



# NORWEST

**MANUFACTURING INC.**

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## **\*\*NORWEST DURACHROME\*\***

### **WHAT IS DURACHROME?**

Norwest Durachrome is longwearing, high chromium casting which is cast in the shape of the tool to which it is applied. The chromium alloy is made up of 26% to 28% pure chromium carbide depending upon the application. Other elements in the casting include steel, manganese, magnesium nickel and silicon.

### **IS DURACHROME THE ONLY PRODUCT OF ITS KIND?**

When we started selling Norwest Durachrome castings fifteen (15) years ago, there were three other manufacturers of various kinds of high chromium castings in the United States. Today, because of the popularity of the castings there are at least six manufacturers. Our castings are superior to the products because we continue to test each run of castings, while it's molten, on an electronic spectagraph to make sure that the material meets the most exacting specifications as to its chemical contents and grade. Norwest Durachrome is the only chrome casting to be tested in such a way.

### **WHY DOES DURACHROME WEAR LONGER THAN HARDFACING?**

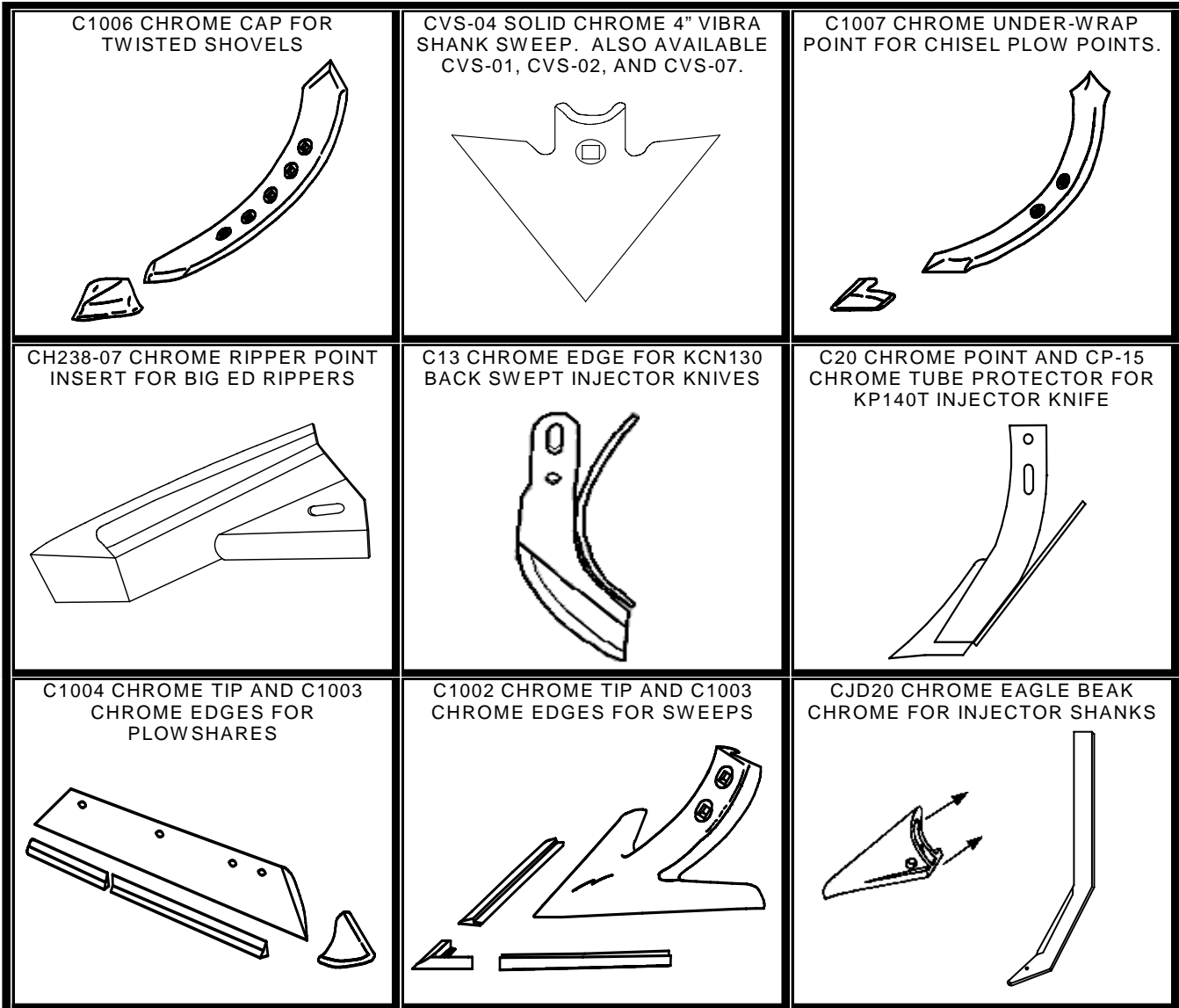
If you hardness test chromium castings on a Rockwell tester, you will find the "C" hardness to be about 48. As far as exotic alloys are concerned this is not very hard. Why then does Norwest Durachrome wear longer? The reason is that Norwest Durachrome wears to a very smooth finish. Today the real enemy that the farmer faces in ground engaging wear is friction. The farmer continues to use bigger and bigger tractors to pull his implements faster and deeper. We find that this increased speed and horsepower is causing extreme heat buildup at the point of ground contact. This excessive heat buildup causes ordinary hard facing to get soft and "melt" off the tool rather than being "worn" off as we are historically used to seeing. The secret to Norwest Durachrome is not just hardness, but also in the "way" it wears. The more abrasive the soil, the more Norwest Durachrome polishes itself and the longer it wears. In extremely sandy abrasive conditions the casting will polish itself to such a degree that you can see yourself on the surface. This polished surface lets the soil slip over the casting rather than digging into and under cutting the hard casting as it does with ordinary hard faced surfaces.

### **ARE THERE ANY DISADVANTAGES TO DURACHROME?**

Yes, there are two slight disadvantages to using chromium castings; this includes any manufacturer's chrome. (1) Cast chromium parts are more expensive than standard parts. (2) In severe conditions (extreme hardpan and rocks) cast chromium parts are more susceptible to breakage than standard products. On the whole, if you don't have any problem with hard faced products, then you won't experience any problem with Norwest Durachrome.

### **WHAT ARE THE ADVANTAGES TO USING DURACHROME?**

The advantages include: (1) Increased wear life. (2) Less drag. (3) Decreased fuel consumption. (4) Implements can be pulled faster with less down time to change them. (5) Less heat buildup in the tools. (6) Can be applied in the farm shop with standard equipment (no tricks, as some of the other suppliers have implied). In the end, the real advantage is saving money! Seems impossible, but it can be documented. We have had field reports from the farm customers using Norwest Durachrome that they are seeing from three (3) to ten (10) times longer wear life with Norwest Durachrome castings.



## WELDING PROCEDURE

**Stick Electrode:** Use 308L stainless AC or DC, 1/8" or 3/16" or 7018 DC, 1/8" or 3/16"  
 (Use 7018 only if experienced welder)

**Wire (MIG):** Mild steel wire .030, .035 with CO2 or tri-mix gas.

**Amperage:** With either system use as low amperage as possible. (90 – 110 preferable)

Firmly attach casting to tool, in some cases it may be necessary to grind tool for good fit, and tack weld chrome into place. Release clamps and pre-heat insert to about 500 degrees (when you feel heat radiating 3" above the surface). Weld full bead starting at thinnest section and continue the full length of insert. Turn the tool over immediately and weld the other side (do not let tool cool until it is finished). Use full 1/4" beads where possible.

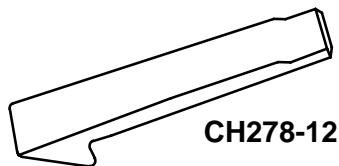
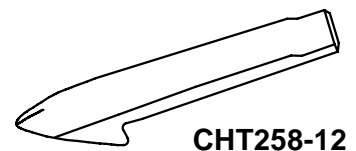
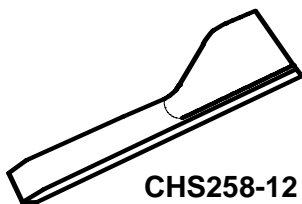
**Cooling:** Room temperature is fine, but avoid cool drafts. We highly recommend placing welded tools in dry sand or kitty to cool. Do not place tools on cool concrete floor.

**Note:** Shortly after welding, cracks may appear in the castings. Do not be alarmed! The castings will not fall off and you will enjoy acres of wear.

## RIPPER POINT INSERTS

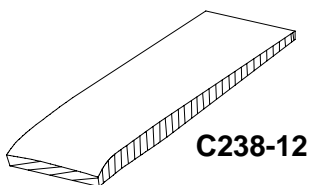
PART #	DESCRIPTION	APP.	WEIGHT
CH238-07	2 3/8" x 7" FORMED INSERT FOR 2" SLAB	BIG ED	2.25 LBS
CH278-12	2 7/8" x 12" FORMED INSERT FOR 2 1/2" SLAB	JOHN DEERE	5.75 LBS
CH338-12	3 3/8" x 12" FORMED INSERT FOR 3 1/2" SLAB	ALLIS CHALMERS	5.38 LBS
CH438-12	4 3/8" x 12" FORMED INSERT FOR 4 1/2" SLAB	ALLIS CHALMERS	9.50 LBS
CHB238-12	2 3/8" x 12" HEAVY DUTY CHROME SLAB	VARIOUS	4.50 LBS
CHS258-12	2 5/8" x 12" PENETRATOR W/SHARK FIN	JOHN DEERE	5.80 LBS
CHT258-12	2 5/8" x 12" PENETRATOR FORMED INSERT	VARIOUS	5.75 LBS

THERE ARE MANY APPLICATIONS FOR EACH SIZE INSERT, WHICH ARE NOT LISTED HERE. THOSE LISTED ARE TYPICAL APPLICATIONS ONLY.

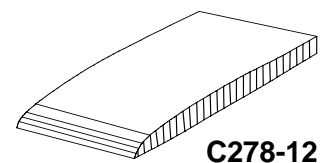
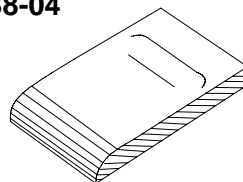


## FLAT SLAB INSERTS

PART #	DESCRIPTION	APP.	WEIGHT
C134-06	1 3/4" x 6" BEVELED INSERT	BIG OX	0.98 LBS
C238-03	2 3/8" x 3" FLAT BEVELED INSERT	VARIOUS	0.94 LBS
C238-04	2 3/8" x 4" FLAT BEVELED INSERT	VARIOUS	0.94 LBS
C238-12	2 3/8" x 12" FLAT BEVELED INSERT	VARIOUS	3.00 LBS
C278-04	2 7/8" x 4" FLAT BEVELED INSERT	VARIOUS	1.20 LBS
C278-12	2 7/8" x 12" FLAT BEVELED INSERT	AC342C	3.31 LBS
C338-12	3 3/8" x 12" FLAT BEVELED INSERT	AC403702C	3.44 LBS
C438-12	4 3/8" x 12" FLAT BEVELED INSERT	VARIOUS	5.88 LBS



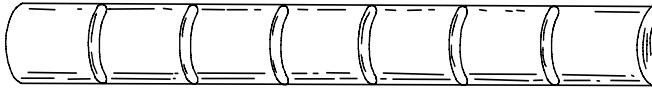
**C238-04**



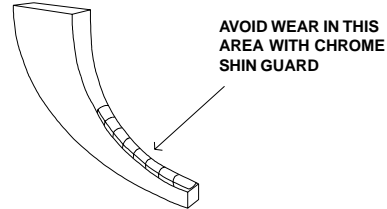
**SHIN GUARD INSERTS**

PART #	DESCRIPTION	APP.	WEIGHT
CSG138	1 3/8" x 14" SHIN GUARD INSERT	1" RIPPER SHIN	2.00 LBS
CSG150	1 1/2" x 14" SHIN GUARD INSERT	1 1/2" RIPPER SHIN	2.50 LBS
CSG178	1 7/8" x 14" SHIN GUARD INSERT	1 3/4" RIPPER SHIN	2.98 LBS
CSG238	2 3/8" x 14" SHIN GUARD INSERT	2" RIPPER SHIN	4.60 LBS

SHIN GUARD MATERIAL IS CUT EVERY 2" SO THAT IT MAY BE EASILY APPLIED TO THE CURVED SURFACE OF MOST SHANKS AND/OR SHINS. SHIN GUARD INSERTS HAVE MANY OTHER APPLICATIONS.

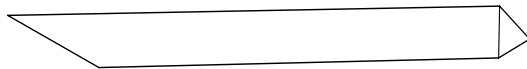


**CSG150**

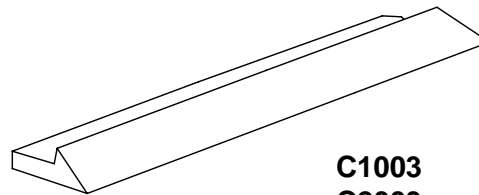


**EDGING INSERTS**

PART #	DESCRIPTION	APP.	WEIGHT
C1003	1 1/16" x 14" LIGHT DUTY CHROME EDGING	VARIOUS	.82 LBS
C1003M	14" WEAR STRIP SERRATED INTO 2" SECTIONS	VARIOUS	.46 LBS
C1030	V STYLE SHIN GUARD	SUNDANCE	3.50 LBS
C2003	1 3/4" x 14" HEAVY DUTY CHROME EDGING	DIGGER BLADES	2.54 LBS
C3003	HEAVY DUTY BUTT STYLE EDGING	DIGGER BLADES	1.56 LBS



**C1030**



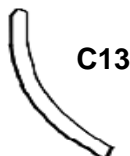
**C1003  
C2003**

**INJECTOR KNIFE INSERTS**

PART #	DESCRIPTION	APP.	WEIGHT
C13	BACK SWEEP INJECTOR KNIFE INSERT	KCN130T	1.38 LBS
C20	FRONT SWEEP INJECTOR KNIFE INSERT	KCN140	1.20 LBS
CJD20	EAGLE BEAK CHROME POINT	SC-N30	0.64 LBS
CJD21	EAGLE BEAK POINT FOR 1/2" TIP NEW STYLE	SC-N34ST	0.85 LBS



**C20**



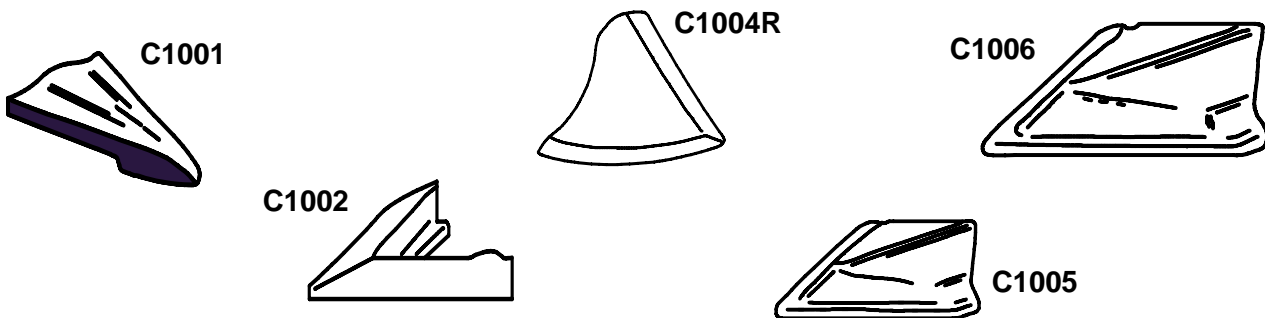
**C13**



**CJD20**

**TILLAGE POINT INSERTS**

PART #	DESCRIPTION	APP.	WEIGHT
C1001	2" CHROME CAP OVER POINT	FIELD CULT. PNT.	0.28 LBS
C1002	2" CHROME UNDER SLUNG POINT	FIELD CULT. PNT.	0.24 LBS
C1004L	CHROME PLOW SHARE POINT L.H.	PLOW SHARES	0.52 LBS
C1004R	CHROME PLOW SHARE POINT R.H.	PLOW SHARES	0.52 LBS
C1005	2" CHROME CAP OVER POINT	CHISEL PLOW PNT.	0.66 LBS
C1006	3" CHROME CAP OVER POINT	TWISTED SHOVELS	1.08 LBS
C1007	2" CHROME UNDER SLUNG POINT	CHISEL PLOW PNT.	0.66 LBS
C101	CHROME TIP FOR WYOMING SHOVELS	WS-8	0.36 LBS
C1010	5" CHROME CAP OVER POINT	LISTER POINTS	2.08 LBS



**MISCELLANEOUS CHROME**

PART #	DESCRIPTION	APP.	WEIGHT
C1805R	REPLACEMENT SLASHER POINT R.H.	VARIOUS	3.21 LBS
C1806L	REPLACEMENT SLASHER POINT L.H.	VARIOUS	3.21 LBS
CD-830	ACCRA PLANT LG SPIROL PIN-ON	VARIOUS	2.09 LBS
CD026-1	REVERSIBLE PNT 2" x 10" W/2 - 7/16" HOLES	CULT. POINT	2.59 LBS
CDNC-023	WELD ON FOOT FOR KNIVES 4"	VARIOUS	0.82 LBS
CDNC-033	CHROME SHIN GUARD 1 1/4" x 9"	VARIOUS	0.84 LBS
CDNC104	CHROME SWEEP INSERT	CULT. SWEEPS	0.82 LBS
CDNC115	4" CHROME CAP OVER POINT	CULT. POINTS	1.81 LBS
CDNC116	CHROME SMALL SWEEP TIP	CULT. SWEEPS	0.82 LBS
CKV-1L	PLOW SHARE POINT FOR KEVERLAND L.H.	PLOW SHARE	3.00 LBS
CKV-1R	PLOW SHARE POINT FOR KEVERLAND R.H.	PLOW SHARE	3.00 LBS

