds to the die's "down pressure", dramatically improving the die's ability to hold fast to the road surface. At the same time, the additional weight of the thermoplastic further stabilizes die movement (in all directions). This stabilization reveals itself with every use, but becomes especially noteworthy when the die encounters more challenging road surfaces.
2. A greater volume of thermoplastic adds heat mass to the die. This added mass not only helps control die movement as mentioned, but also stabilizes die temperature. A die with more stable, consistent, and proper temperatures will always produce improved line quality despite numerous starts and stops and production pauses. When this additional onboard material volume is used together with the integral die torches, die temperature becomes much more stable. Huge and rapid temperature spikes (both up and down) are eliminated so application consistency becomes the norm, regardless of operator experience level. With Trantex steel dies, you will also note that the use of the hand torch to supplement heat is eliminated. With Aluminum dies, the hand torch is a necessary evil. Excessive use of the hand torch is the number one reason aluminum dies distort, warp, and fail. It is also the reason aluminum die springs weaken, leading to leaking and poor shut offs.

## DIE CAPACITY: continued

<u>Brand/Type</u>	<u>Die Capacity</u>	<u>Onboard thermo(lbs)</u>	<u>Die Downpressure</u>	<u>Totals lbs.</u>
Trantex	104 fluid ounces	13.5 pounds	38 pounds	51.5 pounds
Brand G	80 fluid ounces	10.4 pounds	19 pounds	29.4 pounds
Aluminum	40 fluid ounces	5.2 pounds	fixed mechanical	fixed mechanical

## ☑ **DIE METALLURGY:**

**Trantex dies are hardened steel dies. It is virtually impossible to warp or distort a Trantex hardened steel die at the temperatures involved. Another great benefit of a hardened steel die is its ability to “HOLD” temperature longer and with more stability.**

If you take a hand torch and hold it on an aluminum die it will go from ambient temperatures to 250 degrees F. in as little as 10 seconds. That indicates a 175-degree F. temperature rise in as little as 10 seconds! Wow! In the same scenario, a steel die will only rise to about 140 degrees F., a 65-degree F. rise. Aluminum does heat up faster, but unfortunately for users it gives up that heat just as fast. Are you comfortable with die temperatures that go from 400 degrees to 225-300 degrees in as little as 10 seconds? Do you want more built in control that prevents die fluctuation 400 degrees to far in excess of 500 -550 degrees in as little as 10 seconds? In the case of aluminum dies, the hand torch is very, very important to supplement heat to the die. Also note, the frequency of hand torch use increases under cooler ambient temperatures (Spring, Fall, and Winter) and windy conditions. This increase in torch use also increases the opportunities to quickly elevate temperatures to the point of distorting an aluminum dies, often taking only a minute. When a Trantex steel die is used there is no need for die shrouding as typically used on aluminum models. The reason for this is that there is no need to create a warm “oven” environment as the Trantex die easily stays warm even fully exposed. From a visual standpoint, this lack of shrouding makes it easy to accurately follow road patterns, chalk lines, stencils, etc. as there is NO DISRUPTION of vision and sight marks. A heavy hardened steel die is the best value that will provide years of exceptional line quality regardless of experience level.

## ☑ **DIE ACTUATION:**

**Trantex dies are engaged and disengaged with a simple push/pull motion. This motion is very positive and ensures fast and precise starts and stops**

There is a very positive shut off action, so you can rest assured once you pull and then lift the die from the road surface, you know it is closed. The road surface is the “equilibrium” with a push/pull system, holding the die to surface contact secure during both the push and the pull motion. When using “a lift to disengage” die, there are times when the die has not fully closed when lifted, creating poor line endings and excess drip.

## ☑ **PUTTING IT ALL TOGETHER:**

**In conclusion, it is clear that Trantex dies provide a superior and user friendly thermoplastic extrusion system.** Combining the die weight with the weight of the onboard thermoplastic in the die, Trantex has an incredible down pressure weight advantage of 43%. This weight advantage actually multiplies as the material in the die is diminished. Tie in the stabilized material temperatures with a Trantex die and it becomes obvious you are working with an incredibly well thought out product, the finest in the market.



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