PAGE 1/32 * RCVD AT 6/28/2007 3:59:48 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/2 * DNIS:2739115 * CSID:8605222796 5 * DURATION (mm-ss):07-48

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TAIG-124
TRUMPF GMBH + CO. KG
Sr. No. 79/021,358
Filed October 25, 2005
TRUWELD
Request For Reconsideration of Final Refusal

Law Office 115
Examiner Daniel Brody

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TRUMPF GMBH + CO. KG

Serial No. 79/021,358

Filed October 25, 2005

TRUWELD

Law Office 115

Examiner Daniel Brody

June 28, 2007

Commissioner for Trademarks
P.O. Box 1451
Alexandria, Virginia 22313

Sir:

REQUEST FOR RECONSIDERATION OF FINAL REFUSAL

Pursuant to the provisions of TMEP 175.03, Applicant respectfully requests reconsideration of the final refusal of registration on the basis that there is likelihood of confusion with a prior registration of TRU WELD granted to Tru-Fit Products Corporation.

The registration granted to Tru-Fit Products is for "fastening devices, including welding studs and shear connectors", all in International Class 006, for metal products.

The present application is seeking registration of TRULASER for lasers and laser machine tools. More particularly, the captioned application recites "industrial machine tools for welding workpieces using a laser beam" in International Class 007, for machine tools. In Class 9, Applicant's goods are defined as "lasers not for medical purposes in particular for the welding and treatment of workpieces." Thus, the present application is limited to lasers and laser machine tools.

PLC/30538/124/819100v1
06/28/07-HRT/

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The prior registration is for welding studs and other fasteners that are secured to another structure, usually by drawing an arc between the fastener and the workpiece so that there is melting of a portion of the fastener to effect the weld between the fastening device and the underlying structure. Typically, construction studs and shear connections are utilized on steel beams and other structural elements to facilitate the assembly of other structures thereto. The type of equipment that is used in connection with the registrant's goods can be handheld so that the welding operation can be conducted in the field.

Attached hereto as Exhibit A, is a copy of the materials on the website of the prior registrant. Welding studs are seen therein and the process of stud welding is also described. There certainly is no reference to use of a laser. Reference is made to U.S. Patent Publication 2004/0107660 for description and illustration of shear connectors and the techniques that are used.

Attached hereto as Exhibit B are illustrations of laser machine tools. Generally, some of these are large installations, including a laser resonator for generating the laser beam, a workpiece support and elements for moving the workpiece. Robots are used when there is movement of the beam in a multiplicity of axes where there is relative movement of the workpiece and the welding laser beam.

The Examiner's position would essentially appropriate the word "weld" for all possible welding applications. Certainly, nothing in the registrant's application or literature mentions or suggests that the fastener be attached by a laser beam.

Stud welding is but one of many types of welding methods. There are other types of welding, including electrical resistance welding, gas welding, plasma arc welding, thermite welding, friction welding and variations thereof.

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Stud welding machines are a specialized form of an electrical resistance welding machine utilized for a specific purpose, primarily to add connectors or studs to metal beams and the like. Thus, a large portion of the market for stud welding machines and studs and for welding studs is in the construction industry.

While applicant herein comments on the stud welding machines by the Registrant, such machines are not included in Class 6.

Some of applicant's machine tools involve a support upon which the workpieces to be welded are placed, and a numeric control system for moving the laser beam nozzle relative to the workpiece or the workpieces relative to the laser beam nozzle to melt the abutting surfaces and thereby effect the bond between the components.

The potential customer for the registrant's fasteners and stud welding machines is most likely to be either a contractor erecting steel work or a supplier of beams for such construction activities or a fabrication of them.

The market for applicant's machine tools will be a manufacturer or a job shop to weld abutting workpieces to produce some form of precision product. The customer for applicant's machine tools is not likely to be looking at a stud welder, because the application and the requirements are totally distinct. Conversely, the person looking to weld studs and shear connectors is not going to be looking for the substantially higher priced laser machines which are the subject matter of the present goods in Class 7, or the laser beam generators in Class 9. Not only are the markets different but also the persons in the markets are sophisticated and are not likely to be confused by the contemporaneous use of Tru-Weld and TRUWELD for welding studs and connectors and lasers or laser machine tools.

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There are decisions which support the principle that various factors must be considered to establish likelihood of confusion. Recently this Board stated in *Alliance Technical Services, Inc. v. Alliance Machine Systems International, Inc.*, 2006 TTAB LEXIS 370 (TTAB 2002):

> After reviewing the record, we conclude that the marketplace realities make confusion unlikely to occur. Opposer's goods and services and applicant's goods are specifically different and noncompetitive. This factor, coupled with the detailed, lengthy and personal nature of the purchasing process, the high cost of the involved goods, and the sophistication of purchasers, make it unlikely for confusion to occur. *Kellogg Co. v. Pack 'em Enterprises Inc.*, 951 F.2d 330, 21 USPQ2d 1142 (Fed. Cir. 1991) [any single factor may play a dominant role in a likelihood of confusion analysis].

As succinctly stated in *Electronic Design & Sales v. Electronic Systems*, at 954 F.2d 719:

> In view of the different purchasers and the differences in what each company sold, the sophistication of most purchasers, and the other factors discussed above, we hold that likelihood of confusion among relevant persons has not been proved.

CONCLUSION

Accordingly, it is respectfully submitted that there is no reasonable likelihood of confusion and withdrawal of the Final Refusal is respectfully requested.

JUN. 28. 2007 4:04PM PEPE&HAZARD NO. 0609 P. 5

Respectfully submitted,

TRUMPF GMBH + CO. KG

By _____
Peter L. Costas
Attorney for Applicant
(860) 241-2630

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EXHIBIT A

Home Page

TFP Corporation

460 LAKE ROAD MEDINA OHIO 44256 330-725-7741

Tru-Fit Division

Quality Fasteners Since 1928

fasteners@tfpcorp.com

Tru Weld Division

Quality Weld Studs Since 1953

weldstuds@tfpcorp.com

TRU-WELD

TRU-WELD
A Division of TFP Corp.
Quality Weld Studs
Since 1959

Home | About Us | Welder Products | Weld Studs | Contact TRU-WELD

TRU-WELD
Weld Studs:
Download Literature

- TRU-WELD Standard Weld Studs & Accessory Catalog.pdf
- TRU-WELD Stud Welders.pdf
- TRU-WELD Stud ID Chart.pdf
- TRU-WELD Part Number Codes.pdf
- TRU-WELD Shipping Weight Chart.pdf
- TRU-WELD Stud Material Capacities.pdf
- TRU-WELD Transposition Chart.pdf
- TRU-WELD Standard Ferrules.pdf
- TRU-WELD Stack Studs.pdf
- TRU-WELD C Studs.pdf
- TRU-WELD CA Studs.pdf
- TRU-WELD CD Studs.pdf
- TRU-WELD DB Studs.pdf
- TRU-WELD DSC Studs.pdf
- TRU-WELD IT Studs.pdf
- TRU-WELD NT Studs.pdf
- TRU-WELD S Studs.pdf
- TRU-WELD SC Studs.pdf

Welcome to The TRU-WELD Division of TFP Corporation.
Since 1959 TRU-WELD has been an industry leader of weld stud sales and manufacturing. *TRU-WELD* manufactures weld stud fasteners for a vast variety of applications. From the small everyday handheld tool or yard machinery to automobiles, aircrafts, bridges, ocean liners & steel structure buildings to military vehicles, weld studs are all around us in our everyday lives.

Stud Welding.
Simply stated, the process of creating a weld stud termed as "Stud Welding" is fusing of a threaded or non-threaded metal shaft or stud to a larger diameter head with a high power electrical detonation - yielding a stronger bond than if it were forged or traditionally welded.

Full Service Manufacturing
With our full in-house manufacturing facility, Heat Treating and Finishing departments, *TRU-WELD* will design and manufacture a weld stud to suit your specific needs and application.

Service, Quality and Competitive Pricing.
The three vital steps that make the business world go around. We believe that with uncompromised service, high quality manufacturing and competitive pricing, *TRU-WELD* will continue to retain our current and gain new, customers around the world. Please contact us to see if we can add you as another satisfied customer

Experience.
Since 1928 *TFP Corp.* has been manufacturing Cold Form Fasteners. And now 46 years later - since 1959 *TRU-WELD* has maintained industry leadership in weld stud sales, manufacturing and equipment.

Stud Welder Systems.
Since 1970 *TRU-WELD* has been selling our own line of Stud Welding Equipment. See our line of Stud Welding Equipment, Guns and Accessories.

ISO/QS Compliant, AWS D1.1, British Standard 5400 and 5950, Canadian Welding Bureau CSA W59, ASTM A108

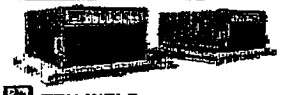
All of our products are tested in house before shipment

TRU-WELD Products

TRU-WELD
Stud Welders:

2005 Models Now Available!

TW-1200 Stud Welder
SC-2000 Stud Welder
SCD-3250 Stud Welder



TRU-WELD Stud Welders.pdf

TRU-WELD
Stud Welder Guns:

HD-35
Stud Welder Gun

TW-625
Stud Welder Gun

TRU-WELD
Stud Welding Access:

Ceramic Collars, Holders, Legs Etc....

TRU-WELD
TP Studs.pdf

TRUE-WELD
TR Studs.pdf

TRU-WELD
TT Studs.pdf

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Call Toll Free: 1.866.TRU-WELD - (1.866.878.9353) :: Fax: 330.725.0161 :: E-Mail
P.O. Box 702 Medina, Ohio 44256 / 460 Lake Rd. Medina, Ohio 44256
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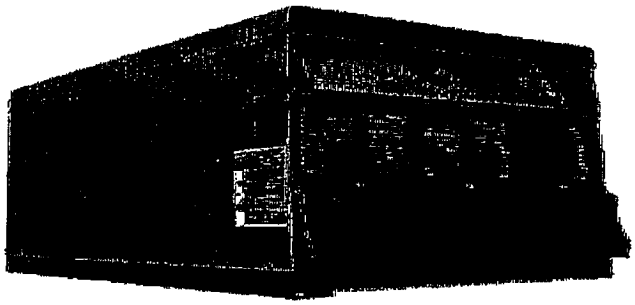
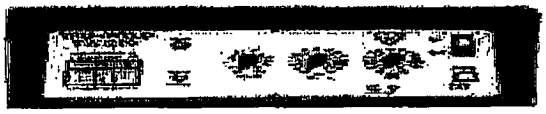
TW-1200 Solid State Stud Welding System



Direct Current/Constant Current Output
Stepless Control and Current Adjustments

Built in Chuck Saver Feature

System comes complete with Solid State Power Supply, #16 A ground cable, control/weld cable, TW-625 Stud Gun AND initial Set- up accessories-chuck, foot/grip



MACHINE SPECIFICATIONS

Dimensions: 30-1/4" H X 22-3/4" W X 35-3/4" D (475# Net)
Rated Weld Output: Stud Mode – 1200 Amperes 44 Volts @ 20% Duty Cycle

Stud Capacity: 3/16 thru 5/8 inch inclusive
Input Voltage Requirements at Maximum Rated Outputs:

Voltage	230 / 460 / 575 VAC
Fusing (Stud)	200 /100 / 80 Amps

Input power	Three Phase 230, 460, 575 Volts Alternating Current
Welding Process Type	Shielded Metal Arc (SMAW)
Max Open-circuit Voltage	70 Volts Direct Current (72 OCV)
Amperage Range	STUD\ 300 - 1200 ADC Stepless Adjustment
Weld Time	100 – 800 Milliseconds Adjustable

TRU-WELD DIVISION
TFPCORP

Tru-Weld Division
460 LAKE RD. MEDINA, OH 44256 U.S.A.
(800) 321-3588 (330) 725-7741
Fax: (330) 725-0161

TRU-WELD
A Division of TFP Corp.
QUALITY WELD STUDS
Since 1959

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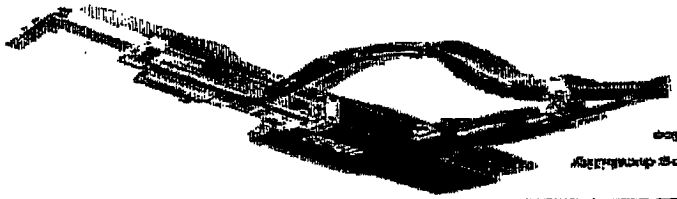
TRU-WELD DIVISION
TFPCORP
Tru-Weld Division
460 LAKE RD. MEDINA, OH 44256 U.S.A.
(800) 321-5582 (330) 725-7741
Fax: (330) 725-0161



SC-2000 Solid state Stud Welding System

- Direct Current/Constant Current Output
- Stepless Control and Current Adjustments

Stainless-steel enclosure with solid state
Power Supply, 480 Ground cable, connectors,
cable, Heavy Duty HD-35 Stud Gun
AND Solid set-up accessories (Check Provided)

MACHINE SPECIFICATIONS

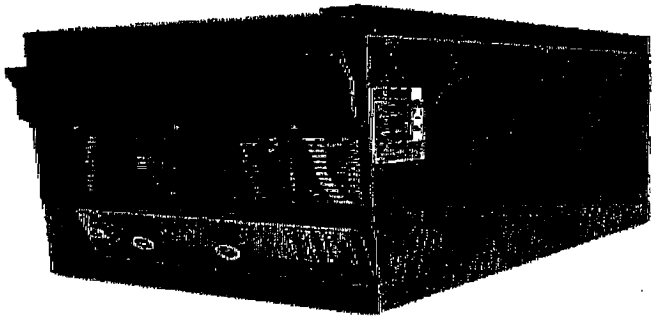
Dimensions 27-1/4"H X 22-1/4"W X 14-3/4"D (530lbs NET)
Rated Weld Output: Stud Made - 3000 Amperes 44 volts @ 20% Duty Cycle
Stud Capacity: 1/4" thru 1"
Input Voltage Requirements & Identification Based Duplex:
Voltage: 230/380/440/575 VAC 3 Phase
Fuses: 40/22/12/20/10/10 AMPS
Fuse: 30AMPS
Duty Cycle: 1" 3 per minute / 3/4" or smaller unlimited

HD-35

- Quick Cam releases for adjustment of legs
- Quick Adjustment thumb wheel for lift adjustments
- Fully adjustable Dampener with quick adjustment thumb wheel

MOST FEATURES THAT SET THE HD-35 APART FROM THE COMPETITION

- Fully adjustable Strength Spool
- Three Ball Bearings providing 1-1/2y clearance for long lasting durability
- Hardened Steel wear parts for long tool life
- Eliminated one piece upper connection for dependable service
- Rugged Two piece Telescoping construction for simple service
- Hi-Ball clutch compounding in HOLD TO LAST
- Interchangeable accessories from other cables of and guns
- Heavy Lift Capability over 100lbs for shooting Bulkhead Studs



TRU-WELD Stud Welding

1011-12-067[-XX-XXX] *

- STUD TYPE
- LOAD STYLE
- MATERIAL
- STUD DIAMETER IN 16THS OF AN INCH
- B/W LENGTH OF STUD IN 16THS

EXAMPLE: SHEAR CONNECTOR
BALL LOADED
MAT'L: 1015
DIA.: 3/4
B/W: 4 3/16

*

PART NUMBER EXTENSION FOR STUDS THAT HAVE THREADED EXTENSIONS. APPLIES TO COLLAR STUDS, SHOULDER STUDS, IT STUDS AND STACK STUDS. *

STUD TYPE
10-SHEAR CONNECTOR
11-CONCRETE ANCHOR
12-DEFORMED BAR ANCHOR
13-TP STUD
14-TT STUD
15-CD FLANGED
16-CD NON FLANGED
20-TR STUD
30-SHOULDER STUD
31-STACK STUD
32-IT STUD
33-COLLAR STUD

LOAD STYLE	MATERIAL
0 - NO LOAD	1 - 1010-1015-1017-1020
1 - BALL LOAD	2 - 302 S.S.
	3 - ALUMINUM
	4 - 304 S.S.
	6 - 316 S.S.
	8 - 1018
	9 - 430 S.S.

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TRU-WELD Stud Welding

TRU-WELD PART NUMBERS

3311-06-018[-06-010]-[C]

- B/W LENGTH OF STUD IN 16THS
- STUD DIAMETER IN 16THS OF AN INCH.
- MATERIAL
- LOAD STYLE
- STUD TYPE

PART NUMBER EXTENSION FOR STUDS THAT HAVE THREADED EXTENSIONS. APPLIES TO COLLAR STUDS, SHOULDER STUDS, INTERNALLY THREADED STUDS AND STACK STUDS. FIRST TWO DIGITS ARE THE NOMINAL THREAD DIAMETER IN 16THS. THE LAST THREE ARE THE THREAD LENGTH IN 16THS.

LAST DIGIT TO BE USED FOR THREADED STUDS ONLY. THIS DIGIT CAN BE EITHER "C" OR "F" TO DESIGNATE TYPE OF THREADS. "C"= UNC (COURSE) AND "F"= UNF (FINE).

EXAMPLE: COLLAR STUD
BALL LOADED
MAT'L: 1015
DIA.: 3/8
B/W: 1-1/8
THREAD DIA.: 3/8
THD. EXT.: 5/8
THD. PITCH: 16

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TRU-WELD Stud Welding

MATERIAL CAPABILITIES AND CAPACITIES FOR CD STUD WELDING

WELDING CAPABILITIES

BASE MATERIAL	STUD MATERIAL			
	MILD STEEL: 1010 THROUGH 1030	STAINLESS STEEL 302,304,303	ALUMINUM 1100,5086,6061	BRASS 70-30,65-35
MILD STEEL: 1008 THROUGH 1030	EXCELLENT	EXCELLENT	———	EXCELLENT
MEDIUM CARBON STEEL: 1030 THROUGH 1050	GOOD *	GOOD *	———	GOOD *
GALVANIZED SHEET DUCT: OR DECKING	EXCELLENT	EXCELLENT	———	———
STRUCTURAL STEEL	EXCELLENT	EXCELLENT	———	EXCELLENT
STAINLESS STEEL: 405,410,430, AND 300 SERIES, EXCEPT 303	EXCELLENT	EXCELLENT	———	EXCELLENT
LEAD-FREE BRASS&ELECTROLYTIC COPPER,LEAD-FREE ROLLED COPPER	EXCELLENT	EXCELLENT	———	EXCELLENT
+MOST ALUMINUM ALLOYS OF THE 1000,3000,5000,AND 6000 SERIES	———	———	EXCELLENT	———
DIE-CAST ZINC ALLOYS	GOOD *	GOOD *	EXCELLENT	GOOD *

*GOOD:GENERALLY FULL STRENGTH RESULTS, DEPENDING UPON THE COMBINATION OF STUD SIZE AND BASE METAL.

+OTHER MATERIALS, SUCH AS 7000 SERIES ALUMINUM, TITANIUM ALLOYS, INCONEL, ETC. CAN BE WELDED UNDER SPECIFIED CONDITIONS.

STANDARD LOAD CAPACITIES

STUD MATERIAL	STUD SIZE	MAXIMUM FASTENING TORQUE (INCH LBS) *	ULTIMATE TENSILE LOAD (LBS)	MAXIMUM SHEAR LOAD (LBS)
LOW-CARBON COPPER-FLASHED STEEL	0-32	6	500	375
	8-32	12	765	575
	10-24	14	950	720
	1/4-20	43	1,750	1,300
	5/16-18	72	2,900	2,200
	3/8-16	106	4,300	3,250
STAINLESS STEEL: 304	0-32	10	790	590
	8-32	20	1,250	940
	10-24	23	1,530	1,130
	1/4-20	73	2,860	2,100
	5/16-18	126	3,750	2,850
	3/8-16	185	4,850	7,150
ALUMINUM ALLOY: 1100	0-32	2.5	200	125
	8-32	5	395	185
	10-24	6.5	380	235
	1/4-20	21.5	670	413
	5/16-18	36	1,125	665
	3/8-16	53	1,650	1,000
ALUMINUM ALLOY: 5086	0-32	3.5	375	235
	8-32	7.5	585	365
	10-24	10	735	460
	1/4-20	32.5	1,360	850
	5/16-18	54.5	2,300	1,400
	3/8-16	81	3,400	2,100
BRASS: 70-30,65-35	0-32	8	600	390
	8-32	16	860	560
	10-24	18.5	1,040	650
	1/4-20	61	1,850	1,275
	5/16-18	102	3,280	2,140
	3/8-16	150	4,900	3,160

*THESE VALUES SHOULD DEVELOP FASTENER TENSION TO SLIGHTLY LESS THAN YIELD POINT.

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TRU-WELD Stud Welding

STANDARD FERRULES

SUPPLIED WITH TRU-WELD STUDS

DDFG

F 1*

F HD

C

P

R

A 2*

THE TRU-WELD FERRULE (ARC SHIELD) IS SPECIALLY DESIGNED OF BALL CLAY AND TALC, AN EXCELLENT MATERIAL TO WITHSTAND HEAT SHOCK AS WELL AS RESONABLY HIGH TEMPERATURE WITHOUT MELTING OR BREAKING. THE TRU-WELD FERRULE COMPLEMENTS THE PERFECT-POSITION ARC INITIATOR AND THE UNIFORM FLUX LOAD TO EFFECT A TOP-QUALITY WELD. SPECIAL FERRULES ARE AVAILABLE ON REQUEST.

1* THE "F" FERRULE IS ALSO AVAILABLE IN LOW PROFILE VERSIONS.

2* THE A FERRULE PICTURED IS THE COMBINATION INSIDE-OUTSIDE ANGLE FERRULE. THE INSIDE ONLY AND OUTSIDE ONLY FERRULES ARE ALSO STANDARD STOCK ITEMS.

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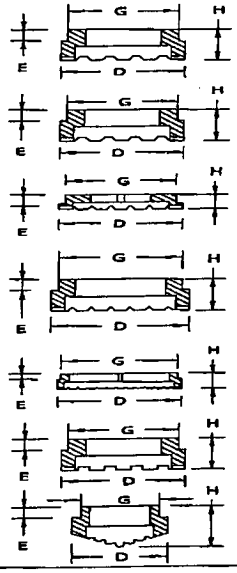
TRU-WELD Stud Welding

STANDARD FERRULES

SUPPLIED WITH TRU-WELD STUDS

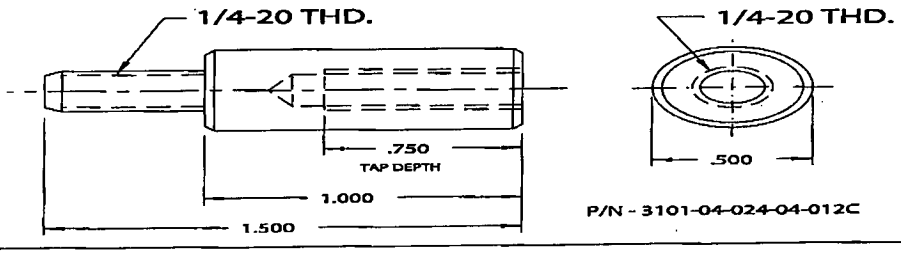
TYPE	NOMINAL SIZE	D	H	G	E
F	3/16	.390	.390 OR .250	.281	.156
	1/4	.455	.390 OR .250	.380	.156
	5/16	.578	.390	.445	.156
	7/16	.703	.422	.585	.188
	3/4	1.218	.656	1.030	.188
	7/8	1.406	.732	1.210	.188
	1"	1.610	.820	1.406	.189
F HD	1/4	.645	.390	.515	.150
	3/8	.800	.400	.645	.150
	1/2	.875	.455	.785	.185
	5/8	1.230	.520	1.035	.185
C	1/4	.875	.250	.795	.125
	5/16	.875	.250	.785	.125
	3/8	.875	.250	.785	.125
	1/2	1.203	.281	1.046	.156
P	1/4	.455	.250	.380	.125
	5/16	.535	.250	.445	.125
	3/8	.595	.265	.505	.125
	7/16	.675	.329	.585	.156
	1/2	.740	.362	.650	.156
	5/8	.905	.453	.785	.156
	3/4	1.150	.526	1.030	.187
	7/8	1.320	.593	1.203	.187
	1"	1.526	.661	1.406	.187
R	3/8	.595	.250	.505	.125
	7/16	.675	.250	.585	.125
	1/2	.740	.281	.650	.156
	5/8	.875	.281	.785	.156
	3/4	1.030	.375	.921	.187
DDFG	1/2	.800	.450	.645	.185
	5/8	1.015	.525	.775	.185
	3/4	1.335	.600	1.210	.185
	7/8	1.528	.666	1.406	.200
A	1/4	.455	.500	.380	.156
	3/8	.640	.480	.505	.156
	1/2	.795	.688	.650	.188
	5/8	1.030	.875	.785	.188
	3/4	1.218	.875	1.030	.188



TRU-WELD *Stud Welding*

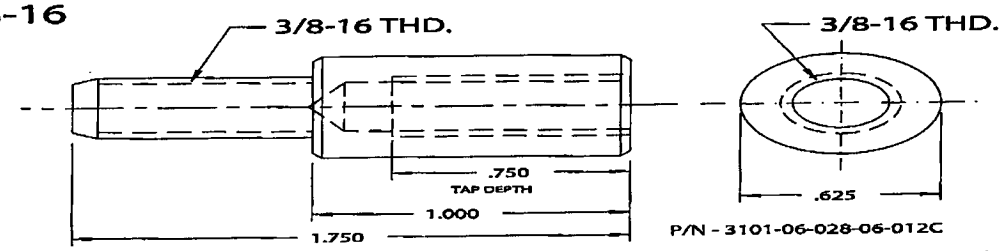
STACK STUDS

1/4-20



P/N - 3101-04-024-04-012C

3/8-16



P/N - 3101-06-028-06-012C

MILD STEEL / STAINLESS STEEL / ALUMINUM

MATERIAL CODE - 1 MATERIAL CODE - 1, 4 OR 6 MATERIAL CODE - 3

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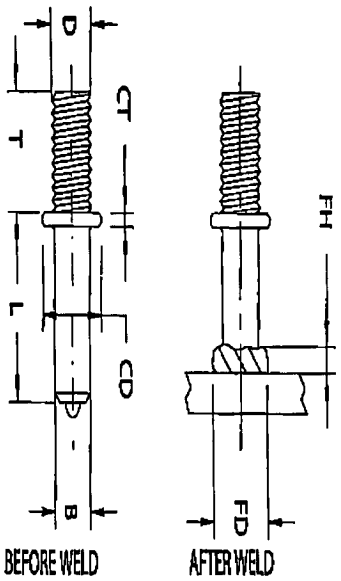


TRU-WELD Stud Welding

TYPE C STUD

THREADED TO COLLAR - PITCH DIA. WELD BASE

TYPE C FERRULE SUPPLIED (NOTE #3)

D THREAD DIAMETER	T MAX THREAD LENGTH	B	L *1 AVIL. LENGTH BEFORE WELD	STUD PART NUMBER *2	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY STANDARD FOOT PART NUMBER	LIGHT DUTY STANDARD GRIP PART NUMBER	LIGHT DUTY SPLIT FOOT PART NUMBER	LIGHT DUTY SPLIT GRIP PART NUMBER	STANDARD COMBINATION *4 FOOT AND GRIP
1/4-20	1/4	.215	1/2	3311-04-008-04-004	23/64	7/64	5018	11122	8016	11125	8053	8126
5/16-18	3/8	.275	1/2	3311-05-008-05-006	7/16	7/64	5019	11122	8016	11125	8053	8126
3/8-16	3/8	.330	1/2	3311-06-008-06-006	1/2	1/8	8026	11122	8016	11125	8053	8126
1/2-13	3/8	.448	9/16	3311-08-009-08-006	11/16	5/32	8027	11122	8017	11125	8054	8127

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

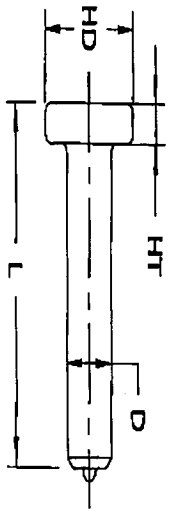
2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.A

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

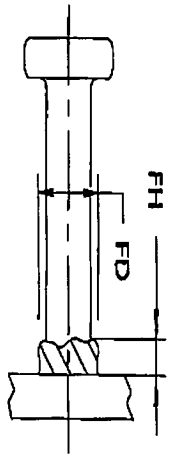
4.) REQUIRES USE OF P/N-111801 DUAL LEG ADAPTOR.

CONFORMS TO MIL-S-24149(SHIPS)

PAGE 19/32 * RCVD AT 6/28/2007 3:59:48 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-6/2 * DNIS:2739115 * CSID:8605227965 * DURATION (mm-ss):07-48



BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE CA STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

D DIAMETER	L *1 AVR. LENGTH BEFORE WELD	STUD PART NUMBER *2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
1/4	2-11/16	1111-04-043	1/2	3/16	23/64	7/64	8027	11124	8024	8121
1/4	3-1/8	1111-04-050	1/2	3/16	23/64	7/64	8027	11124	8024	8121
1/4	4-1/8	1111-04-066	1/2	3/16	23/64	7/64	8027	11124	8024	8121

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

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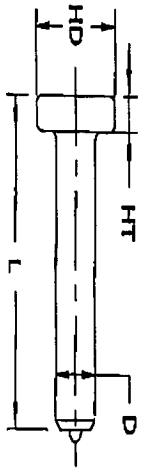
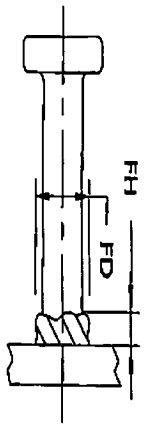


BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE CA STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

D DIAMETER	L *1 MIN. LENGTH BEFORE WELD	STUD PART NUMBER *2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
3/8	1-1/4	1111-06-020	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	1-3/8	1111-06-022	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	1-5/8	1111-06-026	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	2-1/8	1111-06-034	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	2-5/8	1111-06-042	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	3-1/8	1111-06-050	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	4-1/8	1111-06-066	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	5-1/8	1111-06-082	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	6-1/8	1111-06-098	3/4	9/32	1/2	1/8	8029	11124	8052	8125
3/8	8-1/8	1111-06-130	3/4	9/32	1/2	1/8	8029	11124	8052	8125

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

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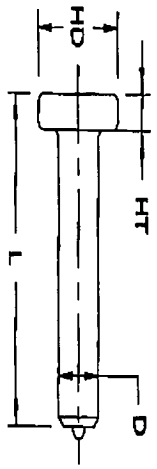
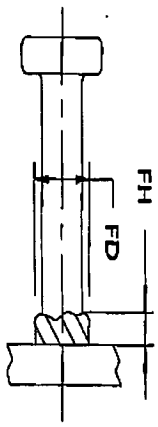


BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE CA STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

D DIAMETER	L *1 IN IN LENGTH BEFORE WELD	STUD PART NUMBER *2	HD HEAD DIAMETER	HT HEAD HEIGHT NOM.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
1/2	1-1/8	1111-08-018	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-1/2	1111-08-024	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	1-5/8	1111-08-026	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-1/8	1111-08-034	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	2-5/8	1111-08-042	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	3-1/8	1111-08-050	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	4-1/8	1111-08-066	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	5-5/16	1111-08-085	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	6-1/8	1111-08-098	1	5/16	11/16	5/32	8032	11125	8053	8126
1/2	8-1/8	1111-08-130	1	5/16	11/16	5/32	8032	11125	8053	8126

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

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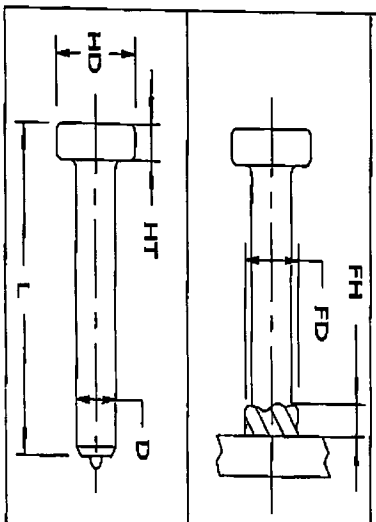

BEFORE WELD

AFTER WELD

TRU-WELD Stud Welding

TYPE CA STUD

HEADED CONCRETE ANCHOR - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

D DIAMETER	L *1 MIN LENGTH BEFORE WELD	STUD PART NUMBER *2	HD HEAD DIAMETER	HT HEAD HEIGHT MIN.	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
5/8	1-7/16	1111-10-023	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	1-11/16	1111-10-027	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	1-15/16	1111-10-031	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	2-3/16	1111-10-035	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	2-11/16	1111-10-043	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	3-3/16	1111-10-051	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	4-3/16	1111-10-067	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	4-11/16	1111-10-075	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	5-3/16	1111-10-083	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	6-9/16	1111-10-102	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	8-3/16	1111-10-131	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	9-3/16	1111-10-147	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127
5/8	10-3/16	1111-10-163	1-1/4	5/16	7/8	3/16	8038	11125	8054	8127

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

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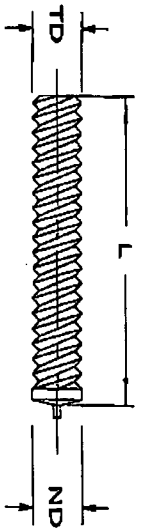
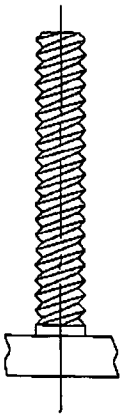


BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE CD STUD

FULLY THREADED - NON-FLANGED

NO FERRULE NEEDED

TD DIAMETER AND THREAD	L *1 BLANK LENGTH BEFORE WELD	STUD PART NUMBER *2	ND NOMINAL DIAMETER	CHUCK PART NUMBER
#4-40	.250	1641-18-004C	.112	5012
#6-32	.250	1641-22-004C	.138	5014
#8-32	.250	1641-26-004C	.164	5015
#10-32	.250	1641-03-004F	.190	5016
#10-24	.250	1641-03-004C	.190	5016
1/4-20	.375	1641-04-006C	.250	5017
5/16-18	.500	1641-05-008C	.312	5018
3/8-16	.500	1641-06-008C	.375	5019

C.D. STUDS ARE AVAILABLE IN MILD STEEL, STAINLESS STEEL, ALUMINUM, AND BRASS.

MILD STEEL STUDS ARE COPPER PLATED AND ARE ALSO AVAILABLE NICKEL PLATED UPON REQUEST.

ALL STUDS ARE ANNEALED WHERE REQUIRED.

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

CONFORMS TO MIL-S-24149(SHIPS)

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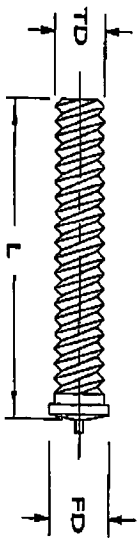
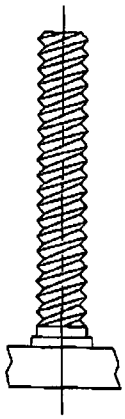


BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE CD STUD

FULLY THREADED - FLANGED

NO FERRULE NEEDED

TD DIAMETER AND THREAD	L #1 MILLLENGTH BEFORE WELD	STUD PART NUMBER #2	FD FLANGE DIAMETER	CHUCK PART NUMBER
#4-40	.250	1541-18-004C	.187	5012
#6-32	.250	1541-22-004C	.220	5014
#8-32	.250	1541-26-004C	.250	5015
#10-32	.250	1541-03-004F	.250	5016
#10-24	.250	1541-03-004C	.250	5016
1/4-20	.375	1541-04-006C	.312	5017
5/16-18	.500	1541-05-008C	.375	5018

C.D. STUDS ARE AVAILABLE IN MILD STEEL, STAINLESS STEEL, ALUMINUM, AND BRASS.

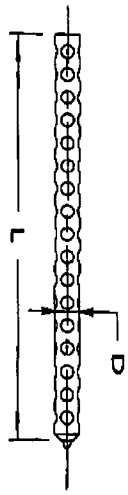
MILD STEEL STUDS ARE COPPER PLATED AND ARE ALSO AVAILABLE NICKEL PLATED UPON REQUEST.

ALL STUDS ARE ANNEALED WHERE REQUIRED.

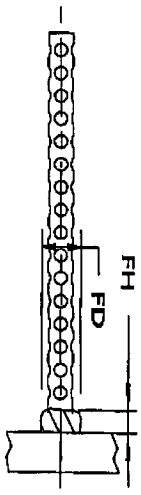
1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

CONFORMS TO MIL-S-24149(SHIPS)



BEFORE WELD



AFTER WELD

TRU-WELD Stud Welding

TYPE DB STUD

(DEFORMED BAR ANCHOR)

NO THREAD - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

D DIAMETER	L *1 MIN. LENGTH BEFORE WELD	STUD PART NUMBER *2	FD WELD FILLET DIAMETER	FH WELD FERRULE HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
3/8	10-1/8	1211-06-162	1/2	1/8	5019	11124	8052	8125
1/2	12-1/8	1211-08-194	11/16	5/32	8027	11125	8053	8125
5/8	12-3/16	1211-10-195	7/8	3/16	8028	11125	8054	8127
3/4	12-3/16	1211-12-195	1-1/16	1/4	8029	11125	8054	8127

1.) TRU-WELD STUDS ARE AVAILAIBLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM UP TO 48".

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

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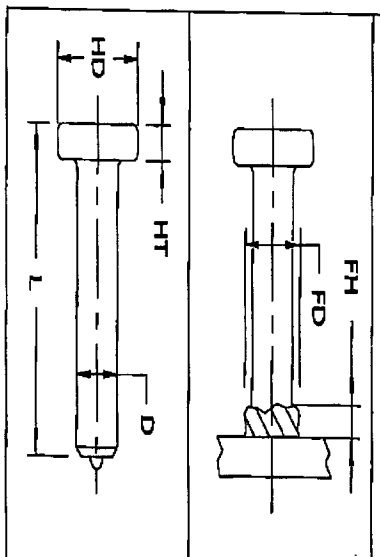

BEFORE WELD

AFTER WELD

TRU-WELD Stud Welding

TYPE DSC STUD

SHEAR CONNECTOR - FULL WELD BASE

TYPE TD FERRULE SUPPLIED

(FOR THRU-DECK WELDING) (NOTE #3)

D DIAMETER	L *1 MIN LENGTH BEFORE WELD	STUD PART NUMBER *2	HD HEAD DIAMETER	HT HEAD HEIGHT MAX.	FD HOLD-FILLET DIAMETER	FH HOLD-FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY SPLIT: FOOT PART NUMBER	LIGHT DUTY SPLIT: GRIP PART NUMBER	STANDARD COMBINATION *4: FOOT AND GRIP
3/4	3-3/8	2311-12-054	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	3-7/8	2311-12-062	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	4-3/8	2311-12-070	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	4-7/8	2311-12-078	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	5-3/8	2311-12-086	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116
3/4	5-7/8	2311-12-094	1-1/4	3/8	1-1/4	1/4	8038	11126	8055	11116

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.3

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

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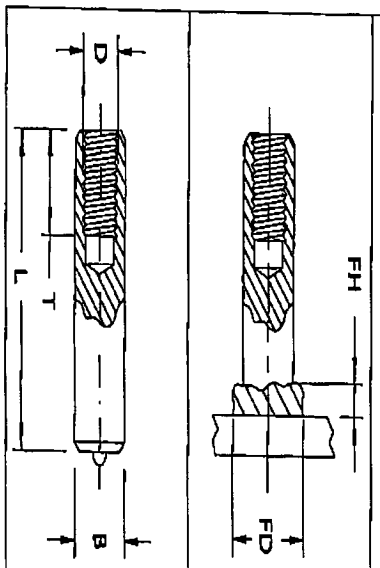

BEFORE WELD

AFTER WELD

TRU-WELD Stud Welding

TYPE IT STUD

TAPPED - FULL WELD BASE

TYPE F FERRULE SUPPLIED (NOTE #3)

B	D DIAMETER AND THREAD	L #1 NAIL LENGTH BEFORE WELD	STUD PART NUMBER #2	T	FD WELD FILLET DIAMETER	FH WELD FILLET HEIGHT	CHUCK PART NUMBER	LIGHT DUTY STANDARD FOOT PART NUMBER	LIGHT DUTY STANDARD GRIP PART NUMBER	LIGHT DUTY SPLIT FOOT PART NUMBER	LIGHT DUTY SPLIT GRIP PART NUMBER	STANDARD COMBINATION #4 FOOT AND GRIP
1/4	#8-32	5/8	3211-04-010-25-004	1/4	23/64	7/64	5017	11121	8011	11124	8024	8121
5/16	#10-24	5/8	3211-05-010-03-005	5/16	7/16	7/64	5018	11121	8012	11124	8025	8122
3/8	1/4-20	13/16	3211-06-013-04-006	3/8	1/2	1/8	5019	11121	8015	11124	8052	8125
7/16	5/16-18	1	3211-08-016-05-008	1/2	19/32	9/64	8026	11121	8014	11124	8051	8124
1/2	3/8-16	1-1/8	3211-08-018-06-009	9/16	11/16	5/32	8027	11124	8016	11125	8053	8126
5/8	7/16-14	1-3/16	3211-10-019-07-010	5/8	7/8	3/16	8028	11124	8017	11125	8054	8127
3/4	1/2-13	1-7/16	3211-12-023-08-012	3/4	1-1/16	1/4	8029	11124	8017	11125	8054	8127
7/8	5/8-11	1-5/8	3211-14-026-10-018	15/16	1-1/8	5/16	8030	11123	8018	11126	8055	8128
1	3/4-10	2-1/4	3211-16-036-12-022	1-1/8	1-3/8	3/8	8032	11123	8019	11126	8056	8129

1.) TRU-WELD STUDS ARE AVAILABLE IN ANY REQUIRED LENGTH ABOVE THE STANDARD MINIMUM.

2.) SEE PART NUMBER CONSTRUCTION DATA ON PAGE NO.4

3.) LISTED FERRULE IS FOR STANDARD FLAT DOWN HAND POSITION. SEE PAGE NO.5 FOR LISTING OF FERRULES USED IN OTHER APPLICATIONS.

4.) REQUIRES USE OF P/N-11101 DUAL LEG ADAPTOR.

CONFORMS TO MIL-S-24149(SH)(PS)

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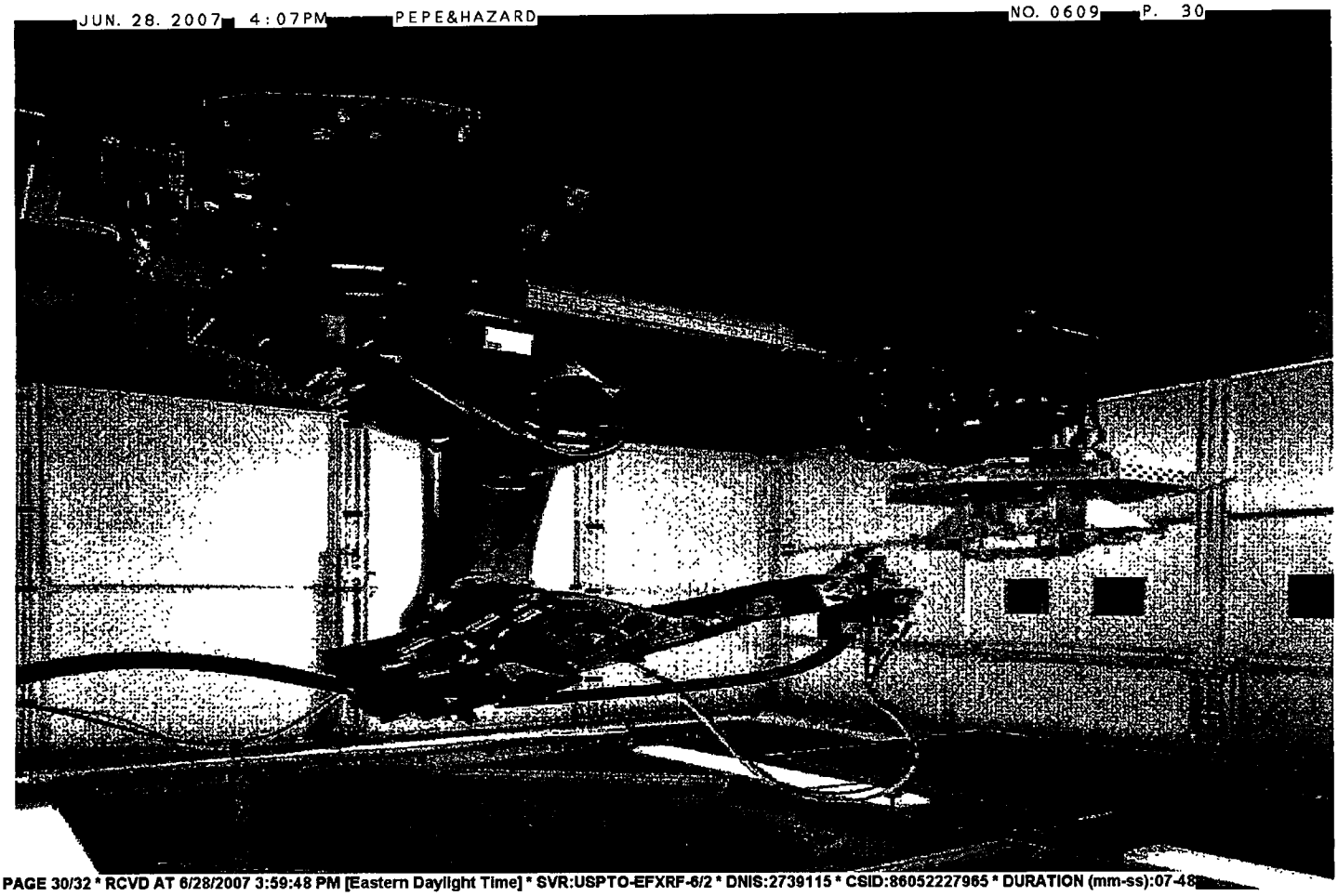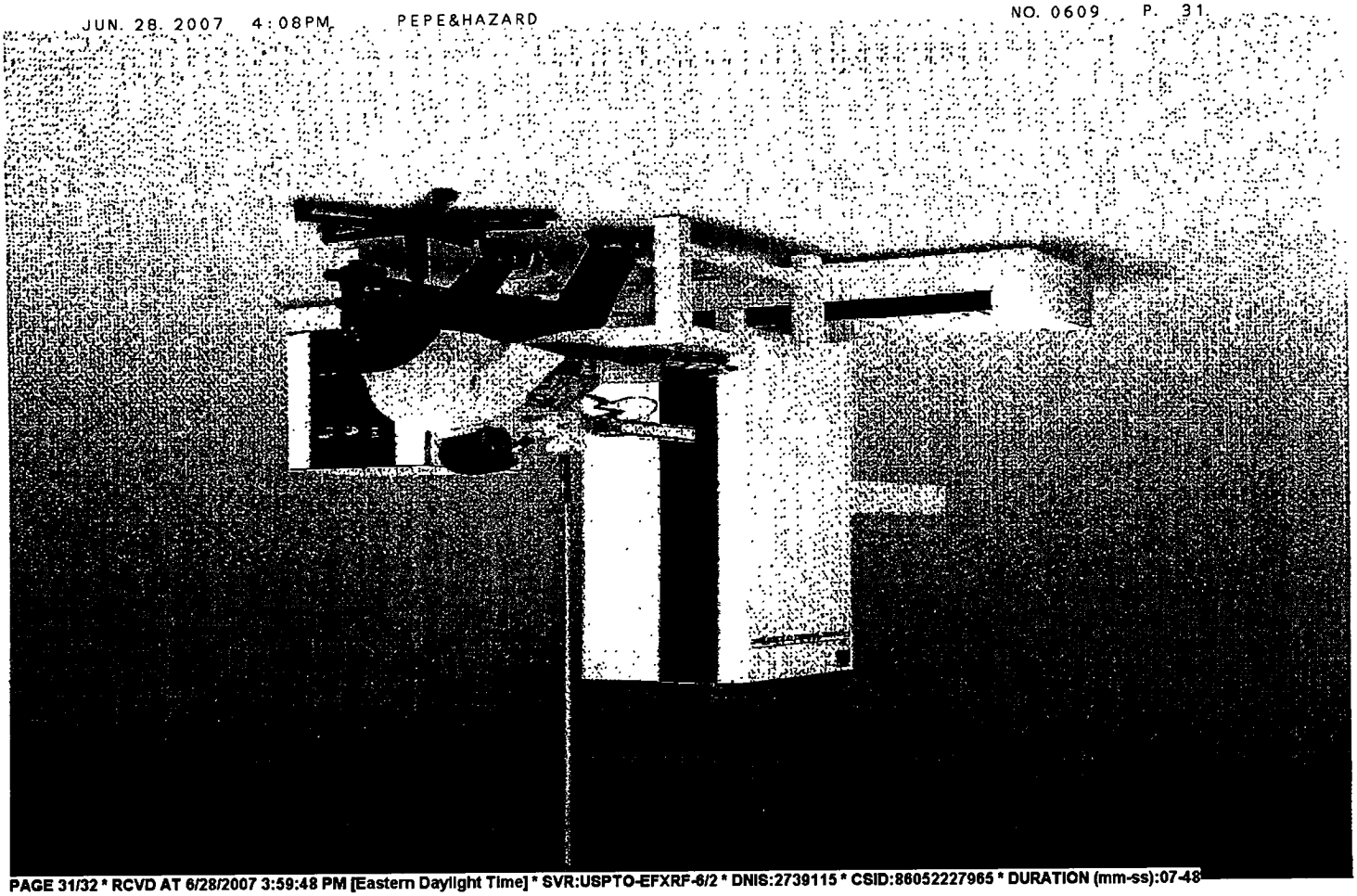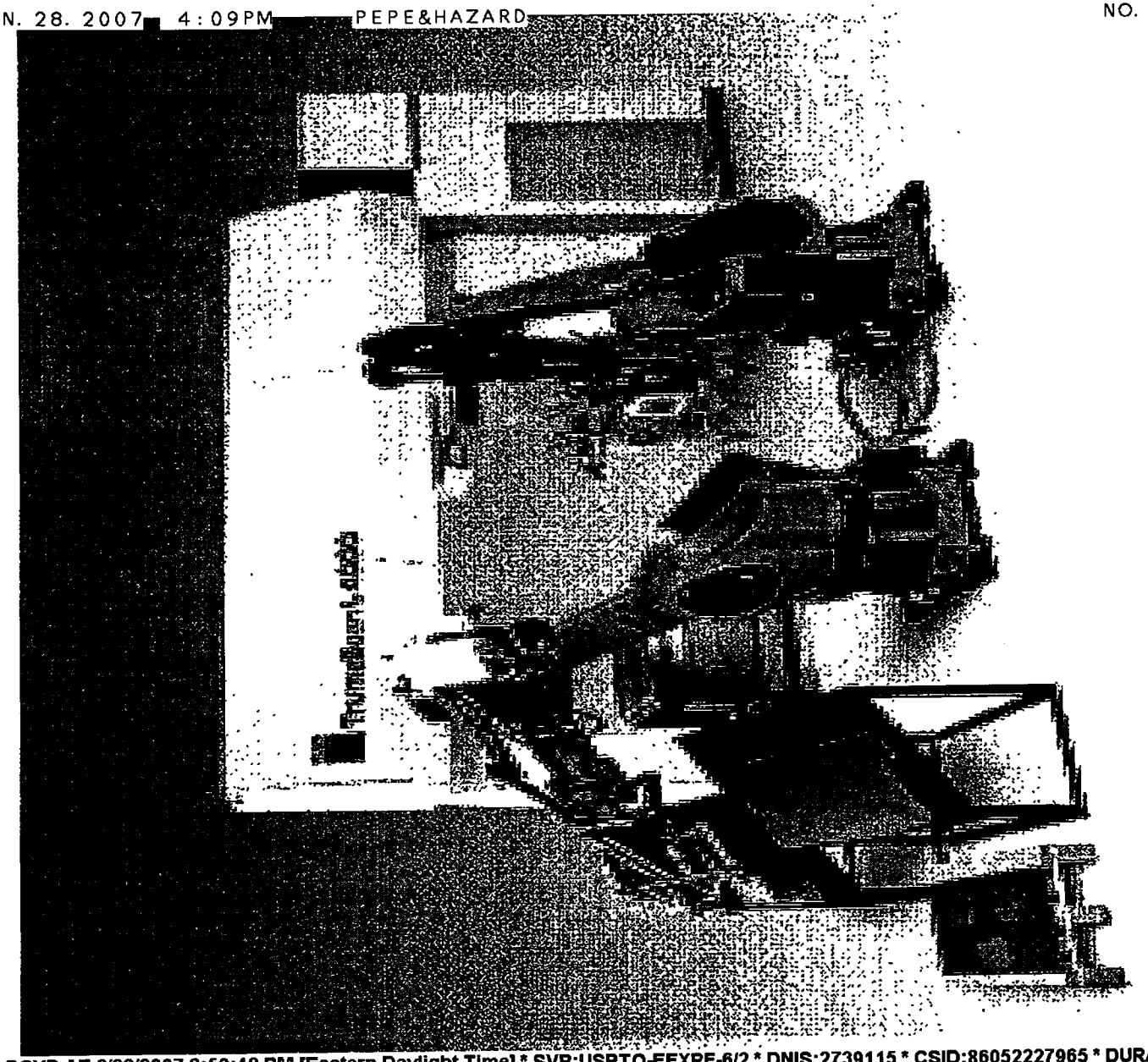
EXHIBIT B