TAK Quick Release Series 04-05
PRECISION WIRE STRAIGHTENER
INSTRUCTIONS FOR USE

TAK Enterprises Incorporated
70 Enterprise Drive • Bristol, CT 06010-7400
(860) 583-0517 • (860) 585-0479
e-mail: tak@takenterprises.com • www.takenterprises.com

Before working with your TAK product, please observe all safety precautions with the use of wire and machinery. DO NOT HANDLE WIRE AROUND EXPOSED ELECTRICAL WIRES OR CIRCUITS. Be careful when working with fellow employees. MAKE SURE MACHINERY IS OFF.

TOOLS NEEDED:
Allen Wrenches:
Model: PWSQR04: 3/16, 1/4, 5/16, 3/8
Model: PWSQR05: 3/16, 5/16, 3/8
0-70 in/lb Torque Wrench

PREPARATION:

The wire straightener may be mounted for a feed from the left or right, with the first or initial bank, called bank 1, either horizontal or vertical as required. For example, if the axle for the wire coil is vertical, the first bank of the straightener should be mounted with the axles of the straightener bearings vertical also. (See mount/feed options print)

Mount the wire straightener between the machine and wire coil. The unit is shipped so the quick release handles are easily accessible in the front and top positions. The unit should be fastened securely to the machine and supported on the opposite end with the floor mount. Another option is to floor mount both ends independent of your machine.

When aligning for mounting, make sure the wire from the straightener is level and in line with the machine feed wire line. This is very important to avoid variation in feeding or straightness.

Do not attach or allow anything to touch the wire in the path between the wire straightener and the feed mechanism other than a support in longer feeds.

SPECIAL QUICK RELEASE FEATURE (Refer to Detail A)

The unit is equipped with a special quick release mechanism that allow bearings #2 thru #6 to be released for loading wire in the unit while maintaining the integrity of the operating bearing adjustments. **"QS" and all other bearing adjustments should be made when the handle is in the closed or operating position only**. Adjustments **must not** be made when in the released position, as this could cause the handles to be inoperable. Should this be inadvertently encountered, simply back off the adjusting screws, close the handles, and re-adjust properly. When the bearings are properly adjusted, check to be sure the opposing five sets of adjusting screws are at between 15 & 18 in/lbs of torque. **DO NOT OVER TIGHTEN !**

"QUICK-SET" SETUP PROCEDURE (Refer to Detail A)

1) Hand straighten a piece of the wire to be used (approximately 30" long) for setup.
2) Set bearings (#3& #5) on the small cap side to (.266"for a #4 and .315" for a #5) with a Gauge block or pin. Make sure to have the quick release handles closed and secure. Place the block between the small cap and the bearing roll. Use the adjusting screw to gently squeeze the block in this position. Adjust the opposing screw against the roll plate with 15-18 in/lbs of torque until the gauging block slips out with a small amount of resistance. **DO NOT OVER TIGHTEN !**
3) Refer to the setting chart and find your wire diameter in the leftmost column.
4) Read across to the "QS Large" column. This is the set block size for all the bearing rolls on the large cap side.
5) Perform the same procedure as step in step #2 to get the "QS Large" spacing between the cap and rolls #2, #4 & #6.
6) Loosen the cap screws holding the two adjustable rolls at each end, rotate the eccentric center collar so you can place the wire thru the unit. For adjustment use a 7/8" open end wrench and a 5/16" hex wrench. Turn the collar into the direction of the wire travel when adjusting. This way the guide rolls won't jam should the hex cap screw inadvertently loosen. Do this on each bank. Adjust these rolls so they are just touching the set up piece of wire and re-tighten the holding screws. When the set up wire is pulled back and forth, all rolls should now turn together.
7) This is considered to be the "QS" or "Zero wire deflection" setting.
8) Follow the above procedure for the second bank.

STRAIGHTENING ADJUSTMENTS (Refer to Det "A")

This section of the procedure varies depending on many factors including but not limited to: size, consistency, tensile strength, hardness, surface condition, coil diameter, cast, cleanliness and condition of the material to be straightened. The following procedure is a rule of thumb method proven to give the best and most consistent results.

1) Start without the wire in the straightener, on the first bank. Adjust bearings #2, #3, #4, #5 & #6 inward 4% to 8% of the diameter of the material being used. This varies depending on your requirements and the material condition. With first time users, always start with very mild adjustments and advance only if satisfactory results are not obtained. The use of lighter adjustments compared to conventional units (not TAK design) is strongly suggested.
2) Look in the setting chart for the percent of offset you are going to use, read down the columns to the line that has the wire size you are using. There are (2) columns, one for the small cap side (bearings #3 & #5) and another for the large cap side (bearings #2, #4 & #6).
3) These are the size blocks to be used in setting the offset to cause the "break " in the wire so the remaining bearings can "reform" it to a straight condition.

4) Pull back the quick release handle, allowing the bearings to move out of the way. At this time insert the wire to be straightened through the first bank. When the wire is through the straightener, re-engage the quick release handle until it locks in the detent.
5) You are now ready to start adjusting for straightness using only bearing #5. Note that the adjusting screws are marked with a white dot of paint for visual reference for rotation. **Re-Adjust the torque on the #5 roll plate to 15-18 in/lbs of torque with no wire in the bank.**
6) If the proper amount of "break percentage" was used, adjusting bearing #5 into and away from the centerline of the wire should cause the wire to curve in both directions. At this point you will have control of the wire path. If not, go back to the setting table and look for the next higher range and repeat the above steps.
7) Adjust until the wire is fairly straight in this plane.
8) Proceed to bank number two following the same procedure as the first bank until straightness in both planes meets your requirements. Remember, use only bearing #5 for fine adjustments to straightness.
9) Once the initial set up has been completed only very small adjustments will be required to maintain straightness as long as the attributes of the wire remain constant. Proper and efficient use of the TAK PRECISION WIRE STRAIGHTENER is learned through experience. These operating instructions are meant as a guide. Many experienced users have developed their own procedures with equal success. Keep in mind that this is a precision unit and must be treated with care. Use proper tools when setting up the unit or attaching to other equipment. **Make sure not to exceed 15-18 in/lbs of torque on any adjusting screws with the wire removed from the bank.**

REMEMBER.....

KEEP IT STRAIGHT WITH A TAK PRECISION WIRE STRAIGHTENER.

TAK Enterprises, Inc.
70 Enterprise Drive Bristol, CT 06010-7400
1-(860)-583-0517 Fax 1-(860)-585-0479

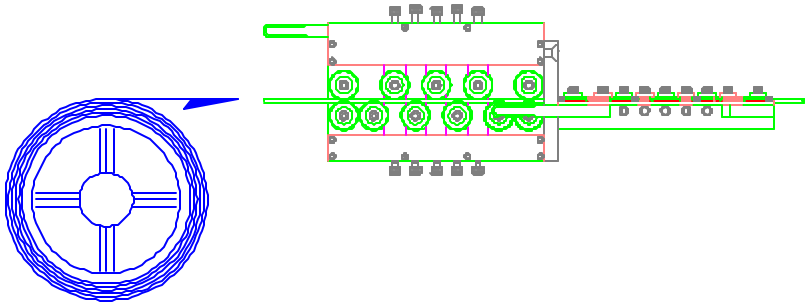
www.takenterprises.com E-mail: tak@takenterprises.com

Please be aware *that the use of* ***non-TAK replacement parts*** *for your TAK Precision Wire Straightener can result in:*

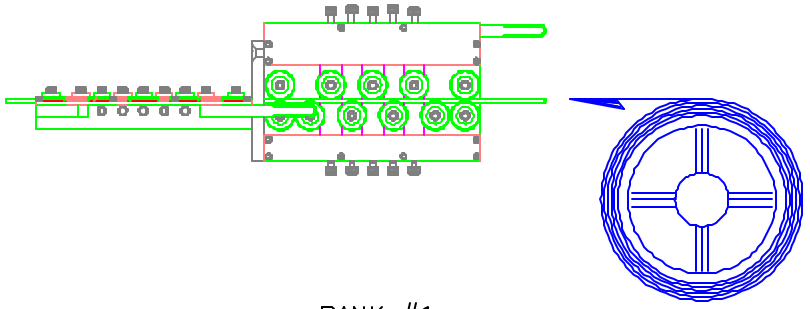
- *Split bearings*
- *Marks on soft materials*
- *Damage to plating on material*
- *Non-repeatable set-up (as designed)*
- *Pre-set characteristics ineffective*
- *Record congruity characteristics ineffective*

The TAK PWS's are designed with all features and dimensional tolerances being coordinated for its full functional capabilities. The TAK Straightener will not perform as advertised unless each detail is within the TAK design perimeters with absolute consistency required for dependable and consistent results.

TAK QUICK RELEASE MOUNTING/FEED OPTIONS

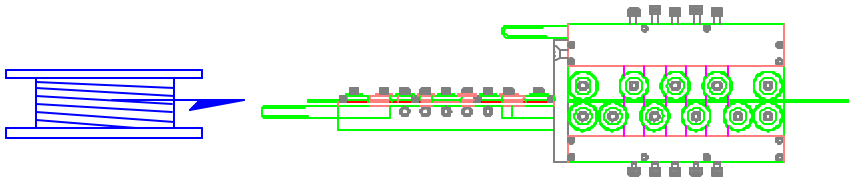


BANK #1
HORIZONTAL AXIS OF COIL



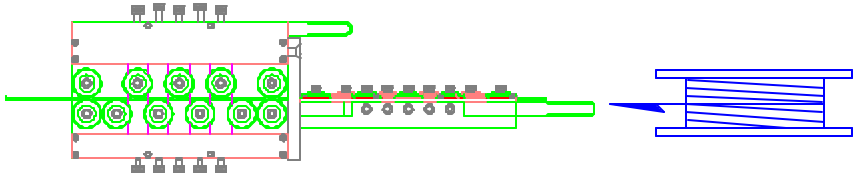
BANK #1
HORIZONTAL AXIS OF COIL

FEED FROM LEFT



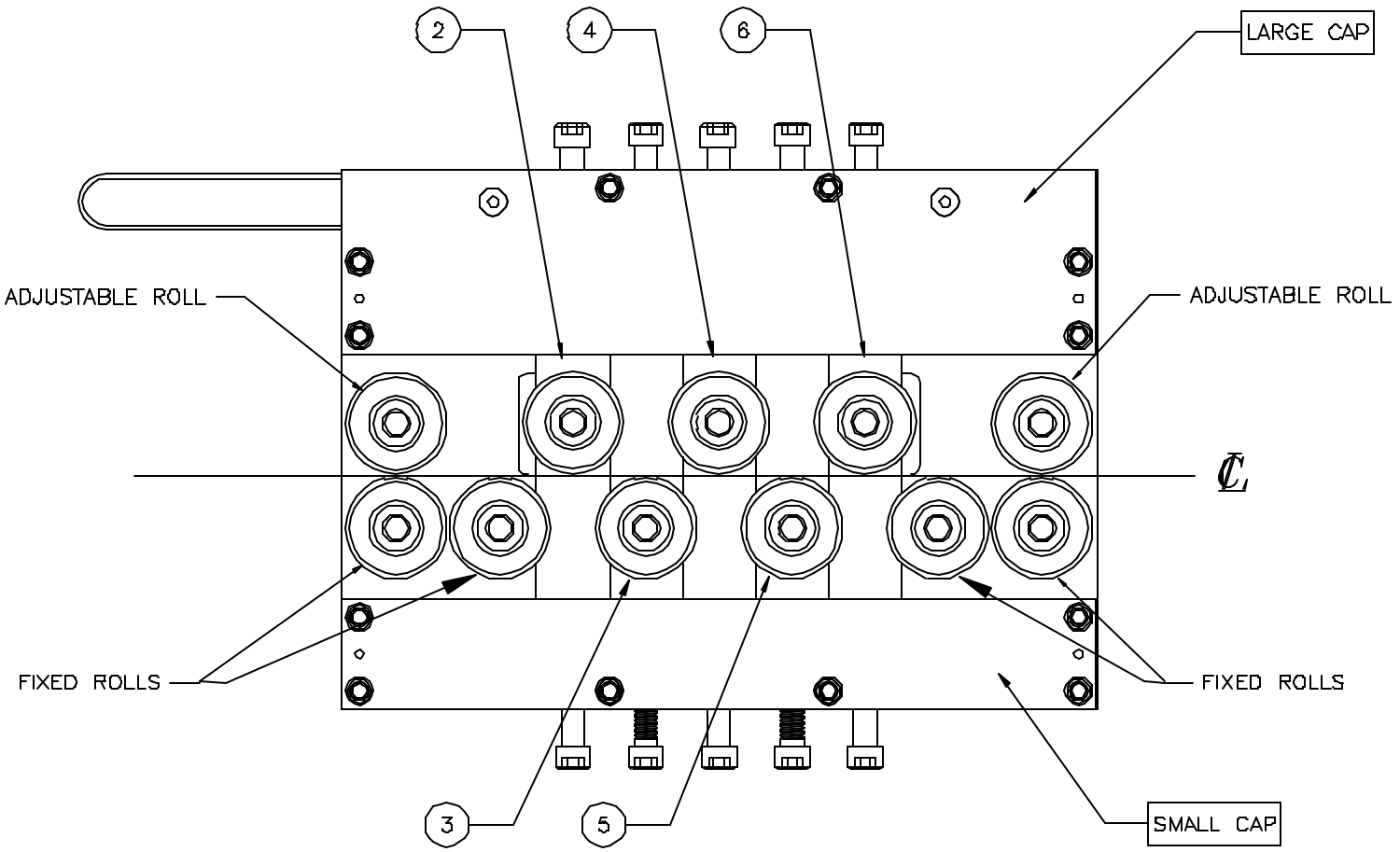
BANK #1
VERTICAL AXIS OF COIL

FEED FROM RIGHT

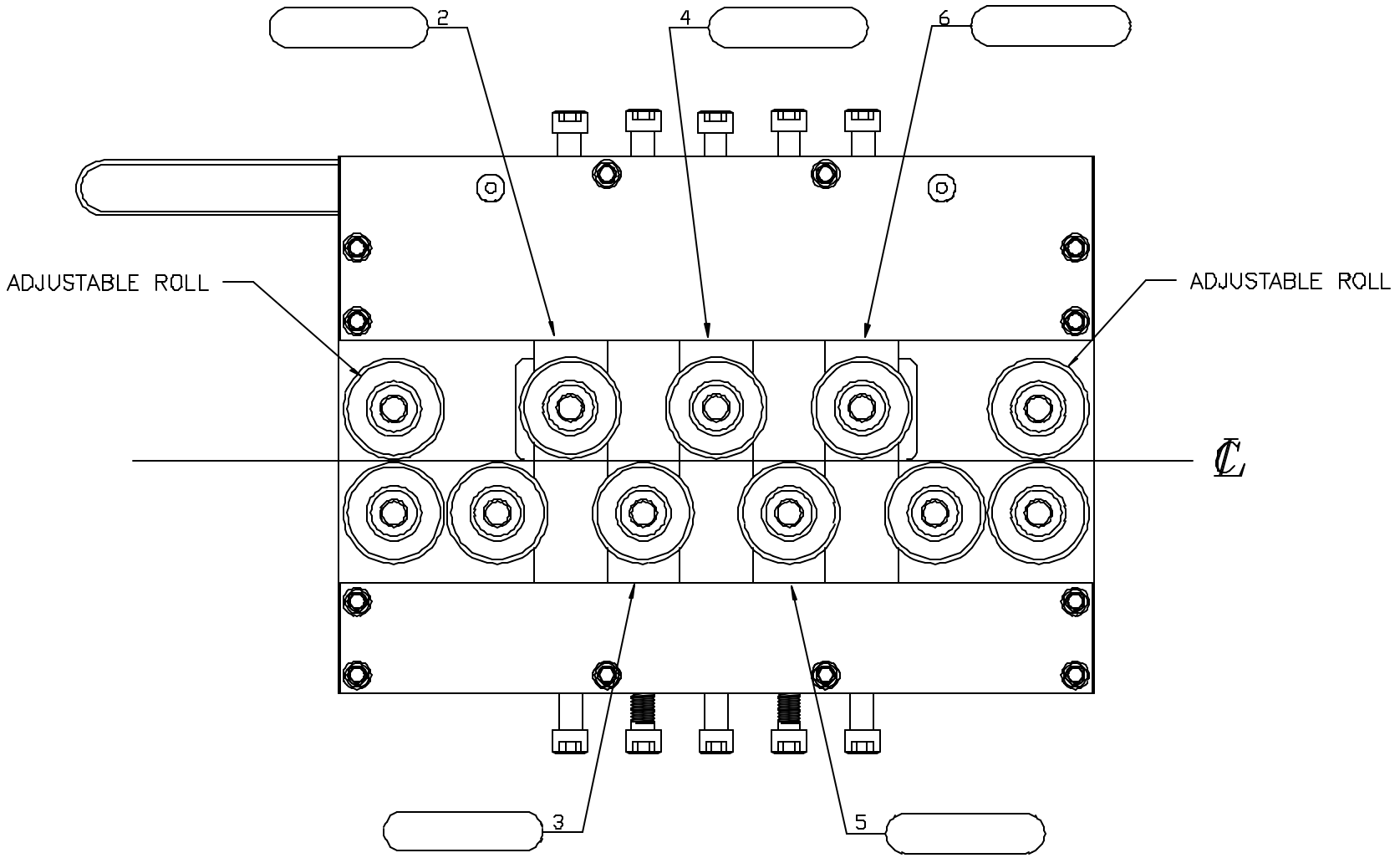


BANK #1
VERTICAL AXIS OF COIL

DET. "A"


2
4
6
LARGE CAP
ADJUSTABLE ROLL
ADJUSTABLE ROLL
℄
FIXED ROLLS
FIXED ROLLS
3
5
SMALL CAP

RECORDER SHEET:



PWS Quick Set Modifications & Setting Instructions. This is used only to update an older unit to current “QS”

1.) Loosen the screws retaining the roll caps.
2.) Place size blocks/gages of (.266”for a #4 and .315” for a #5) between the small roll cap and the (2) stationary mounted bearings at the ends of the straightener.
3.) Pull the cap snugly against the blocks/gages and retighten the cap mounting screws.
4.) Remove the blocks/gages from between the cap and bearings.
5.) Place gage blocks/gages of (3.312”for a #4 and 4.188” for a #5) between the cap that was just positioned and the other larger cap that was loosened in the first step.
6.) Pull the larger cap snugly against the blocks/gages and against the other smaller cap, and retighten the mounting screws in the larger cap.
7.) Check to be sure that the caps are parallel w/in .001 from end to end. If not go back and redo step #5 & #6.
8.) Make sure that all cap retaining screws are tight.
9.) On both ends, drill and dowel the caps to the body in a convenient location. Use a 1/8” or similar dowel/pin. This will keep the caps in proper location to use the QS setting system.
10.) Refer to the table for the size wire you are going to use.
11.) Make sure the Quick release handle is closed securely.
12.) Place the “QS” size block/gage found in the table between the large cap and the bearing. Adjust the bearing to just retain the size block/gage between the cap and bearing using the adjusting screws on each end of the bearing roll plate.
13.) Adjust all the movable bearings (9) by the same method.
14.) This is the “Wire Zero” position for the size wire being used.
15.) All adjustments for wire “break” are performed in the same manner as the settings described above.

#4 PWS SETTINGS TABLE

Wire Size	"QS" Large	"QS" Small	4.0%	4.0%	6.0%	6.0%	8.0%	8.0%	10.0%	10.0%	12.0%	12.0%	14.0%	14.0%	16.0%	16.0%	18.0%	18.0%	20.0%	20.0%	22.0%	22.0%	24.0%	24.0%	26.0%	26.0%
0.092	0.295	0.266	0.299	0.270	0.301	0.272	0.303	0.273	0.304	0.275	0.306	0.277	0.308	0.279	0.310	0.281	0.312	0.283	0.314	0.284	0.316	0.286	0.317	0.288	0.319	0.290
0.093	0.294	0.266	0.298	0.270	0.300	0.272	0.302	0.273	0.303	0.275	0.305	0.277	0.307	0.279	0.309	0.281	0.311	0.283	0.313	0.285	0.315	0.286	0.316	0.288	0.318	0.290
0.094	0.293	0.266	0.297	0.270	0.299	0.272	0.300	0.274	0.302	0.275	0.304	0.277	0.306	0.279	0.308	0.281	0.310	0.283	0.312	0.285	0.314	0.287	0.316	0.289	0.317	0.290
0.095	0.292	0.266	0.296	0.270	0.298	0.272	0.299	0.274	0.301	0.276	0.303	0.277	0.305	0.279	0.307	0.281	0.309	0.283	0.311	0.285	0.313	0.287	0.315	0.289	0.317	0.291
0.096	0.291	0.266	0.294	0.270	0.296	0.272	0.298	0.274	0.300	0.276	0.302	0.278	0.304	0.279	0.306	0.281	0.308	0.283	0.310	0.285	0.312	0.287	0.314	0.289	0.316	0.291
0.097	0.289	0.266	0.293	0.270	0.295	0.272	0.297	0.274	0.299	0.276	0.301	0.278	0.303	0.280	0.305	0.282	0.307	0.283	0.309	0.285	0.311	0.287	0.313	0.289	0.315	0.291
0.098	0.288	0.266	0.292	0.270	0.294	0.272	0.296	0.274	0.298	0.276	0.300	0.278	0.302	0.280	0.304	0.282	0.306	0.284	0.308	0.286	0.310	0.288	0.312	0.290	0.314	0.291
0.099	0.287	0.266	0.291	0.270	0.293	0.272	0.295	0.274	0.297	0.276	0.299	0.278	0.301	0.280	0.303	0.282	0.305	0.284	0.307	0.286	0.309	0.288	0.311	0.290	0.313	0.292
0.100	0.286	0.266	0.290	0.270	0.292	0.272	0.294	0.274	0.296	0.276	0.298	0.278	0.300	0.280	0.302	0.282	0.304	0.284	0.306	0.286	0.308	0.288	0.310	0.290	0.312	0.292
0.101	0.285	0.266	0.289	0.270	0.291	0.272	0.293	0.274	0.295	0.276	0.297	0.278	0.299	0.280	0.301	0.282	0.303	0.284	0.305	0.286	0.307	0.288	0.309	0.290	0.311	0.292
0.102	0.284	0.266	0.288	0.270	0.290	0.272	0.292	0.274	0.294	0.276	0.296	0.278	0.298	0.280	0.300	0.282	0.302	0.284	0.304	0.286	0.306	0.288	0.308	0.290	0.310	0.293
0.103	0.283	0.266	0.287	0.270	0.289	0.272	0.291	0.274	0.293	0.276	0.295	0.278	0.297	0.280	0.299	0.282	0.301	0.285	0.303	0.287	0.305	0.289	0.307	0.291	0.309	0.293
0.104	0.281	0.266	0.286	0.270	0.288	0.272	0.290	0.274	0.292	0.276	0.294	0.278	0.296	0.281	0.298	0.283	0.300	0.285	0.302	0.287	0.304	0.289	0.306	0.291	0.308	0.293
0.105	0.280	0.266	0.284	0.270	0.287	0.272	0.289	0.274	0.291	0.277	0.293	0.279	0.295	0.281	0.297	0.283	0.299	0.285	0.301	0.287	0.303	0.289	0.305	0.291	0.308	0.293
0.106	0.279	0.266	0.283	0.270	0.285	0.272	0.288	0.274	0.290	0.277	0.292	0.279	0.294	0.281	0.296	0.283	0.298	0.285	0.300	0.287	0.302	0.289	0.305	0.291	0.307	0.294
0.107	0.278	0.266	0.282	0.270	0.284	0.272	0.286	0.275	0.289	0.277	0.291	0.279	0.293	0.281	0.295	0.283	0.297	0.285	0.299	0.287	0.301	0.290	0.304	0.292	0.306	0.294
0.108	0.277	0.266	0.281	0.270	0.283	0.272	0.285	0.275	0.288	0.277	0.290	0.279	0.292	0.281	0.294	0.283	0.296	0.285	0.298	0.288	0.301	0.290	0.303	0.292	0.305	0.294
0.109	0.276	0.266	0.280	0.270	0.282	0.273	0.284	0.275	0.287	0.277	0.289	0.279	0.291	0.281	0.293	0.283	0.295	0.286	0.297	0.288	0.300	0.290	0.302	0.292	0.304	0.294
0.110	0.274	0.266	0.279	0.270	0.281	0.273	0.283	0.275	0.285	0.277	0.288	0.279	0.290	0.281	0.292	0.284	0.294	0.286	0.296	0.288	0.299	0.290	0.301	0.292	0.303	0.295
0.111	0.273	0.266	0.278	0.270	0.280	0.273	0.282	0.275	0.284	0.277	0.287	0.279	0.289	0.282	0.291	0.284	0.293	0.286	0.296	0.288	0.298	0.290	0.300	0.293	0.302	0.295
0.112	0.272	0.266	0.277	0.270	0.279	0.273	0.281	0.275	0.283	0.277	0.286	0.279	0.288	0.282	0.290	0.284	0.292	0.286	0.295	0.288	0.297	0.291	0.299	0.293	0.301	0.295
0.113	0.271	0.266	0.276	0.271	0.278	0.273	0.280	0.275	0.282	0.277	0.285	0.280	0.287	0.282	0.289	0.284	0.291	0.286	0.294	0.289	0.296	0.291	0.298	0.293	0.300	0.295
0.114	0.270	0.266	0.274	0.271	0.277	0.273	0.279	0.275	0.281	0.277	0.284	0.280	0.286	0.282	0.288	0.284	0.290	0.287	0.293	0.289	0.295	0.291	0.297	0.293	0.299	0.296
0.115	0.269	0.266	0.273	0.271	0.276	0.273	0.278	0.275	0.280	0.278	0.282	0.280	0.285	0.282	0.287	0.284	0.289	0.287	0.292	0.289	0.294	0.291	0.296	0.294	0.299	0.296
0.116	0.268	0.266	0.272	0.271	0.274	0.273	0.277	0.275	0.279	0.278	0.281	0.280	0.284	0.282	0.286	0.285	0.288	0.287	0.291	0.289	0.293	0.292	0.295	0.294	0.298	0.296
0.117	0.266	0.266	0.271	0.271	0.273	0.273	0.276	0.275	0.278	0.278	0.280	0.280	0.283	0.282	0.285	0.285	0.287	0.287	0.290	0.289	0.292	0.292	0.294	0.294	0.297	0.296
0.118	0.265	0.266	0.270	0.271	0.272	0.273	0.275	0.275	0.277	0.278	0.279	0.280	0.282	0.283	0.284	0.285	0.286	0.287	0.289	0.290	0.291	0.292	0.294	0.294	0.296	0.297
0.119	0.264	0.266	0.269	0.271	0.271	0.273	0.274	0.276	0.276	0.278	0.278	0.280	0.281	0.283	0.283	0.285	0.285	0.287	0.288	0.290	0.290	0.292	0.293	0.295	0.295	0.297
0.120	0.263	0.266	0.268	0.271	0.270	0.273	0.273	0.276	0.275	0.278	0.277	0.280	0.280	0.283	0.282	0.285	0.285	0.288	0.287	0.290	0.289	0.292	0.292	0.295	0.294	0.297
0.121	0.262	0.266	0.267	0.271	0.269	0.273	0.271	0.276	0.274	0.278	0.276	0.281	0.279	0.283	0.281	0.285	0.284	0.288	0.286	0.290	0.288	0.293	0.291	0.295	0.293	0.297
0.122	0.261	0.266	0.265	0.271	0.268	0.273	0.270	0.276	0.273	0.278	0.275	0.281	0.278	0.283	0.280	0.286	0.283	0.288	0.285	0.290	0.287	0.293	0.290	0.295	0.292	0.298
0.123	0.259	0.266	0.264	0.271	0.267	0.273	0.269	0.276	0.272	0.278	0.274	0.281	0.277	0.283	0.279	0.286	0.282	0.288	0.284	0.291	0.287	0.293	0.289	0.296	0.291	0.298
0.124	0.258	0.266	0.263	0.271	0.266	0.273	0.268	0.276	0.271	0.278	0.273	0.281	0.276	0.283	0.278	0.286	0.281	0.288	0.283	0.291	0.286	0.293	0.288	0.296	0.291	0.298
0.125	0.257	0.266	0.262	0.271	0.265	0.274	0.267	0.276	0.270	0.279	0.272	0.281	0.275	0.284	0.277	0.286	0.280	0.289	0.282	0.291	0.285	0.294	0.287	0.296	0.290	0.299
0.126	0.256	0.266	0.261	0.271	0.264	0.274	0.266	0.276	0.269	0.279	0.271	0.281	0.274	0.284	0.276	0.286	0.279	0.289	0.281	0.291	0.284	0.294	0.286	0.296	0.289	0.299
0.127	0.255	0.266	0.260	0.271	0.262	0.274	0.265	0.276	0.268	0.279	0.270	0.281	0.273	0.284	0.275	0.286	0.278	0.289	0.280	0.291	0.283	0.294	0.285	0.296	0.288	0.299
0.128	0.254	0.266	0.259	0.271	0.261	0.274	0.264	0.276	0.266	0.279	0.269	0.281	0.272	0.284	0.274	0.286	0.277	0.289	0.279	0.292	0.282	0.294	0.284	0.297	0.287	0.299
0.129	0.253	0.266	0.258	0.271	0.260	0.274	0.263	0.276	0.265	0.279	0.268	0.281	0.271	0.284	0.273	0.287	0.276	0.289	0.278	0.292	0.281	0.294	0.283	0.297	0.286	0.300
0.130	0.251	0.266	0.257	0.271	0.259	0.274	0.262	0.276	0.264	0.279	0.267	0.282	0.270	0.284	0.272	0.287	0.275	0.289	0.277	0.292	0.280	0.295	0.283	0.297	0.285	0.300
0.131	0.250	0.266	0.255	0.271	0.258	0.274	0.261	0.276	0.263	0.279	0.266	0.282	0.269	0.284	0.271	0.287	0.274	0.290	0.276	0.292	0.279	0.295	0.282	0.297	0.284	0.300
0.132	0.249	0.266	0.254	0.271	0.257	0.274	0.260	0.277	0.262	0.279	0.265	0.282	0.268	0.284	0.270	0.287	0.273	0.290	0.275	0.292	0.278	0.295	0.281	0.298	0.283	0.300
0.133	0.248	0.266	0.253	0.271	0.256	0.274	0.259	0.277	0.261	0.279	0.264	0.282	0.267	0.285	0.269	0.287	0.272	0.290	0.274	0.293	0.277	0.295	0.280	0.298	0.282	0.301
0.134	0.247	0.266	0.252	0.271	0.255	0.274	0.257	0.277	0.260	0.279	0.263	0.282	0.265	0.285	0.268	0.287	0.271	0.290	0.274	0.293	0.276	0.295	0.279	0.298	0.282	0.301
0.135	0.246	0.266	0.251	0.271	0.254	0.274	0.256	0.277	0.259	0.280	0.262	0.282	0.264	0.285	0.267	0.288	0.270	0.290	0.273	0.293	0.275	0.296	0.278	0.298	0.281	0.301
0.136	0.244	0.266	0.250	0.271	0.253	0.274	0.255	0.277	0.258	0.280	0.261	0.282	0.263	0.285	0.266	0.288	0.269	0.290	0.272	0.293	0.274	0.296	0.277	0.299	0.280	0.301
0.137	0.243	0.266	0.249	0.271	0.251	0.274	0.254	0.277	0.257	0.280	0.260	0.282	0.262	0.285	0.265	0.288	0.268	0.291	0.271	0.293	0.273	0.296	0.276	0.299	0.279	0.302
0.138	0.242	0.266	0.248	0.272	0.250	0.274	0.253	0.277	0.256	0.280	0.259	0.283	0.261	0.285	0.264	0.288	0.267	0.291	0.270	0.294	0.272	0.296	0.275	0.299	0.278	0.302
0.139	0.241	0.266	0.247	0.272	0.249	0.274	0.252	0.277	0.255	0.280	0.258	0.283	0.260	0.285	0.263	0.288	0.266	0.291	0.269	0.294	0.272	0.297	0.274	0.299	0.277	0.302
0.140	0.240	0.266	0.245	0.272	0.248	0.274	0.251	0.277	0.254	0.280	0.257	0.283	0.259	0.286	0.262	0.288	0.265	0.291	0.268	0.294	0.271	0.297	0.273	0.300	0.276	0.302
0.141	0.239	0.266	0.244	0.272	0.247	0.274	0.250	0.277	0.253	0.280	0.256	0.283	0.258	0.286	0.261	0.289	0.264	0.291	0.267	0.294	0.270	0.297	0.272	0.300	0.275	0.303
0.142	0.237	0.266	0.243	0.272	0.246	0.275	0.249	0.277	0.252	0.280	0.255	0.283	0.257	0.286	0.260	0.289	0.263	0.292	0.266	0.294	0.269	0.297	0.272	0.300	0.274	0.303
0.143	0.236	0.266	0.242	0.272	0.245	0.275	0.248	0.277	0.251	0.280	0.253	0.283	0.256	0.286	0.259	0.289	0.262	0.292	0.265	0.295	0.268	0.297	0.271	0.300	0.274	0.303
0.144	0.235	0.266	0.241	0.272	0.244	0.275	0.247	0.278	0.250	0.280	0.252	0.283	0.255	0.286	0.258	0.289	0.261	0.292	0.264	0.295	0.267	0.298	0.270	0.301	0.273	0.303
0.145	0.234	0.266	0.240	0.272	0.243	0.275	0.246	0.278	0.249	0.281	0.251	0.283	0.254	0.286	0.257	0.289	0.260	0.292	0.263	0.295	0.266	0.298	0.269	0.301	0.272	0.304
0.146	0.233	0.266	0.239	0.272	0.242	0.275	0.245	0.278	0.247	0.281	0.250	0.284	0.253	0.286	0.256	0.289	0.259	0.292	0.262	0.295	0.265	0.298	0.268	0.301	0.271	0.304
0.147	0.232	0.266	0.238	0.272	0.241	0.275	0.243	0.278	0.246	0.281	0.249	0.284	0.252	0.287	0.255	0.290	0.258	0.292	0.261	0.295	0.264	0.298	0.267	0.301	0.270	0.304
0.148	0.231	0.266	0.236	0.272	0.239	0.275	0.242	0.278	0.245	0.281	0.248	0.284	0.251	0.287	0.254	0.290	0.257	0.293	0.260	0.296	0.263	0.299	0.266	0.302	0.269	0.304
0.149	0.229	0.266	0.235	0.272	0.238	0.275	0.241	0.278	0.244	0.281	0.247	0.284	0.250	0.287	0.253	0.290	0.256	0.293	0.259	0.296	0.262	0.299	0.265	0.302	0.268	0.305
0.150	0.228	0.266	0.234	0.272	0.237	0.275	0.240	0.278	0.243	0.281	0.246	0.284	0.249	0.287	0.252	0.290	0.255	0.293	0.258	0.296	0.261	0.299	0.264	0.302	0.267	0.305
0.151	0.227	0.266	0.233	0.272	0.236	0.275	0.239	0.278	0.242	0.281	0.245	0.284	0.248	0.287	0.251	0.290	0.254	0.293	0.257	0.296	0.260	0.299	0.263	0.302	0.266	0.305
0.152	0.226	0.266	0.232	0.272	0.235	0.275	0.238	0.278	0.241	0.281	0.244	0.284	0.247	0.287	0.250	0.290	0.253	0.293	0.256	0.296	0.259	0.299	0.262	0.302	0.265	0.306
0.153	0.225	0.266	0.231	0.272	0.234	0.275	0.237	0.278	0.240	0.281	0.243	0.284	0.246	0.287	0.249	0.290	0.252	0.294	0.255	0.297	0.258	0.300	0.262	0.303	0.265	0.306
0.154	0.224	0.266	0.230	0.272	0.233	0.275	0.236	0.278	0.239	0.281	0.242	0.284	0.245	0.288	0.248	0.291	0.251	0.294	0.254	0.297	0.258	0.300	0.261	0.303	0.264	0.306
0.155	0.222	0.266	0.229	0.272	0.232	0.275	0.235	0.278	0.238	0.282	0.241	0.285	0.244	0.288	0.247	0.291	0.250	0.294	0.253	0.297	0.257	0.300	0.260	0.303	0.263	0.306
0.156	0.221	0.266	0.228	0.272	0.231	0.275	0.234	0.278	0.237	0.282	0.240	0.285	0.243	0.288	0.246	0.291	0.249	0.294	0.253	0.297	0.256	0.300	0.259	0.303	0.262	0.307
0.157	0.220	0.266	0.226	0.272	0.230	0.275	0.233	0.279	0.236	0.282	0.239	0.285	0.242	0.288	0.245	0.291	0.248	0.294	0.252	0.297	0.255	0.301	0.258	0.304	0.261	0.307
0.158	0.219	0.266	0.225	0.272	0.228	0.275	0.232	0.279	0.235	0.282	0.238	0.285	0.241	0.288	0.244	0.291	0.247	0.294	0.251	0.298	0.254	0.301	0.257	0.304	0.260	0.307
0.159	0.218	0.266	0.224	0.272	0.227	0.276	0.231	0.279	0.234	0.282	0.237	0.285	0.240	0.288	0.243	0.291	0.246	0.295	0.250	0.298	0.253	0.301	0.256	0.304	0.259	0.307
0.160	0.217	0.266	0.223	0.272	0.226	0.276	0.229	0.279	0.233	0.282	0.236	0.285	0.239	0.288	0.242	0.292	0.245	0.295	0.249	0.298	0.252	0.301	0.255	0.304	0.258	0.308
0.161	0.216	0.266	0.222	0.272	0.225	0.276	0.228	0.279	0.232	0.282	0.235	0.285	0.238	0.289	0.241	0.292	0.245	0.295	0.248	0.298	0.251	0.301	0.254	0.305	0.257	0.308
0.162	0.214	0.266	0.221	0.272	0.224	0.276	0.227	0.279	0.231	0.282	0.234	0.285	0.237	0.289	0.240	0.292	0.244	0.295	0.247	0.298	0.250	0.302	0.253	0.305	0.257	0.308
0.163	0.213	0.266	0.220	0.273	0.223	0.276	0.226	0.279	0.230	0.282	0.233	0.286	0.236	0.289	0.239	0.292	0.243	0.295	0.246	0.299	0.249	0.302	0.252	0.305	0.256	0.308
0.164	0.212	0.266	0.219	0.273	0.222	0.276	0.225	0.279	0.228	0.282	0.232	0.286	0.235	0.289	0.238	0.292	0.242	0.296	0.245	0.299	0.248	0.302	0.251	0.305	0.255	0.309
0.165	0.211	0.266	0.218	0.273	0.221	0.276	0.224	0.279	0.227	0.283	0.231	0.286	0.234	0.289	0.237	0.292	0.241	0.296	0.244	0.299	0.247	0.302	0.251	0.306	0.254	0.309

#5 PWS SETTINGS TABLE

Wire Size	"QS" Large	"QS" Small	4.0%	4.0%	6.0%	6.0%	8.0%	8.0%	10.0%	10.0%	12.0%	12.0%	14.0%	14.0%	16.0%	16.0%	18.0%	18.0%	20.0%	20.0%
0.140	0.339	0.315	0.345	0.321	0.347	0.323	0.350	0.326	0.353	0.329	0.356	0.332	0.359	0.335	0.361	0.337	0.364	0.340	0.367	0.343
0.141	0.338	0.315	0.343	0.321	0.346	0.323	0.349	0.326	0.352	0.329	0.355	0.332	0.358	0.335	0.360	0.338	0.363	0.340	0.366	0.343
0.142	0.337	0.315	0.342	0.321	0.345	0.324	0.348	0.326	0.351	0.329	0.354	0.332	0.357	0.335	0.359	0.338	0.362	0.341	0.365	0.343
0.143	0.336	0.315	0.341	0.321	0.344	0.324	0.347	0.326	0.350	0.329	0.353	0.332	0.356	0.335	0.358	0.338	0.361	0.341	0.364	0.344
0.144	0.334	0.315	0.340	0.321	0.343	0.324	0.346	0.327	0.349	0.329	0.352	0.332	0.355	0.335	0.357	0.338	0.360	0.341	0.363	0.344
0.145	0.333	0.315	0.339	0.321	0.342	0.324	0.345	0.327	0.348	0.330	0.351	0.332	0.354	0.335	0.356	0.338	0.359	0.341	0.362	0.344
0.146	0.332	0.315	0.338	0.321	0.341	0.324	0.344	0.327	0.347	0.330	0.350	0.333	0.353	0.335	0.355	0.338	0.358	0.341	0.361	0.344
0.147	0.331	0.315	0.337	0.321	0.340	0.324	0.343	0.327	0.346	0.330	0.349	0.333	0.351	0.336	0.354	0.339	0.357	0.341	0.360	0.344
0.148	0.330	0.315	0.336	0.321	0.339	0.324	0.342	0.327	0.345	0.330	0.348	0.333	0.350	0.336	0.353	0.339	0.356	0.342	0.359	0.345
0.149	0.329	0.315	0.335	0.321	0.338	0.324	0.341	0.327	0.344	0.330	0.346	0.333	0.349	0.336	0.352	0.339	0.355	0.342	0.358	0.345
0.150	0.327	0.315	0.333	0.321	0.336	0.324	0.339	0.327	0.342	0.330	0.345	0.333	0.348	0.336	0.351	0.339	0.354	0.342	0.357	0.345
0.151	0.326	0.315	0.332	0.321	0.335	0.324	0.338	0.327	0.341	0.330	0.344	0.333	0.347	0.336	0.350	0.339	0.353	0.342	0.356	0.345
0.152	0.325	0.315	0.331	0.321	0.334	0.324	0.337	0.327	0.340	0.330	0.343	0.333	0.346	0.336	0.349	0.339	0.352	0.342	0.356	0.345
0.153	0.324	0.315	0.330	0.321	0.333	0.324	0.336	0.327	0.339	0.330	0.342	0.333	0.345	0.336	0.348	0.339	0.352	0.343	0.355	0.346
0.154	0.323	0.315	0.329	0.321	0.332	0.324	0.335	0.327	0.338	0.330	0.341	0.333	0.344	0.337	0.347	0.340	0.351	0.343	0.354	0.346
0.155	0.322	0.315	0.328	0.321	0.331	0.324	0.334	0.327	0.337	0.331	0.340	0.334	0.343	0.337	0.346	0.340	0.350	0.343	0.353	0.346
0.156	0.321	0.315	0.327	0.321	0.330	0.324	0.333	0.327	0.336	0.331	0.339	0.334	0.342	0.337	0.345	0.340	0.349	0.343	0.352	0.346
0.157	0.319	0.315	0.326	0.321	0.329	0.324	0.332	0.328	0.335	0.331	0.338	0.334	0.341	0.337	0.344	0.340	0.348	0.343	0.351	0.346
0.158	0.318	0.315	0.325	0.321	0.328	0.324	0.331	0.328	0.334	0.331	0.337	0.334	0.340	0.337	0.343	0.340	0.347	0.343	0.350	0.347
0.159	0.317	0.315	0.323	0.321	0.327	0.325	0.330	0.328	0.333	0.331	0.336	0.334	0.339	0.337	0.342	0.340	0.346	0.344	0.349	0.347
0.160	0.316	0.315	0.322	0.321	0.325	0.325	0.329	0.328	0.332	0.331	0.335	0.334	0.338	0.337	0.341	0.341	0.345	0.344	0.348	0.347
0.161	0.315	0.315	0.321	0.321	0.324	0.325	0.328	0.328	0.331	0.331	0.334	0.334	0.337	0.338	0.340	0.341	0.344	0.344	0.347	0.347
0.162	0.314	0.315	0.320	0.321	0.323	0.325	0.327	0.328	0.330	0.331	0.333	0.334	0.336	0.338	0.339	0.341	0.343	0.344	0.346	0.347
0.163	0.312	0.315	0.319	0.322	0.322	0.325	0.325	0.328	0.329	0.331	0.332	0.335	0.335	0.338	0.339	0.341	0.342	0.344	0.345	0.348
0.164	0.311	0.315	0.318	0.322	0.321	0.325	0.324	0.328	0.328	0.331	0.331	0.335	0.334	0.338	0.338	0.341	0.341	0.345	0.344	0.348
0.165	0.310	0.315	0.317	0.322	0.320	0.325	0.323	0.328	0.327	0.332	0.330	0.335	0.333	0.338	0.337	0.341	0.340	0.345	0.343	0.348
0.166	0.309	0.315	0.316	0.322	0.319	0.325	0.322	0.328	0.326	0.332	0.329	0.335	0.332	0.338	0.336	0.342	0.339	0.345	0.342	0.348
0.167	0.308	0.315	0.314	0.322	0.318	0.325	0.321	0.328	0.325	0.332	0.328	0.335	0.331	0.338	0.335	0.342	0.338	0.345	0.341	0.348
0.168	0.307	0.315	0.313	0.322	0.317	0.325	0.320	0.328	0.323	0.332	0.327	0.335	0.330	0.339	0.334	0.342	0.337	0.345	0.340	0.349
0.169	0.305	0.315	0.312	0.322	0.316	0.325	0.319	0.329	0.322	0.332	0.326	0.335	0.329	0.339	0.333	0.342	0.336	0.345	0.339	0.349
0.170	0.304	0.315	0.311	0.322	0.315	0.325	0.318	0.329	0.321	0.332	0.325	0.335	0.328	0.339	0.332	0.342	0.335	0.346	0.338	0.349
0.171	0.303	0.315	0.310	0.322	0.313	0.325	0.317	0.329	0.320	0.332	0.324	0.336	0.327	0.339	0.331	0.342	0.334	0.346	0.337	0.349
0.172	0.302	0.315	0.309	0.322	0.312	0.325	0.316	0.329	0.319	0.332	0.323	0.336	0.326	0.339	0.330	0.343	0.333	0.346	0.336	0.349
0.173	0.301	0.315	0.308	0.322	0.311	0.325	0.315	0.329	0.318	0.332	0.322	0.336	0.325	0.339	0.329	0.343	0.332	0.346	0.335	0.350
0.174	0.300	0.315	0.307	0.322	0.310	0.325	0.314	0.329	0.317	0.332	0.321	0.336	0.324	0.339	0.328	0.343	0.331	0.346	0.335	0.350
0.175	0.299	0.315	0.306	0.322	0.309	0.326	0.313	0.329	0.316	0.333	0.320	0.336	0.323	0.340	0.327	0.343	0.330	0.347	0.334	0.350
0.176	0.297	0.315	0.304	0.322	0.308	0.326	0.311	0.329	0.315	0.333	0.319	0.336	0.322	0.340	0.326	0.343	0.329	0.347	0.333	0.350
0.177	0.296	0.315	0.303	0.322	0.307	0.326	0.310	0.329	0.314	0.333	0.317	0.336	0.321	0.340	0.325	0.343	0.328	0.347	0.332	0.350
0.178	0.295	0.315	0.302	0.322	0.306	0.326	0.309	0.329	0.313	0.333	0.316	0.336	0.320	0.340	0.324	0.343	0.327	0.347	0.331	0.351
0.179	0.294	0.315	0.301	0.322	0.305	0.326	0.308	0.329	0.312	0.333	0.315	0.336	0.319	0.340	0.323	0.344	0.326	0.347	0.330	0.351
0.180	0.293	0.315	0.300	0.322	0.304	0.326	0.307	0.329	0.311	0.333	0.314	0.337	0.318	0.340	0.322	0.344	0.325	0.347	0.329	0.351
0.181	0.292	0.315	0.299	0.322	0.302	0.326	0.306	0.329	0.310	0.333	0.313	0.337	0.317	0.340	0.321	0.344	0.324	0.348	0.328	0.351
0.182	0.290	0.315	0.298	0.322	0.301	0.326	0.305	0.330	0.309	0.333	0.312	0.337	0.316	0.340	0.320	0.344	0.323	0.348	0.327	0.351
0.183	0.289	0.315	0.297	0.322	0.300	0.326	0.304	0.330	0.308	0.333	0.311	0.337	0.315	0.341	0.319	0.344	0.322	0.348	0.326	0.352
0.184	0.288	0.315	0.296	0.322	0.299	0.326	0.303	0.330	0.307	0.333	0.310	0.337	0.314	0.341	0.318	0.344	0.321	0.348	0.325	0.352
0.185	0.287	0.315	0.294	0.322	0.298	0.326	0.302	0.330	0.306	0.334	0.309	0.337	0.313	0.341	0.317	0.345	0.320	0.348	0.324	0.352
0.186	0.286	0.315	0.293	0.322	0.297	0.326	0.301	0.330	0.304	0.334	0.308	0.337	0.312	0.341	0.316	0.345	0.319	0.348	0.323	0.352
0.187	0.285	0.315	0.292	0.322	0.296	0.326	0.300	0.330	0.303	0.334	0.307	0.337	0.311	0.341	0.315	0.345	0.318	0.349	0.322	0.352
0.188	0.284	0.315	0.291	0.323	0.295	0.326	0.299	0.330	0.302	0.334	0.306	0.338	0.310	0.341	0.314	0.345	0.317	0.349	0.321	0.353
0.189	0.282	0.315	0.290	0.323	0.294	0.326	0.298	0.330	0.301	0.334	0.305	0.338	0.309	0.341	0.313	0.345	0.316	0.349	0.320	0.353
0.190	0.281	0.315	0.289	0.323	0.293	0.326	0.296	0.330	0.300	0.334	0.304	0.338	0.308	0.342	0.312	0.345	0.315	0.349	0.319	0.353
0.191	0.280	0.315	0.288	0.323	0.292	0.326	0.295	0.330	0.299	0.334	0.303	0.338	0.307	0.342	0.311	0.346	0.314	0.349	0.318	0.353
0.192	0.279	0.315	0.287	0.323	0.290	0.327	0.294	0.330	0.298	0.334	0.302	0.338	0.306	0.342	0.310	0.346	0.313	0.350	0.317	0.353
0.193	0.278	0.315	0.285	0.323	0.289	0.327	0.293	0.330	0.297	0.334	0.301	0.338	0.305	0.342	0.309	0.346	0.312	0.350	0.316	0.354
0.194	0.277	0.315	0.284	0.323	0.288	0.327	0.292	0.331	0.296	0.334	0.300	0.338	0.304	0.342	0.308	0.346	0.312	0.350	0.315	0.354
0.195	0.275	0.315	0.283	0.323	0.287	0.327	0.291	0.331	0.295	0.335	0.299	0.338	0.303	0.342	0.307	0.346	0.311	0.350	0.314	0.354
0.196	0.274	0.315	0.282	0.323	0.286	0.327	0.290	0.331	0.294	0.335	0.298	0.339	0.302	0.342	0.306	0.346	0.310	0.350	0.313	0.354
0.197	0.273	0.315	0.281	0.323	0.285	0.327	0.289	0.331	0.293	0.335	0.297	0.339	0.301	0.343	0.305	0.347	0.309	0.350	0.313	0.354
0.198	0.272	0.315	0.280	0.323	0.284	0.327	0.288	0.331	0.292	0.335	0.296	0.339	0.300	0.343	0.304	0.347	0.308	0.351	0.312	0.355

#5 PWS SETTINGS TABLE

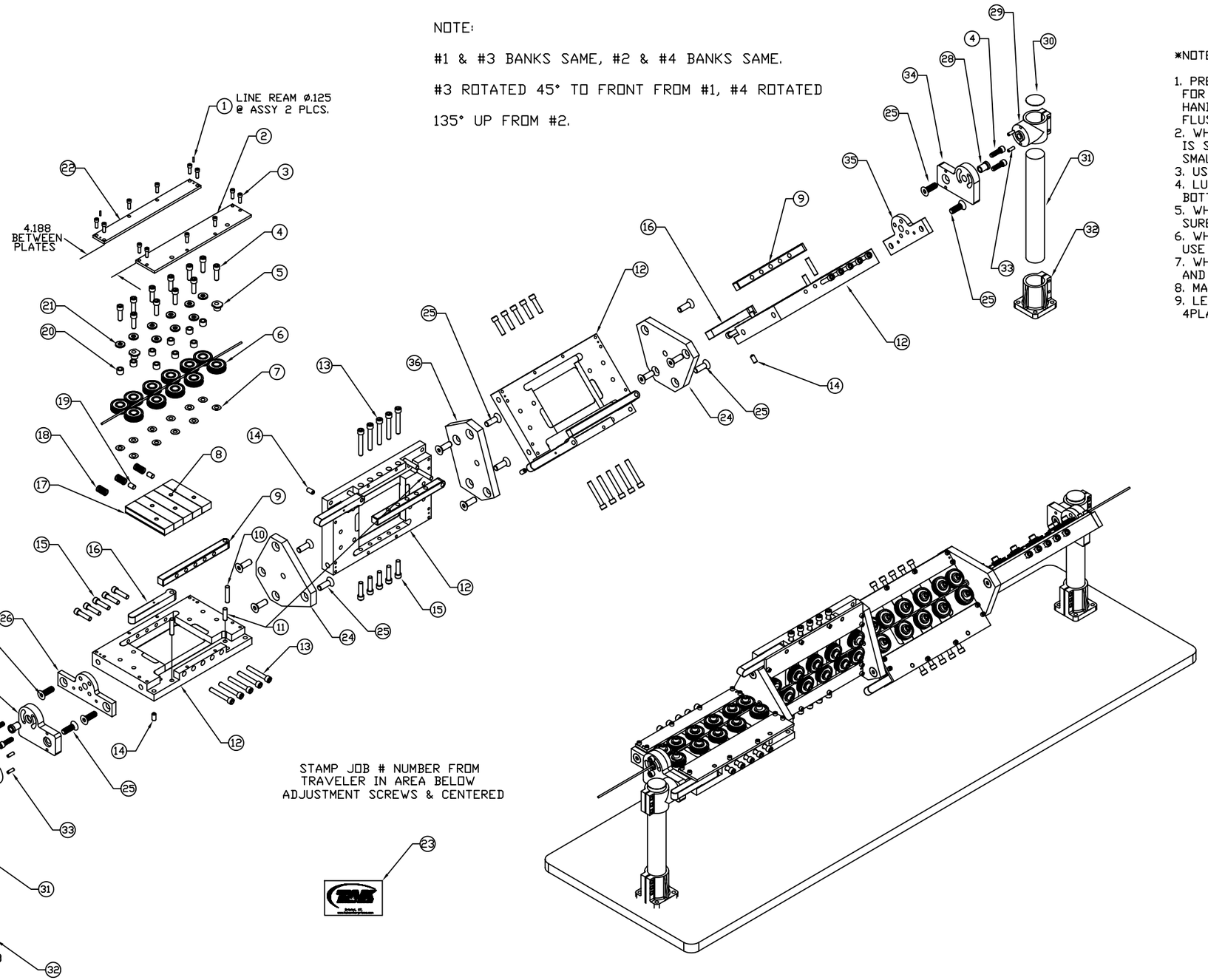
Wire Size	"QS" Large	"QS" Small	4.0%	4.0%	6.0%	6.0%	8.0%	8.0%	10.0%	10.0%	12.0%	12.0%	14.0%	14.0%	16.0%	16.0%	18.0%	18.0%	20.0%	20.0%
0.199	0.271	0.315	0.279	0.323	0.283	0.327	0.287	0.331	0.291	0.335	0.295	0.339	0.299	0.343	0.303	0.347	0.307	0.351	0.311	0.355
0.200	0.270	0.315	0.278	0.323	0.282	0.327	0.286	0.331	0.290	0.335	0.294	0.339	0.298	0.343	0.302	0.347	0.306	0.351	0.310	0.355
0.201	0.269	0.315	0.277	0.323	0.281	0.327	0.285	0.331	0.289	0.335	0.293	0.339	0.297	0.343	0.301	0.347	0.305	0.351	0.309	0.355
0.202	0.267	0.315	0.275	0.323	0.279	0.327	0.284	0.331	0.288	0.335	0.292	0.339	0.296	0.343	0.300	0.347	0.304	0.351	0.308	0.355
0.203	0.266	0.315	0.274	0.323	0.278	0.327	0.282	0.331	0.287	0.335	0.291	0.339	0.295	0.343	0.299	0.347	0.303	0.352	0.307	0.356
0.204	0.265	0.315	0.273	0.323	0.277	0.327	0.281	0.331	0.285	0.335	0.290	0.339	0.294	0.344	0.298	0.348	0.302	0.352	0.306	0.356
0.205	0.264	0.315	0.272	0.323	0.276	0.327	0.280	0.331	0.284	0.336	0.288	0.340	0.293	0.344	0.297	0.348	0.301	0.352	0.305	0.356
0.206	0.263	0.315	0.271	0.323	0.275	0.327	0.279	0.331	0.283	0.336	0.287	0.340	0.292	0.344	0.296	0.348	0.300	0.352	0.304	0.356
0.207	0.262	0.315	0.270	0.323	0.274	0.327	0.278	0.332	0.282	0.336	0.286	0.340	0.291	0.344	0.295	0.348	0.299	0.352	0.303	0.356
0.208	0.260	0.315	0.269	0.323	0.273	0.327	0.277	0.332	0.281	0.336	0.285	0.340	0.290	0.344	0.294	0.348	0.298	0.352	0.302	0.357
0.209	0.259	0.315	0.268	0.323	0.272	0.328	0.276	0.332	0.280	0.336	0.284	0.340	0.289	0.344	0.293	0.348	0.297	0.353	0.301	0.357
0.210	0.258	0.315	0.267	0.323	0.271	0.328	0.275	0.332	0.279	0.336	0.283	0.340	0.288	0.344	0.292	0.349	0.296	0.353	0.300	0.357
0.211	0.257	0.315	0.265	0.323	0.270	0.328	0.274	0.332	0.278	0.336	0.282	0.340	0.286	0.345	0.291	0.349	0.295	0.353	0.299	0.357
0.212	0.256	0.315	0.264	0.323	0.269	0.328	0.273	0.332	0.277	0.336	0.281	0.340	0.285	0.345	0.290	0.349	0.294	0.353	0.298	0.357
0.213	0.255	0.315	0.263	0.324	0.267	0.328	0.272	0.332	0.276	0.336	0.280	0.341	0.284	0.345	0.289	0.349	0.293	0.353	0.297	0.358
0.214	0.253	0.315	0.262	0.324	0.266	0.328	0.271	0.332	0.275	0.336	0.279	0.341	0.283	0.345	0.288	0.349	0.292	0.354	0.296	0.358
0.215	0.252	0.315	0.261	0.324	0.265	0.328	0.270	0.332	0.274	0.337	0.278	0.341	0.282	0.345	0.287	0.349	0.291	0.354	0.295	0.358
0.216	0.251	0.315	0.260	0.324	0.264	0.328	0.268	0.332	0.273	0.337	0.277	0.341	0.281	0.345	0.286	0.350	0.290	0.354	0.294	0.358
0.217	0.250	0.315	0.259	0.324	0.263	0.328	0.267	0.332	0.272	0.337	0.276	0.341	0.280	0.345	0.285	0.350	0.289	0.354	0.293	0.358
0.218	0.249	0.315	0.258	0.324	0.262	0.328	0.266	0.332	0.271	0.337	0.275	0.341	0.279	0.346	0.284	0.350	0.288	0.354	0.292	0.359
0.219	0.248	0.315	0.256	0.324	0.261	0.328	0.265	0.333	0.270	0.337	0.274	0.341	0.278	0.346	0.283	0.350	0.287	0.354	0.292	0.359
0.220	0.247	0.315	0.255	0.324	0.260	0.328	0.264	0.333	0.269	0.337	0.273	0.341	0.277	0.346	0.282	0.350	0.286	0.355	0.291	0.359
0.221	0.245	0.315	0.254	0.324	0.259	0.328	0.263	0.333	0.268	0.337	0.272	0.342	0.276	0.346	0.281	0.350	0.285	0.355	0.290	0.359
0.222	0.244	0.315	0.253	0.324	0.258	0.328	0.262	0.333	0.266	0.337	0.271	0.342	0.275	0.346	0.280	0.351	0.284	0.355	0.289	0.359
0.223	0.243	0.315	0.252	0.324	0.256	0.328	0.261	0.333	0.265	0.337	0.270	0.342	0.274	0.346	0.279	0.351	0.283	0.355	0.288	0.360
0.224	0.242	0.315	0.251	0.324	0.255	0.328	0.260	0.333	0.264	0.337	0.269	0.342	0.273	0.346	0.278	0.351	0.282	0.355	0.287	0.360
0.225	0.241	0.315	0.250	0.324	0.254	0.329	0.259	0.333	0.263	0.338	0.268	0.342	0.272	0.347	0.277	0.351	0.281	0.356	0.286	0.360
0.226	0.240	0.315	0.249	0.324	0.253	0.329	0.258	0.333	0.262	0.338	0.267	0.342	0.271	0.347	0.276	0.351	0.280	0.356	0.285	0.360
0.227	0.238	0.315	0.248	0.324	0.252	0.329	0.257	0.333	0.261	0.338	0.266	0.342	0.270	0.347	0.275	0.351	0.279	0.356	0.284	0.360
0.228	0.237	0.315	0.246	0.324	0.251	0.329	0.256	0.333	0.260	0.338	0.265	0.342	0.269	0.347	0.274	0.351	0.278	0.356	0.283	0.361
0.229	0.236	0.315	0.245	0.324	0.250	0.329	0.254	0.333	0.259	0.338	0.264	0.342	0.268	0.347	0.273	0.352	0.277	0.356	0.282	0.361
0.230	0.235	0.315	0.244	0.324	0.249	0.329	0.253	0.333	0.258	0.338	0.263	0.343	0.267	0.347	0.272	0.352	0.276	0.356	0.281	0.361
0.231	0.234	0.315	0.243	0.324	0.248	0.329	0.252	0.333	0.257	0.338	0.262	0.343	0.266	0.347	0.271	0.352	0.275	0.357	0.280	0.361
0.232	0.233	0.315	0.242	0.324	0.247	0.329	0.251	0.334	0.256	0.338	0.261	0.343	0.265	0.347	0.270	0.352	0.274	0.357	0.279	0.361
0.233	0.232	0.315	0.241	0.324	0.246	0.329	0.250	0.334	0.255	0.338	0.259	0.343	0.264	0.348	0.269	0.352	0.273	0.357	0.278	0.362
0.234	0.230	0.315	0.240	0.324	0.244	0.329	0.249	0.334	0.254	0.338	0.258	0.343	0.263	0.348	0.268	0.352	0.273	0.357	0.277	0.362
0.235	0.229	0.315	0.239	0.324	0.243	0.329	0.248	0.334	0.253	0.339	0.257	0.343	0.262	0.348	0.267	0.353	0.272	0.357	0.276	0.362
0.236	0.228	0.315	0.238	0.324	0.242	0.329	0.247	0.334	0.252	0.339	0.256	0.343	0.261	0.348	0.266	0.353	0.271	0.357	0.275	0.362
0.237	0.227	0.315	0.236	0.324	0.241	0.329	0.246	0.334	0.251	0.339	0.255	0.343	0.260	0.348	0.265	0.353	0.270	0.358	0.274	0.362
0.238	0.226	0.315	0.235	0.325	0.240	0.329	0.245	0.334	0.250	0.339	0.254	0.344	0.259	0.348	0.264	0.353	0.269	0.358	0.273	0.363
0.239	0.225	0.315	0.234	0.325	0.239	0.329	0.244	0.334	0.249	0.339	0.253	0.344	0.258	0.348	0.263	0.353	0.268	0.358	0.272	0.363
0.240	0.223	0.315	0.233	0.325	0.238	0.329	0.243	0.334	0.247	0.339	0.252	0.344	0.257	0.349	0.262	0.353	0.267	0.358	0.271	0.363
0.241	0.222	0.315	0.232	0.325	0.237	0.329	0.242	0.334	0.246	0.339	0.251	0.344	0.256	0.349	0.261	0.354	0.266	0.358	0.270	0.363
0.242	0.221	0.315	0.231	0.325	0.236	0.330	0.240	0.334	0.245	0.339	0.250	0.344	0.255	0.349	0.260	0.354	0.265	0.359	0.270	0.363
0.243	0.220	0.315	0.230	0.325	0.235	0.330	0.239	0.334	0.244	0.339	0.249	0.344	0.254	0.349	0.259	0.354	0.264	0.359	0.269	0.364
0.244	0.219	0.315	0.229	0.325	0.233	0.330	0.238	0.335	0.243	0.339	0.248	0.344	0.253	0.349	0.258	0.354	0.263	0.359	0.268	0.364
0.245	0.218	0.315	0.227	0.325	0.232	0.330	0.237	0.335	0.242	0.340	0.247	0.344	0.252	0.349	0.257	0.354	0.262	0.359	0.267	0.364
0.246	0.217	0.315	0.226	0.325	0.231	0.330	0.236	0.335	0.241	0.340	0.246	0.345	0.251	0.349	0.256	0.354	0.261	0.359	0.266	0.364
0.247	0.215	0.315	0.225	0.325	0.230	0.330	0.235	0.335	0.240	0.340	0.245	0.345	0.250	0.350	0.255	0.355	0.260	0.359	0.265	0.364
0.248	0.214	0.315	0.224	0.325	0.229	0.330	0.234	0.335	0.239	0.340	0.244	0.345	0.249	0.350	0.254	0.355	0.259	0.360	0.264	0.365
0.249	0.213	0.315	0.223	0.325	0.228	0.330	0.233	0.335	0.238	0.340	0.243	0.345	0.248	0.350	0.253	0.355	0.258	0.360	0.263	0.365
0.250	0.212	0.315	0.222	0.325	0.227	0.330	0.232	0.335	0.237	0.340	0.242	0.345	0.247	0.350	0.252	0.355	0.257	0.360	0.262	0.365

MATERIAL REQ'D.	R.C.

NOTE:

#1 & #3 BANKS SAME, #2 & #4 BANKS SAME.

#3 ROTATED 45° TO FRONT FROM #1, #4 ROTATED 135° UP FROM #2.



NOTES FOR ASSEMBLY

1. PRESS DOWEL #10 & #11 INTO HOUSING #12 WITH PLATE #2 ON FOR ALIGNMENT OF #10. INSTALL #11 ON OPPOSITE END FOR HANDLE #16. HANDLE TO BE OPPOSITE OF FIRST BANK AND DOWEL FLUSH TO TOP OF THE HANDLE.
2. WHEN LINE REAMING ROLL PINS, BE SURE LARGE PLATE #2 IS SECURE AND DIM IS CORRECT BEFORE TIGHTENING #22, SMALL PLATE. AFTER SECURE CHECK DIM AGAIN. DEBURR AND CLEAN.
3. USE OIL TO LUBRICATE ROLL PLATES #8 & #17 INTO HOUSING.
4. LUBRICATE BAR #9 FOR SMOOTH OPERATION ON TOP AND BOTTOM SURFACES AND IN DOWEL PIN HOLE.
5. WHEN MARKING THE JOB # FROM TRAVELER ONTO HOUSING BE SURE IT CAN BE READ IN FRONT OF 1ST BANK AND ON TOP OF 2ND.
6. WHEN INSTALLING THE DOWEL PIN #33 INTO #30 TOP SUPPORT USE LOCTITE FOR SECURE FIT IN OVERSIZE HOLES, ONE SIDE ONLY #29.
7. WHEN INSTALLING THE NAME PLATES BE SURE THEY ARE UPRIGHT AND CAN BE READ PROPERLY.
8. MARK EACH BEARING WITH A WHITE MARK FOR VISUAL TURNING.
9. LEG ASSY IS THE SAME FOR BOTH ENDS ON 2PLANE ONLY. FOR 4PLANE ASSY. EXIT SIDE HAS DIFFERENT INNER & OUTER PIVOT PLATE.

ITEM	QTY	PART NUMBER	DESCRIPTION
36	1	1005-161	#2 & #3 BANK CONNECTOR
35	1	1005-163	EXIT INNER PIVOT PLATE
34	1	1005-162	EXIT OUTER PIVOT PLATE
33	4	9007-041	Ø0.250 DOWEL
32	2	9200-100	FOOT SUPPORT
31	2	9200-XXX	COLUMN TUBE
30	2	1005-183	TOP PIVOT SUPPORT
29	2	9200-104	CAP
28	2	9032-003	BUSHING ID 0.4375
27	1	1005-182	OUTER PIVOT PLATE ENTRY
26	1	1005-181	INNER PIVOT PLATE ENTRY
25	18	9001-200	1/2-13 X 1.5 FHCS
24	2	1005-160	CONNECTOR PLATE
23	4	9805-002	NAMEPLATE
22	4	1005-136	ROLL CAP - SMALL
21	36	9008-100	3/8 ID X 1/8 THK HARD WASHER
20	36	1005-180	BEARING COLLAR
19	12	1005-185	TOP SLUG
18	12	9020-006	Ø0.082 X 1-1/2 COMP. SPRING
17	12	1005-131	ROLL PLATE W/HOLE
16	4	1005-178	UNIVERSAL HANDLE
15	20	9000-168	3/8-24 X 1-1/2 SHCS
14	4	9011-001	3/8-16 X 5/8 BALL PLUNGER
13	20	9000-172	3/8-24 X 2-1/2 SHCS
12	4	1005-100	UNIVERSAL #5 HOUSING
11	4	9007-065	3/8 X 1-1/4 STANDARD DOWEL
10	8	9007-067	3/8 X 1-3/4 STD DOWEL
9	4	1005-176	PIVOT BAR
8	8	1005-130	ROLL PLATE/NO HOLE
7	44	9008-003	SHIM WASHERS
6	44	9305-171	BEARING "V"
5	8	1005-190	ECCENTRIC BEARING COLLAR
4	52	9000-147	3/8-16 X 1-1/4 SHCS
3	48	9000-090	1/4-20 X 3/4 SHCS
2	4	1005-138	ROLL CAP - LARGE
1	8	9007-237	1/8 X 1/2 ROLL PIN

#05 4 PLANE ASSY. W/LEGS
EXPLODED VIEW WITH PARTS LIST

REV	ECN	CHG BY	DATE

TOLERANCE UNLESS OTHERWISE STATED

∠	± 3°	FRACT	+/- 1/16
⊥	± 0.0003	.X	± .032
◎	± 0.0002	.XX	± .015
⌖	± 0.0005	.XXX	± .005
=	± 0.0005	.XXXX	± .0005

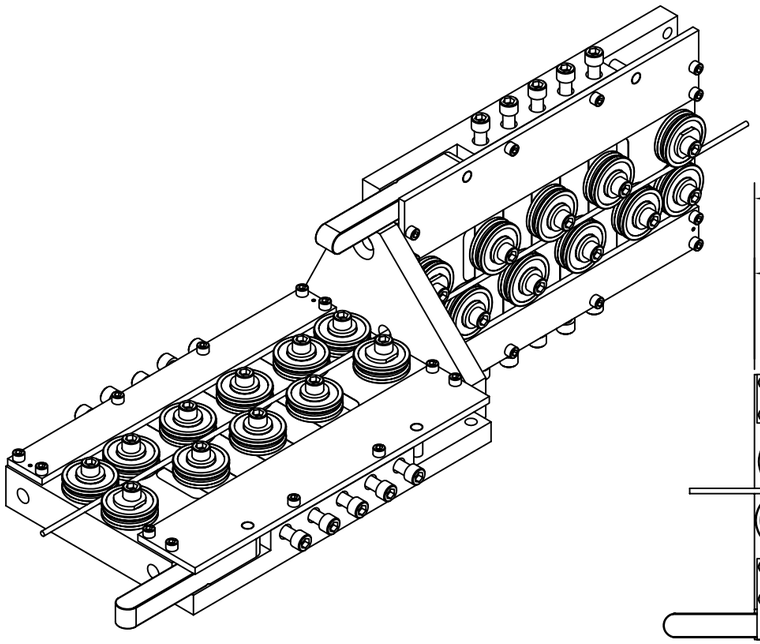
CAD
DWN KPL
CHK
SCALE
DATE 11/6/02

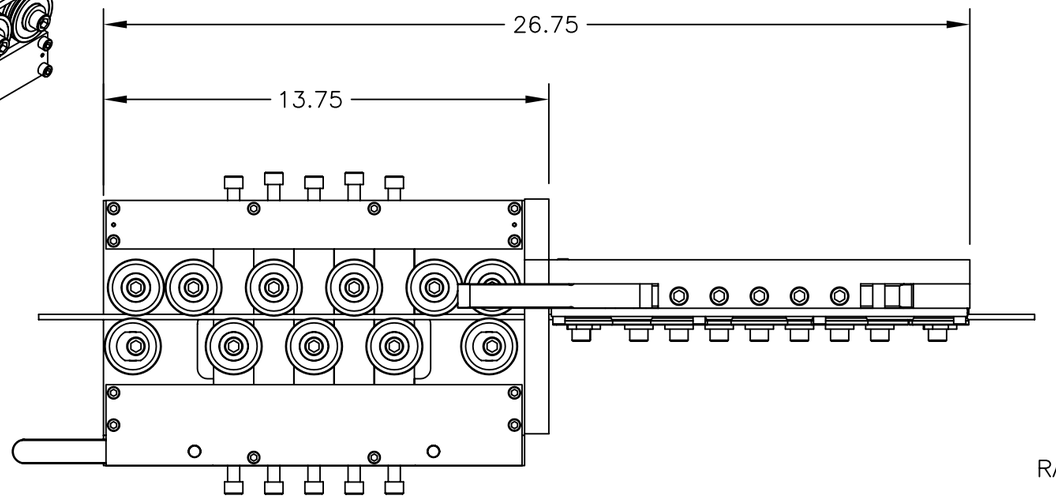
DRAWING / PART NO. 1005-004

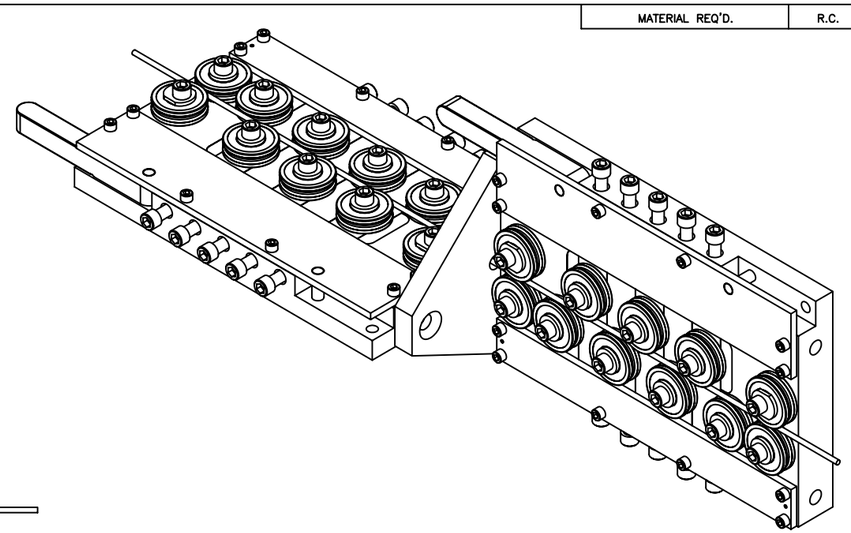
PART NAME 4-PLANE QUICK RELEASE #5 PWS

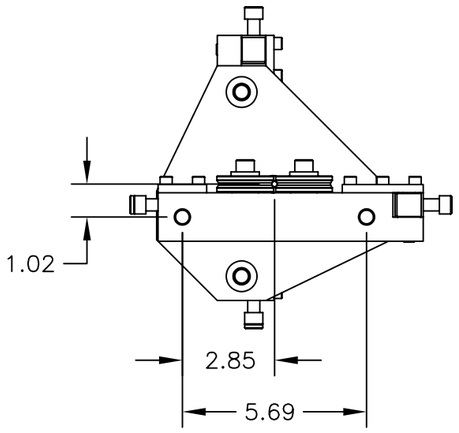
CUSTOMER

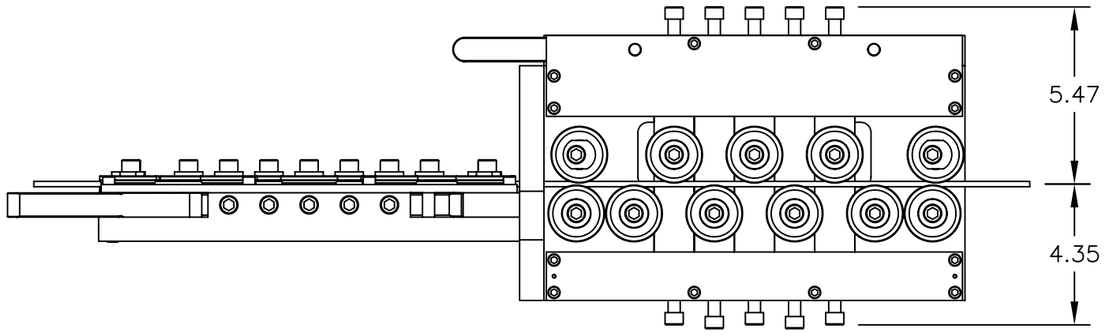
MATERIAL REQ'D.	R.C.

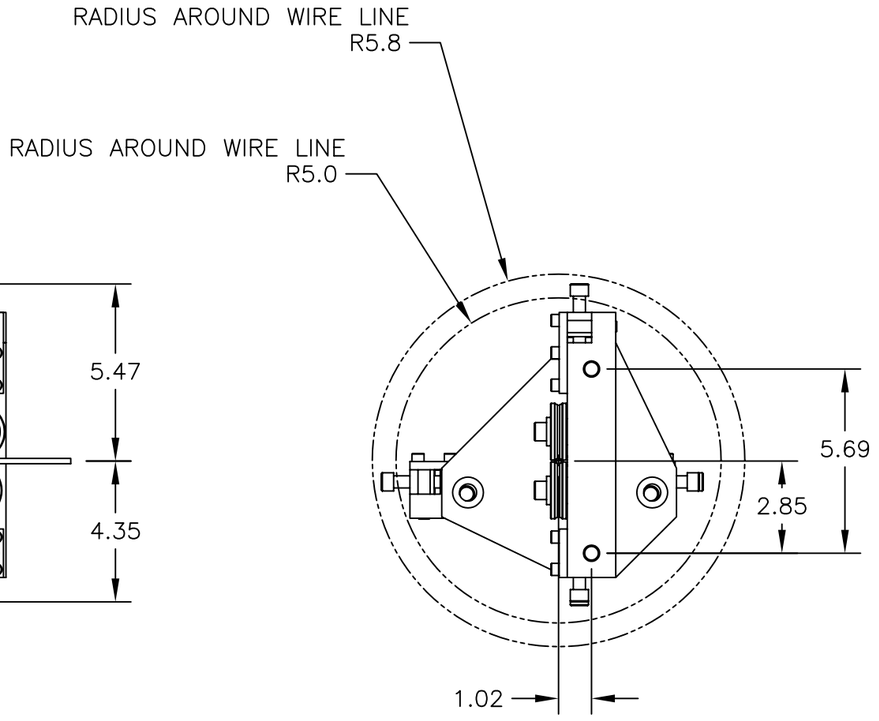










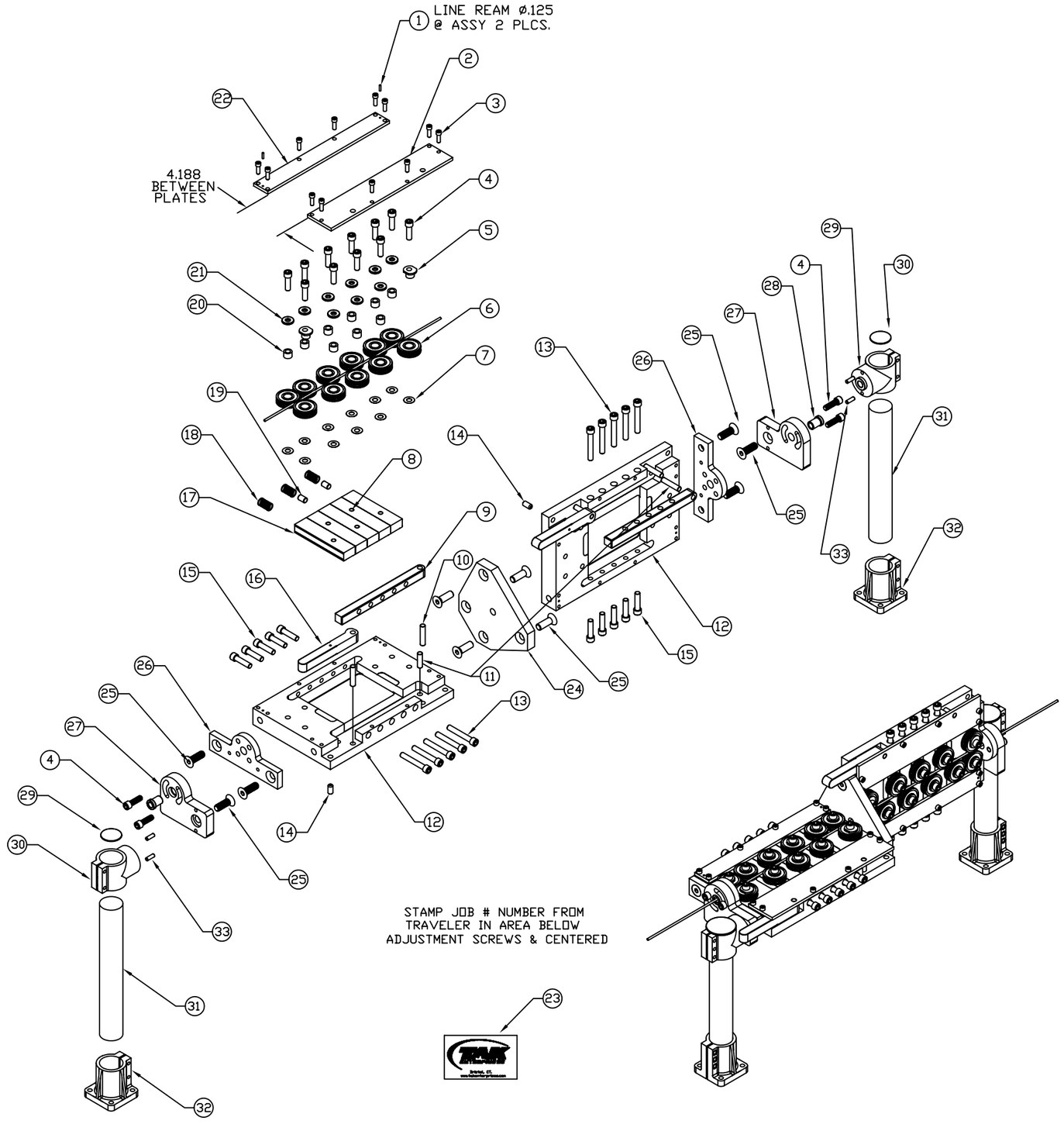


REV	ECN	CHG BY	DATE

ALL DIMENSIONS ARE RELATIVE TO WIRE LINE

TAK ENTERPRISES

TOLERANCE UNLESS OTHERWISE STATED			
∠ ± 3°	FRACT +/- 1/16	CAD	DRAWING / PART NO. 1005-002B
⊥ ± 0.0003	.X ± .032	DWN GDH	PART NAME #05 QR PLAIN MOUNTING
◎ ± 0.0002	.XX ± .015	CHK	
⌖ ± 0.0005	.XXX ± .005	SCALE	CUSTOMER
= ± 0.0005	.XXXX ± .0005	DATE 042304	



MATERIAL REQ'D.	R.C.

NOTES FOR ASSEMBLY

1. PRESS DOWEL #10 & #11 INTO HOUSING #12 WITH PLATE #2 ON FOR ALIGNMENT OF #10. INSTALL #11 ON OPPOSITE END FOR HANDLE #16. HANDLE TO BE OPPOSITE OF FIRST BANK AND DOWEL FLUSH TO TOP OF THE HANDLE.
2. WHEN LINE REAMING ROLL PINS, BE SURE LARGE PLATE #2 IS SECURE AND DIM IS CORRECT BEFORE TIGHTENING #22, SMALL PLATE. AFTER SECURE CHECK DIM AGAIN. DEBURR AND CLEAN.
3. USE OIL TO LUBRICATE ROLL PLATES #8 & #17 INTO HOUSING.
4. LUBRICATE BAR #9 FOR SMOOTH OPERATION ON TOP AND BOTTOM SURFACES AND IN DOWEL PIN HOLE.
5. WHEN MARKING THE JOB # FROM TRAVELER ONTO HOUSING BE SURE IT CAN BE READ IN FRONT OF 1ST BANK AND ON TOP OF 2ND.
6. WHEN INSTALLING THE DOWEL PIN #33 INTO #30 TOP SUPPORT USE LOCTITE FOR SECURE FIT IN OVERSIZE HOLES, ONE SIDE ONLY #29.
7. WHEN INSTALLING THE NAME PLATES BE SURE THEY ARE UPRIGHT AND CAN BE READ PROPERLY.
8. MARK EACH BEARING WITH A WHITE MARK FOR VISUAL TURNING.
9. LEG ASSY IS THE SAME FOR BOTH ENDS ON 2PLANE ONLY. FOR 4PLANE ASSY. EXIT SIDE HAS DIFFERENT INNER & OUTER PIVOT PLATE.

ITEM	QTY	PART NUMBER	DESCRIPTION
33	4	9007-041	ø0.250 DOWEL
32	2	9200-100	FOOT SUPPORT
31	2	9200-XXX	COLUMN TUBE
30	2	1005-183	TOP PIVOT SUPPORT
29	2	9200-104	CAP
28	2	9032-003	BUSHING ID 0.4375
27	2	1005-182	OUTER PIVOT PLATE
26	2	1005-181	INNER PIVOT PLATE
25	10	9001-200	1/2-13 X 1.5 FHCS
24	1	1005-160	CONNECTOR PLATE
23	2	9805-002	NAMEPLATE
22	2	1005-136	ROLL CAP - SMALL
21	18	9008-100	3/8 ID X 1/8 THK HARD WASHER
20	18	1005-180	BEARING COLLAR
19	6	1005-185	TOP SLUG
18	6	9020-006	ø0.082 X 1-1/2 COMP. SPRING
17	6	1005-131	ROLL PLATE W/HOLE
16	2	1005-178	UNIVERSAL HANDLE
15	10	9000-168	3/8-24 X 1-1/2 SHCS
14	2	9011-001	3/8-16 X 5/8 BALL PLUNGER
13	10	9000-172	3/8-24 X 2-1/2 SHCS
12	2	1005-100	UNIVERSAL #5 HOUSING
11	2	9007-065	3/8 X 1-1/4 STANDARD DOWEL
10	4	9007-067	3/8 X 1-3/4 STD DOWEL
9	2	1005-176	PIVOT BAR
8	4	1005-130	ROLL PLATE/NO HOLE
7	22	9008-003	SHIM WASHERS
6	22	9305-171	BEARING "V"
5	4	1005-190	ECCENTRIC BEARING COLLAR
4	26	9000-147	3/8-16 X 1-1/4 SHCS
3	24	9000-090	1/4-20 X 3/4 SHCS
2	2	1005-138	ROLL CAP - LARGE
1	4	9007-237	1/8 X 1/2 ROLL PIN

#05 2 PLANE ASSY. W/LEGS
EXPLODED VIEW WITH PARTS LIST

REV	ECN	CHG BY	DATE

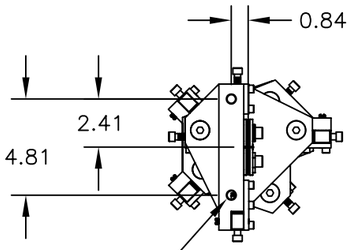
TAK ENTERPRISES

TOLERANCE UNLESS OTHERWISE STATED
∠ ± 3°
⊥ ± 0.0003
◎ ± 0.0002
⌖ ± 0.0005
= ± 0.0005
FRACT +/- 1/16
.X ± .032
.XX ± .015
.XXX ± .005
.XXXX ± .0005

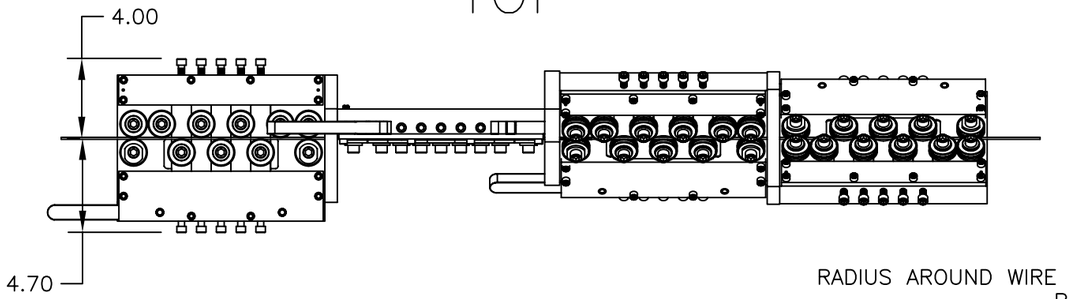
CAD
DWN KPL
CHK
SCALE
DATE 11/6/02

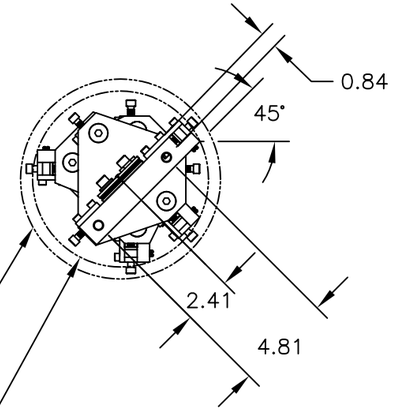
DRAWING / PART NO. 1005-002
PART NAME 2-PLANE QUICK RELEASE #5 PWS
CUSTOMER

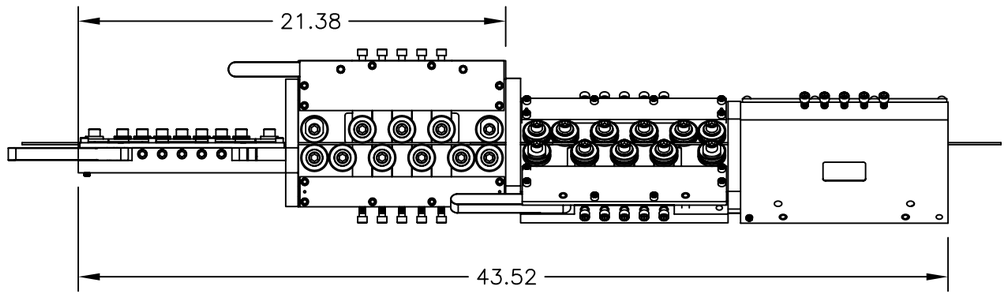
MATERIAL REQ'D.	R.C.



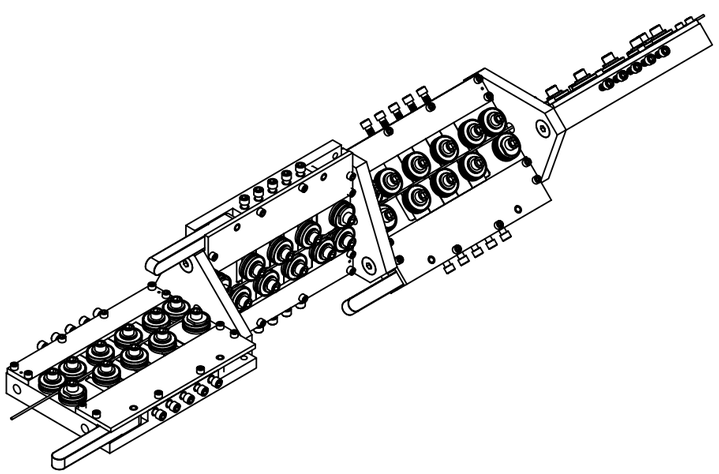
TOP

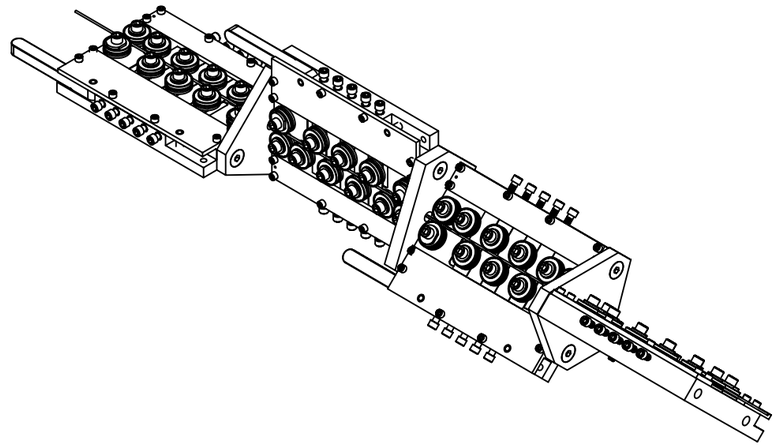






FRONT





REV	ECN	CHG BY	DATE

ALL DIMENSIONS ARE RELATIVE TO WIRE LINE

TAK ENTERPRISES

TOLERANCE UNLESS OTHERWISE STATED			
∠ ± 3°	FRACT +/- 1/16		
⊥ ± 0.0003	.X	± .032	
◎ ± 0.0002	.XX	± .015	
⌖ ± 0.0005	.XXX	± .005	
⏥ ± 0.0005	.XXXX	± .0005	

CAD	
DWN GDH	
CHK	
SCALE	
DATE 042304	

DRAWING / PART NO.
1004–004B

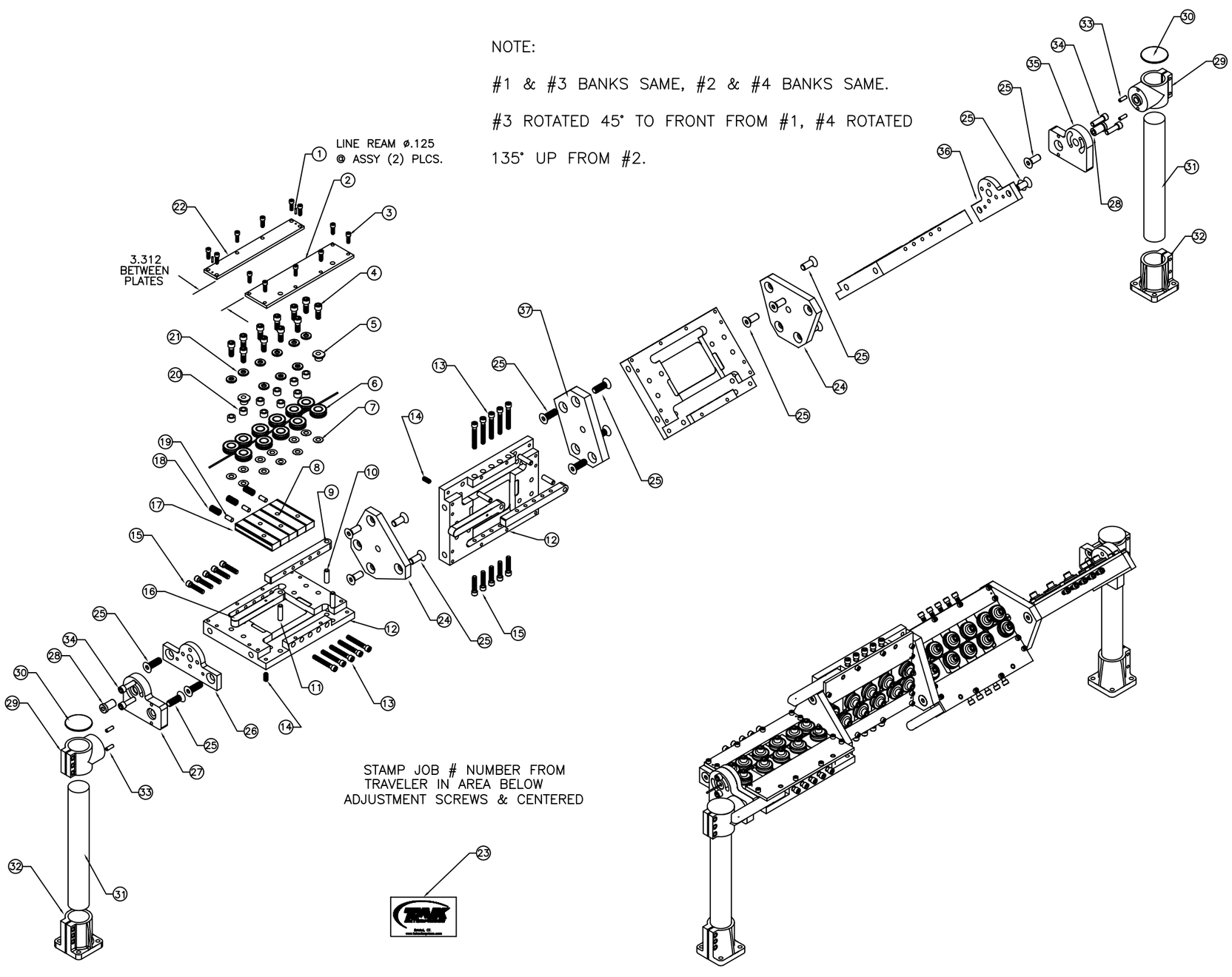
PART NAME
#04 QR PLAIN MOUNTING

CUSTOMER

NOTE:

#1 & #3 BANKS SAME, #2 & #4 BANKS SAME.

#3 ROTATED 45° TO FRONT FROM #1, #4 ROTATED 135° UP FROM #2.



NOTES FOR ASSEMBLY

1. ATTACH PLATE (#2) ONTO HOUSING (#12) FOR ALIGNMENT OF DOWELS. PRESS DOWELS (2 PLCS #11) INTO FRONT OF HOUSING FLUSH TO PLATE. REMOVE PLATE AND PRESS DOWEL (#10) AS SHOWN FOR HANDLE (#16). DOWEL PRESSED TO BE FLUSH WITH HANDLE THICKNESS.
2. WHEN LINE REAMING ROLL PINS, BE SURE LARGE PLATE (#2) IS SECURE AND DIM IS CORRECT BEFORE TIGHTENING PLATE (#22) USE FIXTURE FOR PROPER GAP. AFTER SECURE, CHECK DIM AGAIN. DEBURR AND CLEAN.
3. USE OIL TO LUBRICATE ROLL PLATES (BREAK EDGES #8 & #17) INTO HOUSING (#12).
4. LUBRICATE PIVOT BAR (#9) FOR SMOOTH OPERATION ON TOP AND BOTTOM SURFACES AND IN DOWEL PIN HOLE, USING GREASE.
5. WHEN MARKING THE JOB # FROM TRAVELER ONTO HOUSING BE SURE IT CAN BE READ IN FRONT OF 1ST BANK AND ON TOP OF 2ND BANK.
6. WHEN INSTALLING THE DOWEL PIN (#33) INTO (#30) TOP SUPPORT USE LOCTITE FOR SECURE (ONE SIDE ONLY) #29 IN OVERSIZE HOLES,
7. WHEN INSTALLING THE NAME PLATES BE SURE THEY ARE UPRIGHT AND CAN BE READ PROPERLY.
8. MARK EACH BEARING WITH A WHITE MARK FOR VISUAL TURNING.

ITEM	QTY		DESCRIPTION
37	1	1004–161	3 & 4 PLANE CONNECTOR
36	1	1004–163	INNER PIVOT PLATE EXIT
35	1	1004–162	OUTER PIVOT PLATE EXIT
34	4	9000–147	3/8–16 X 1.25 SHCS PIVOT SLOTS
33	4	9007–041	ø0.250 DOWEL
32	2	9200–100	FOOT SUPPORT
31	2	9200–XXX	TUBE COLUMN
30	2	9200–104	TUBE CAP
29	2	1005–183	TOP PIVOT SUPPORT
28	2	9032–001	GUIDE BUSHING
27	1	1004–182	OUTER PIVOT PLATE ENTRY
26	1	1004–183	INNER PIVOT PLATE ENTRY
25	20	9001–200	1/2–13 X 1.5 FHCS
24	2	1004–160	#1 & #2 BANK CONNECTOR PLATE
23	4	9805–002	NAMEPLATE
22	4	1004–136	ROLL CAP (SMALL)
21	36	9008–100	3/8 ID X 1/8 THK HARD WASHER
20	36	1004–180	INNER BEARING BUSHING
19	12	1004–186	SLUG
18	12	9020–012	ø.072 WIRE X 1–1/4 LONG COMP. SPRING
17	12	1004–131	ROLL PLATE W/HOLE
16	4	1004–178	UNIVERSAL HANDLE
15	20	9000–137	5/16–24 X 1.5 SHCS ADJUSTMENT
14	4	9011–002	5/16–18 BALL PLUNGER
13	20	9000–140	5/16–24 X 2.25 SHCS ADJUSTMENT
12	4	1004–100	HOUSING
11	8	9007–066	3/8 X 1–1/2 STANDARD DOWELS
10	4	9007–065	3/8 X 1–1/4 STANDARD DOWELS
9	4	1004–176	PIVOT BAR
8	8	1004–130	ROLL PLATE (NO HOLE)
7	44	9008–003	SHIM WASHER
6	44	9304–171	BEARING
5	8	1004–190	ECCENTRIC BEARING COLLAR
4	44	9000–146	3/8–16 X 1.0 SHCS
3	48	9000–090	1/4–20 X .75 SHCS ROLL CAP
2	4	1004–138	LARGE ROLL CAP
1	8	9007–237	ROLL PINS

MATERIAL REQ'D. | R.C.

#04 4 PLANE ASSY. W/LEGS
EXPLODED VIEW WITH PARTS LIST

REV	ECN	CHG BY	DATE

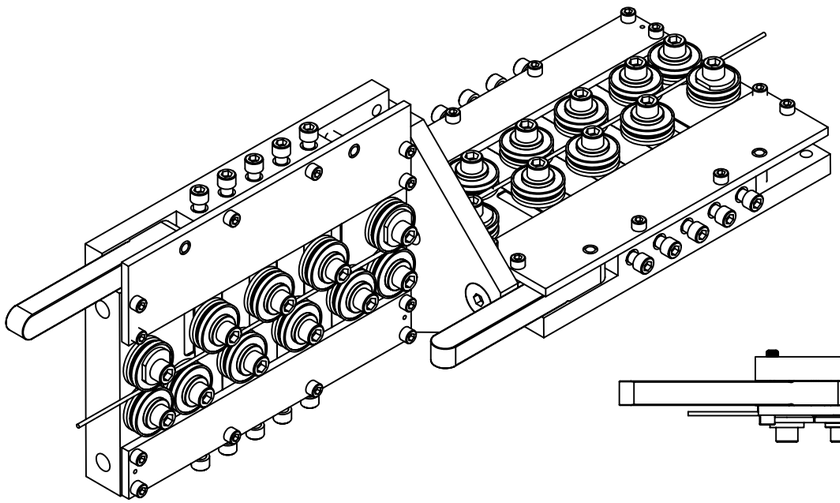
TAK ENTERPRISES

TOLERANCE UNLESS OTHERWISE STATED
∠ ± 3'
⊥ ± 0.0003
◎ ± 0.0002
⌖ ± 0.0005
= ± 0.0005
FRACT +/– 1/16
.X ± .032
.XX ± .015
.XXX ± .005
.XXXX ± .0005

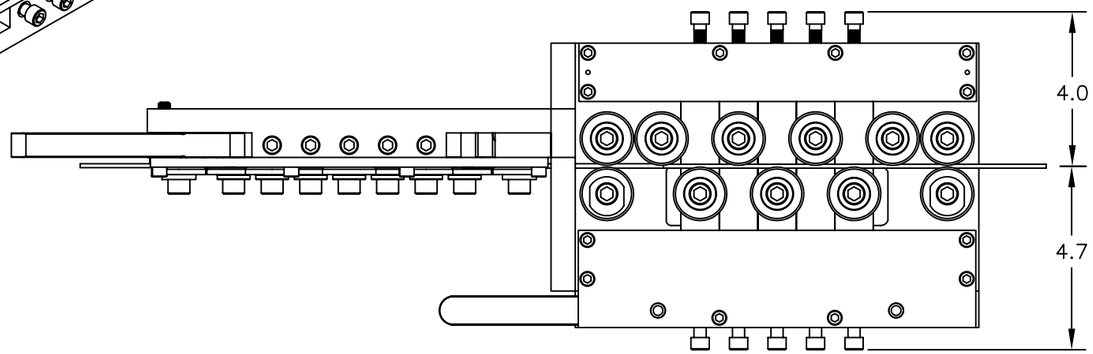
CAD
DWN KPL
CHK
SCALE
DATE 11/15/02

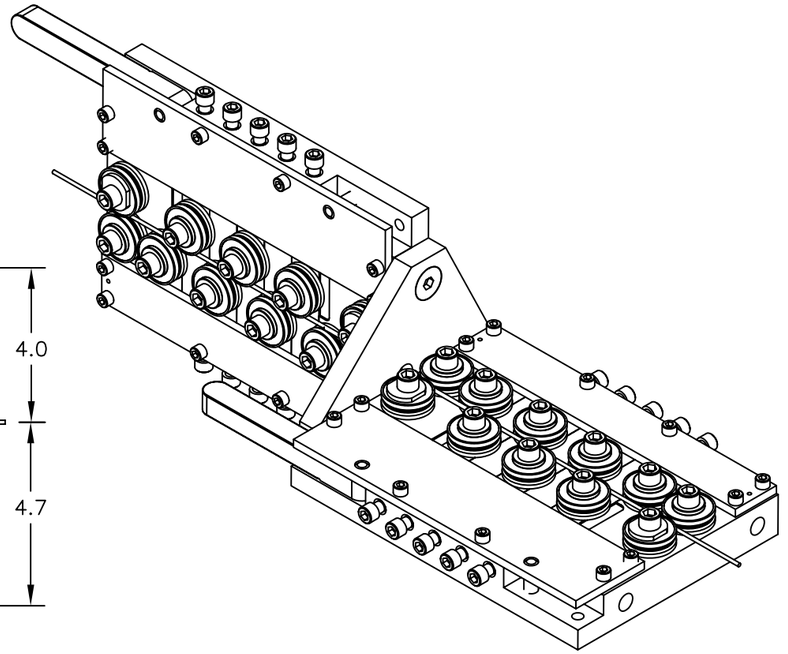
DRAWING / PART NO. 1004–004
PART NAME #4 PWS 4–PLANE ASSY
CUSTOMER QUICK RELEASE

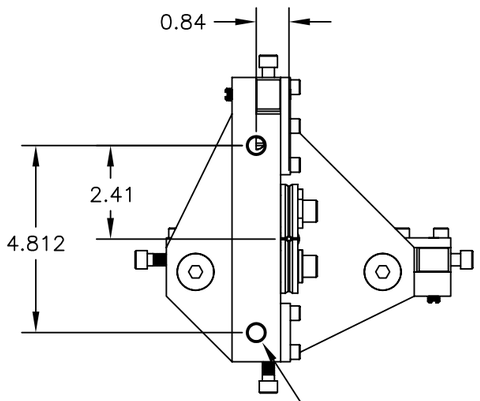
MATL.	R.C.	PART NAME

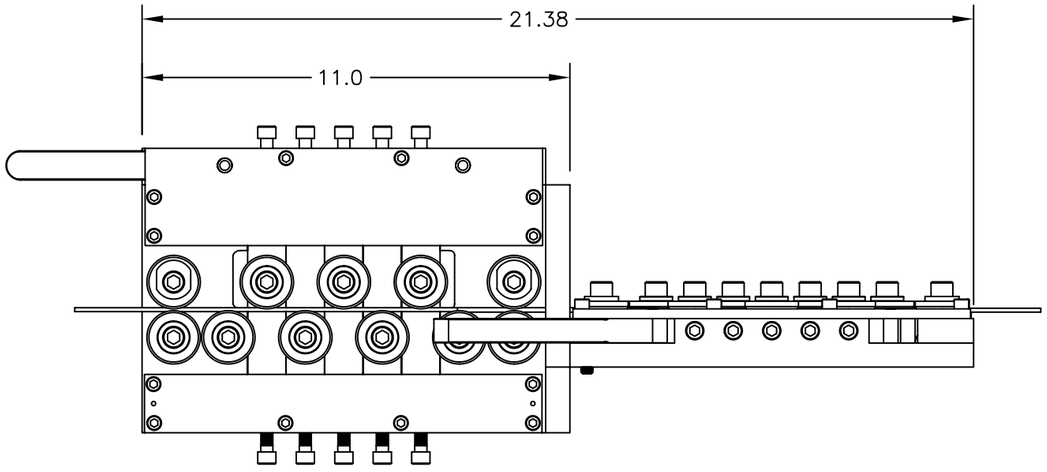


TOP

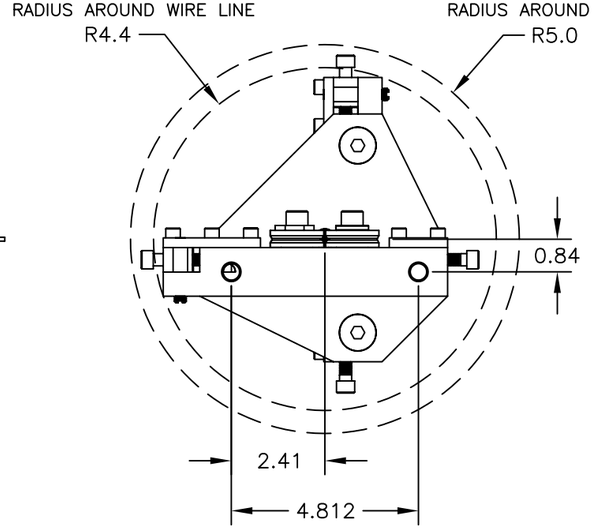








FRONT



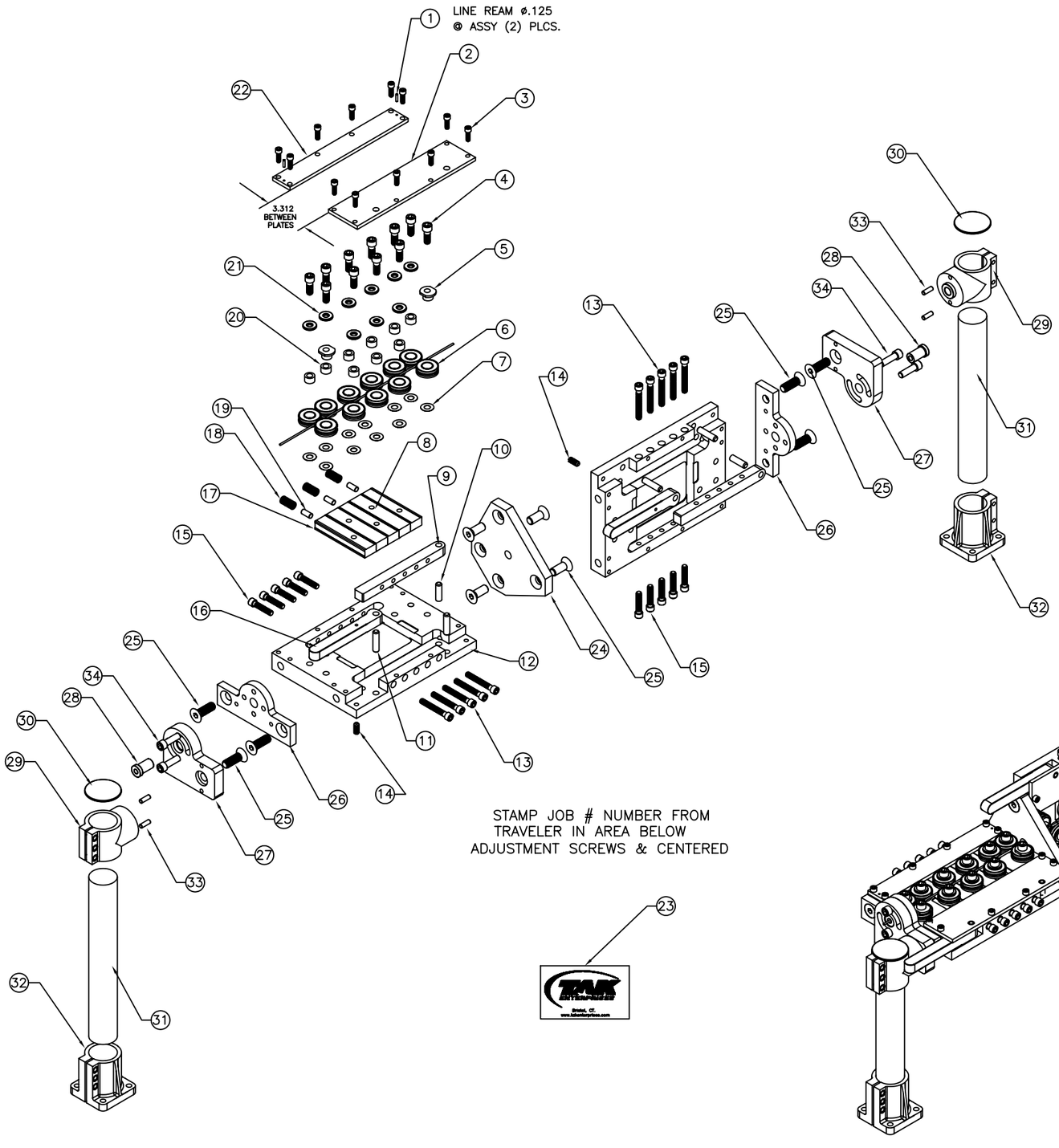
REV	ECN	CHG BY	DATE

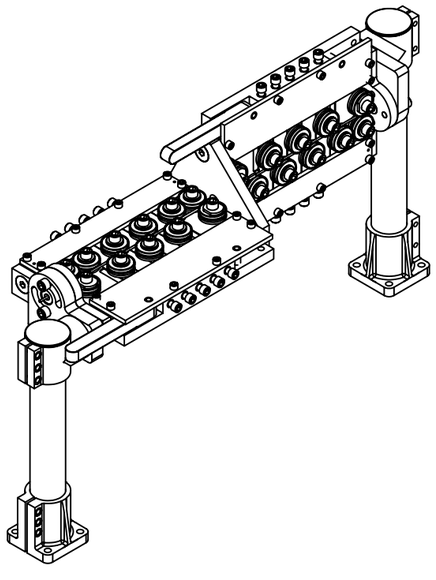
ALL DIMENSIONS ARE RELATIVE TO WIRE LINE

TOLERANCE UNLESS OTHERWISE STATED
∠ ± 3° FRACT +/- 1/16
⊥ ± 0.0003 .X ± .032
◎ ± 0.0002 .XX ± .015
⌖ ± 0.0005 .XXX ± .005
= ± 0.0005 .XXXX ± .0005

CAD
DWN GDH
CHK
SCALE
DATE 012004

DRAWING / PART NO. 1004–002B
PART NAME #04 QR PLAIN MOUNTING
CUSTOMER





NOTES FOR ASSEMBLY

1. PRESS DOWEL #10 & #11 INTO HOUSING #12 WITH PLATE #2 ON FOR ALIGNMENT OF #10. INSTALL #11 ON OPPOSITE END FOR HANDLE #16. HANDLE TO BE OPPOSITE OF FIRST BANK AND DOWEL FLUSH TO TOP OF THE HANDLE.
2. WHEN LINE REAMING ROLL PINS, BE SURE LARGE PLATE #2 IS SECURE AND DIM IS CORRECT BEFORE TIGHTENING #22, SMALL PLATE. AFTER SECURE CHECK DIM AGAIN. DEBURR AND CLEAN.
3. USE OIL TO LUBRICATE ROLL PLATES #8 & #17 INTO HOUSING.
4. LUBRICATE BAR #9 FOR SMOOTH OPERATION ON TOP AND BOTTOM SURFACES AND IN DOWEL PIN HOLE.
5. WHEN MARKING THE JOB # FROM TRAVELER ONTO HOUSING BE SURE IT CAN BE READ IN FRONT OF 1ST BANK AND ON TOP OF 2ND.
6. WHEN INSTALLING THE DOWEL PIN #33 INTO #30 TOP SUPPORT USE LOCTITE FOR SECURE FIT IN OVERSIZE HOLES, ONE SIDE ONLY #29.
7. WHEN INSTALLING THE NAME PLATES BE SURE THEY ARE UPRIGHT AND CAN BE READ PROPERLY.
8. MARK EACH BEARING WITH A WHITE MARK FOR VISUAL TURNING.
9. LEG ASSY IS THE SAME FOR BOTH ENDS ON 2PLANE ONLY. FOR 4PLANE ASSY. EXIT SIDE HAS DIFFERENT INNER & OUTER PIVOT PLATE.

MATERIAL REQ'D.	R.C.

ITEM	QTY		DESCRIPTION
34	4	9000-147	3/8-16 X 1.25 SHCS
33	4	9007-041	ø0.250 DOWEL
32	2	9200-100	FOOT SUPPORT
31	2	9200-XXX	TUBE COLUMN
30	2	9200-104	TUBE CAP
29	2	1005-183	TOP PIVOT SUPPORT
28	2	9032-001	GUIDE BUSHING
27	2	1004-182	OUTER PIVOT PLATE ENTRY
26	2	1004-183	INNER PIVOT PLATE ENTRY
25	10	9001-200	1/2-13 X 1.5 FHCS
24	1	1004-160	#1 & #2 BANK CONNECTOR PLATE
23	2	9805-002	NAMEPLATE
22	2	1004-136	ROLL CAP (SMALL)
21	18	9008-100	3/8 ID X 1/8 THK HARD WASHER
20	18	1004-180	INNER BEARING BUSHING
19	6	1004-186	SLUG
18	6	9020-012	ø.072 WIRE X 1-1/4 LONG COMP. SPRING
17	6	1004-131	ROLL PLATE W/HOLE
16	2	1004-178	UNIVERSAL HANDLE
15	10	9000-137	5/16-24 X 1.5 SHCS ADJUSTMENT
14	2	9011-002	5/16-18 BALL PLUNGER
13	10	9000-140	5/16-24 X 2.25 SHCS ADJUSTMENT
12	2	1004-100	HOUSING
11	4	9007-066	3/8 X 1-1/2 STANDARD DOWELS
10	2	9007-065	3/8 X 1-1/4 STANDARD DOWELS
9	2	1004-176	PIVOT BAR
8	4	1004-130	ROLL PLATE (NO HOLE)
7	22	9008-003	SHIM WASHER
6	22	9304-171	BEARING
5	4	1004-190	ECCENTRIC BEARING COLLAR
4	22	9000-046	3/8-16 X 1.0 SHCS BEARING
3	24	9000-090	1/4-20 X .75 SHCS ROLL CAP
2	2	1004-138	LARGE ROLL CAP
1	4	9007-237	ROLL PINS

#04 2 PLANE ASSY. W/LEGS
EXPLODED VIEW WITH PARTS LIST

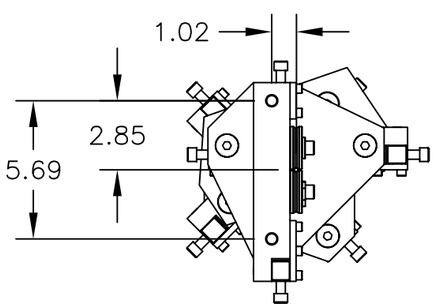
REV	ECN	CHG BY	DATE

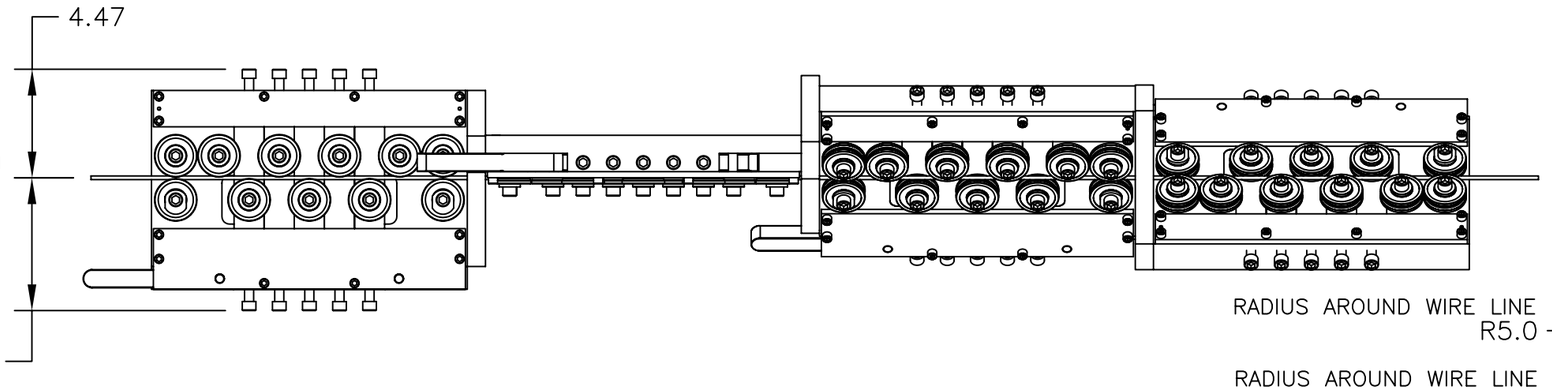
TOLERANCE UNLESS OTHERWISE STATED
∠ ± 3°
⊥ ± 0.0003
◎ ± 0.0002
⌖ ± 0.0005
= ± 0.0005
FRACT +/- 1/16
.X ± .032
.XX ± .015
.XXX ± .005
.XXXX ± .0005

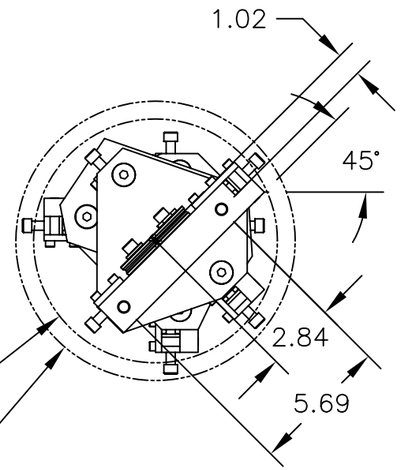
CAD
DWN KPL
CHK
SCALE
DATE 11/14/02

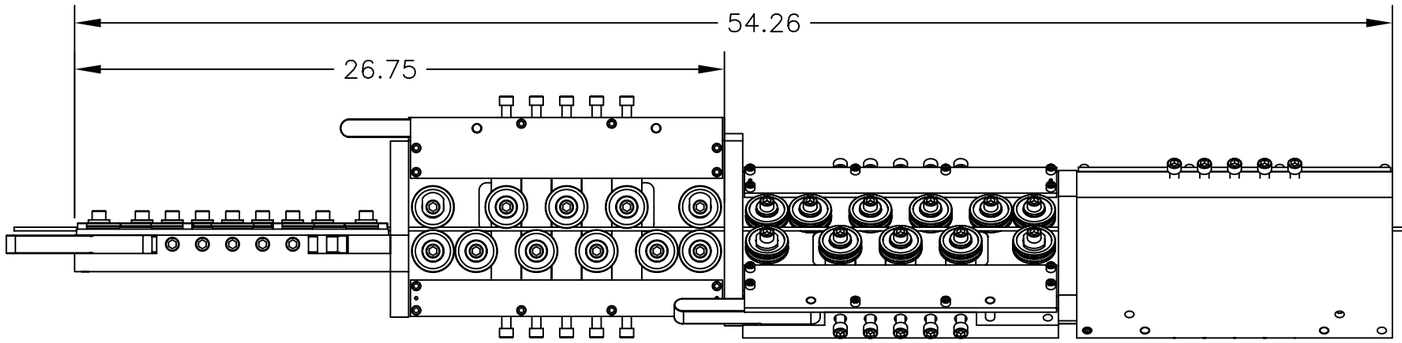
DRAWING / PART NO. 1004-002
PART NAME #4 PWS 2-PLANE ASSY
CUSTOMER QUICK RELEASE

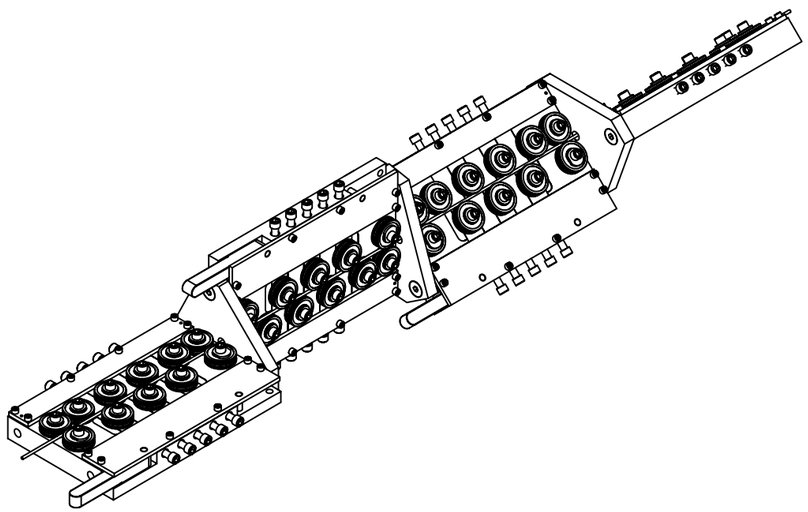
MATERIAL REQ'D.	R.C.

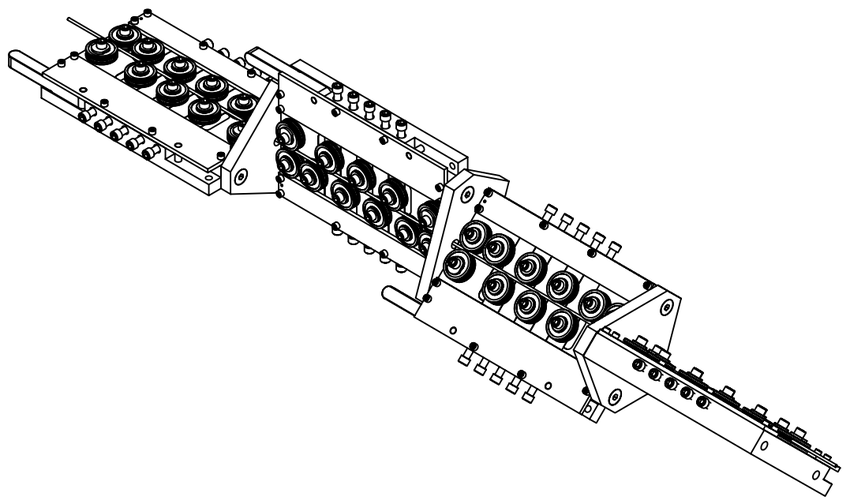












REV	ECN	CHG BY	DATE

ALL DIMENSIONS ARE RELATIVE TO WIRE LINE

TAK ENTERPRISES

TOLERANCE UNLESS OTHERWISE STATED			
∠ ± 3°	FRACT +/- 1/16		
⊥ ± 0.0003	.X ± .032		
◎ ± 0.0002	.XX ± .015		
⌖ ± 0.0005	.XXX ± .005		
= ± 0.0005	.XXXX ± .0005		

CAD	
DWN GDH	
CHK	
SCALE	
DATE 042304	

DRAWING / PART NO.
1005-004B
PART NAME
#05 QR PLAIN MOUNTING
CUSTOMER

WARNING

The operator of the equipment offered herein must not be in or near the point-of–operation of any such machine or operating parts of any equipment installed on a machine, or bodily injury could result. The EMPLOYER must conspicuously display adequate warning signs on the machine with proper warnings for the machine and the specific application to which the machine and equipment are being applied.

OSHA Sections 1910.147, 1910.211, 1910.212 and 1910.217 contain installation information on the required distance between danger points and point-of-operation guards and devices. No specific references have been made to which paragraph of OSHA 1910.147, 1910.211, 1910.211, 1910.217 or any other applicable sections because the paragraphs may change with each edition of the publications of OSHA provisions.

All equipment manufactured by TAK Enterprises is designed to meet the construction standards of OSHA in effect at the time of sale, however, the EMPLOYER ultimately installs the equipment and is therefore responsible for installation, use, application, training and maintenance, as well as ensuring that adequate warning signs are visible on the machine onto which the equipment will be installed.

OSHA states that the EMPLOYER must ensure that safe operating methods designed to control or eliminate hazards to operating personnel are developed and employed, and that operators are trained in safe operation of the equipment.

It shall be the responsibility of the EMPLOYER to establish and follow a program of periodic and regular inspections and maintenance of machinery to insure that all their parts, auxiliary equipment and safeguards are in a safe operating condition and adjustment. Each machine should be inspected and tested no less than weekly to determine and confirm that the operating condition of the machine meets safety standards. Necessary maintenance or repairs to machinery, auxiliary equipment and safeguards shall be performed and completed before the machine is operated. The EMPLOYER shall maintain accurate records of these inspections and maintenance work performed.

It is not the responsibility of TAK Enterprises to provide notification to the user of this equipment concerning future changes in State or Federal laws, or construction standards.

SAFETY PROGRAM

Accident free operation will result from a well developed, management sponsored and enforced safety program.
Of vital importance to the success of a safety program is the proper selection of guards and devices. However, there is no safety device that will insure “automatic” or “fool proof” safety to your operation.

Of equal importance to the proper selection of machine guards and devices is effective training of operating personnel. Each individual must be trained in the proper operation in accordance with established standards developed for the guards or safety devices employed, with emphasis on why specific guards and safety devices have been provided on the equipment. Rules for safe operation should be in writing, available to company personnel and enforced at all times.

An effective safety program must include regularly scheduled inspections and maintenance of all equipment, with accurate records to reflect the successful completion of inspections and maintenance.

To ensure that a safe working environment is maintained at all times, management, supervisors, safety engineers and all production employees must assume their proper share of responsibility to establish and maintain an effective safety program. All members of the company community should be involved so that an accurate view of the specific areas within the facility that require attention are addressed.

To assist you in the development of and maintenance of an effective safety program, many trade groups and safety related organizations provide guidelines and recommendations that are available to you. However, you must know when and how to apply these guidelines. The equipment manufacturers provide information to assist you in properly adjusting and maintaining your equipment. It is recommended that the employer comply with these guidelines at all times.