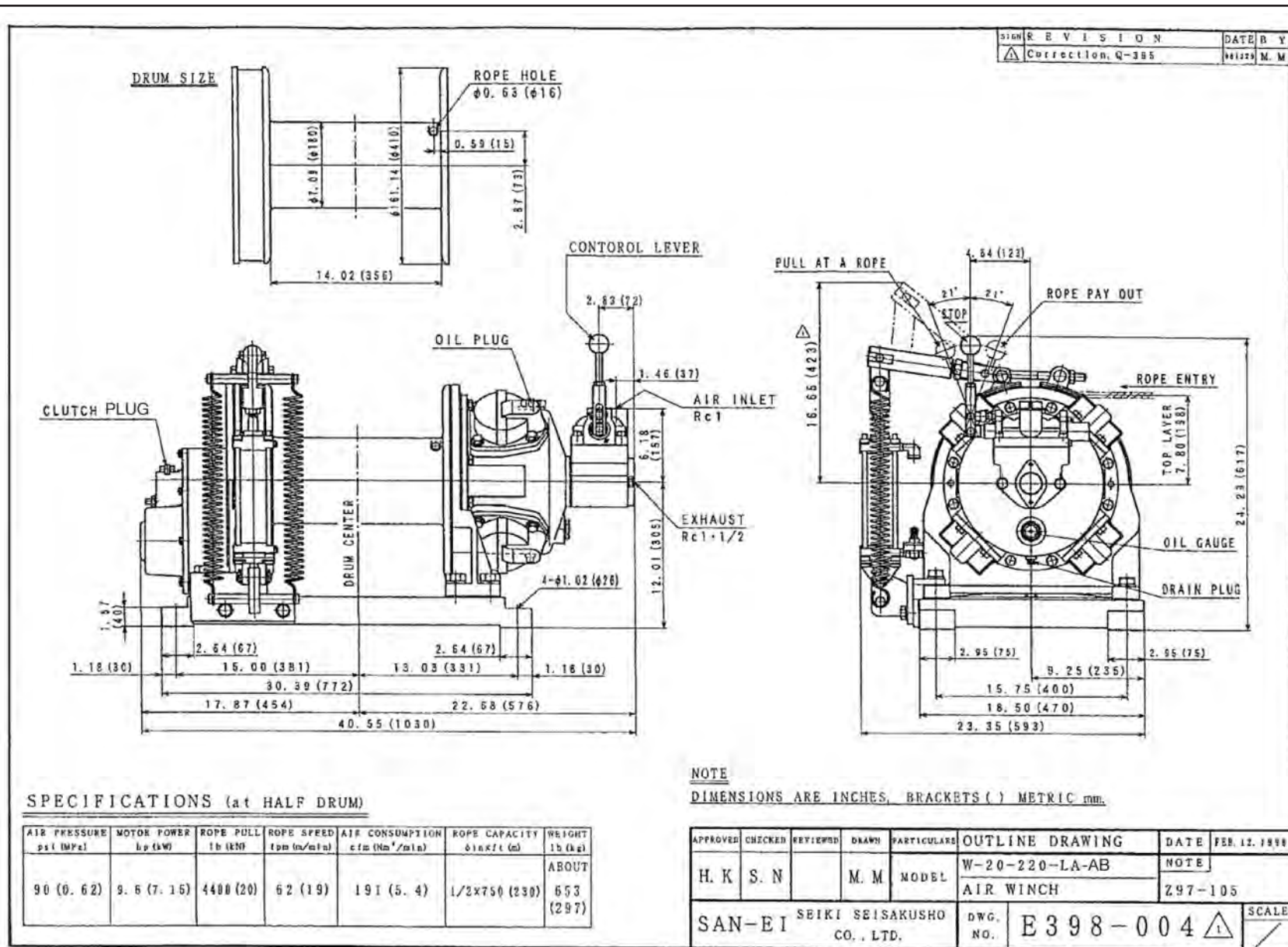




**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**

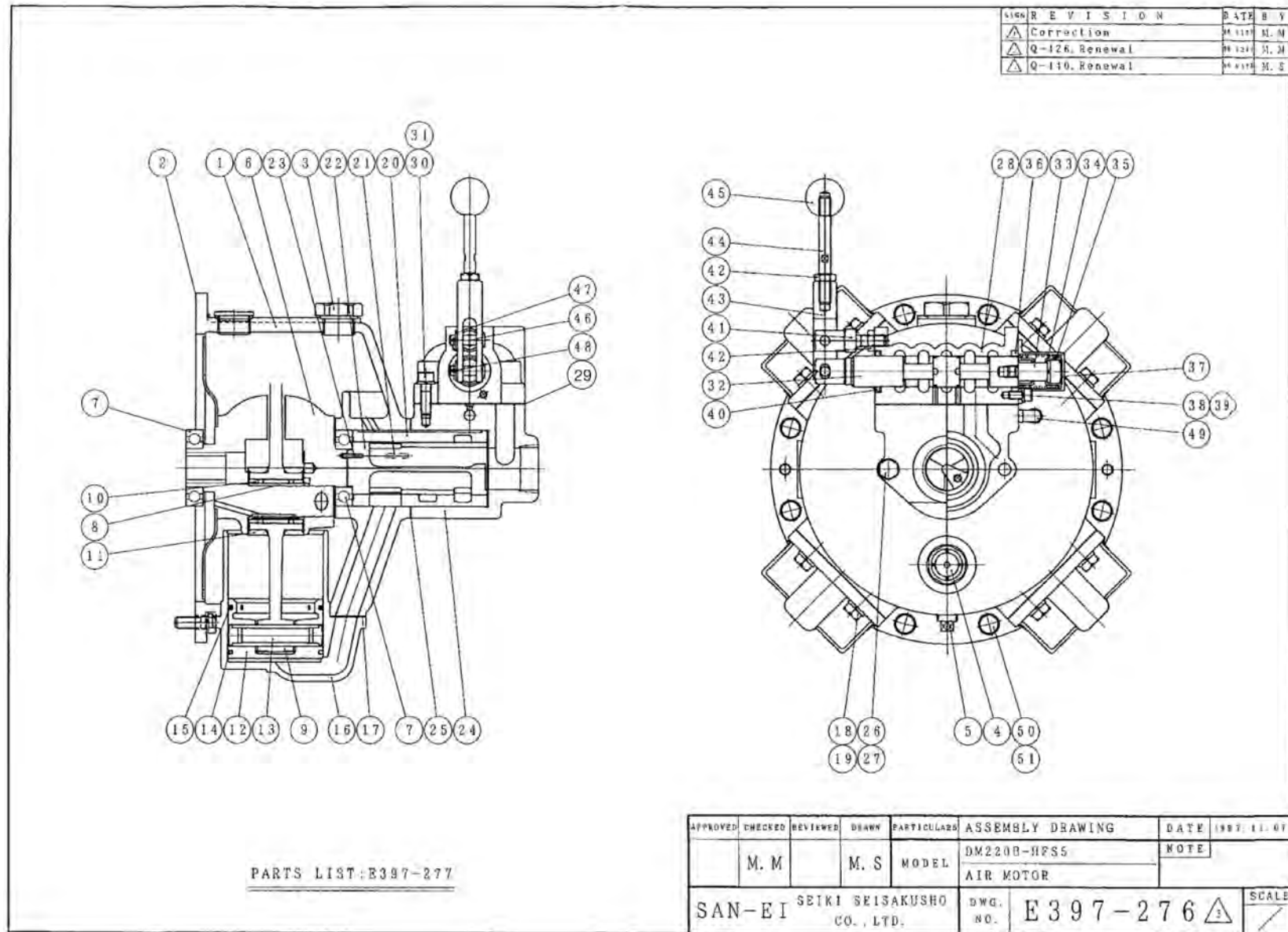




**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**





**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**

| SIGNATURE     |            |                       |      |         | DATE  |            |                       |     |           |
|---------------|------------|-----------------------|------|---------|-------|------------|-----------------------|-----|-----------|
| Q110, Renewal |            |                       |      |         | M. S. |            |                       |     |           |
| No.           | PARTNO.    | PARTS NAME            | QTY  | REMARKS | No.   | PARTNO.    | PARTS NAME            | QTY | REMARKS   |
| 1             | E397-2741  | Crank Case            | 1    |         | 31    | SW1-10     | Spring Washer         | 5   | 10 (Cap)  |
| 2             | E397-2742  | Crank Case Packing    | 1    |         | 32    | E397-27432 | Spool                 | 1   |           |
| 3             | E397-2803  | Oil Plug              | 1    |         | 33    | E397-27433 | Spool End             | 1   |           |
| 4             | E397-2804  | Oil Gauge             | 1    |         | 34    | E397-27434 | Spring                | 1   |           |
| 5             | E397-2745  | Plug                  | 1    | 1/2B    | 35    | E397-27435 | Spring Seat           | 1   |           |
| 6             | E397-2746  | Crank Complete        | 1Set |         | 36    | E397-27436 | Spacer                | 1   |           |
| 7             | E397-2747  | Ball Bearing          | 2    | 6208    | 37    | E397-27437 | Cover                 | 1   |           |
| 8             | E397-2748  | Shaft Sleeve          | 1    |         | 38    | CS-816     | Hex. Socket Cap Screw | 2   | M8x16     |
| 9             | E397-2749  | Connecting Rod        | 4    |         | 39    | E397-27022 | Spring Washer         | 2   | 8         |
| 10            | E397-27410 | Rod Bearing           | 1    |         | 40    | E397-27440 | Dust Seal             | 1   |           |
| 11            | E397-27411 | Rod Ring              | 2    |         | 41    | E397-27441 | Support Bolt          | 1   |           |
| 12            | E397-27412 | Piston                | 4    |         | 42    | E397-27442 | Hex. Nut              | 2   | M12-3     |
| 13            | E397-27413 | Piston Pin            | 4    |         | 43    | E397-27443 | Lever Support         | 1   |           |
| 14            | E397-27414 | Piston Ring           | 4    |         | 44    | E397-27444 | Control Lever         | 1   |           |
| 15            | E397-27415 | Oil Ring              | 4    |         | 45    | E397-27445 | Knob                  | 1   |           |
| 16            | E397-27416 | Cylinder              | 4    |         | 46    | E397-27446 | Lever Pin             | 2   |           |
| 17            | E397-27417 | Cylinder Packing      | 4    |         | 47    | E397-27447 | Plane Washer          | 2   | 10        |
| 18            | E397-27418 | Hex. Bolt             | 16   | M12x30  | 48    | SNP-3.220  | Split Pin             | 2   | ø3.2x20   |
| 19            | E397-28021 | Spring Washer         | 16   | 12      | 49    | E397-28059 | Copper Tube Joint     | 1   | B-8-PT1/4 |
| 20            | E397-27420 | Valve Sleeve          | 1    |         | 50    | E397-27450 | Hex. Bolt             | 8   | M12x35    |
| 21            | E397-27421 | Key                   | 1    | 5x5x23  | 51    | SW2-12     | Spring Washer         | 8   | 12        |
| 22            | E397-27422 | Rotary Valve          | 1    |         |       |            |                       |     |           |
| 23            | SNP-420    | Spring Pin            | 1    | ø4x20   |       |            |                       |     |           |
| 24            | E397-27424 | Valve Chest           | 1    |         |       |            |                       |     |           |
| 25            | E397-27425 | Valve Chest Packing   | 1    |         |       |            |                       |     |           |
| 26            | E397-27426 | Hex. Bolt             | 2    | M12x140 |       |            |                       |     |           |
| 27            | SW2-12     | Spring Washer         | 2    | 12      |       |            |                       |     |           |
| 28            | E397-27428 | Valve Body            | 1    |         |       |            |                       |     |           |
| 29            | E397-27429 | Valve Body Packing    | 1    |         |       |            |                       |     |           |
| 30            | E397-27430 | Hex. Socket Cap Screw | 5    | M10x35  |       |            |                       |     |           |

ASSEMBLY DRAWING: E397-276

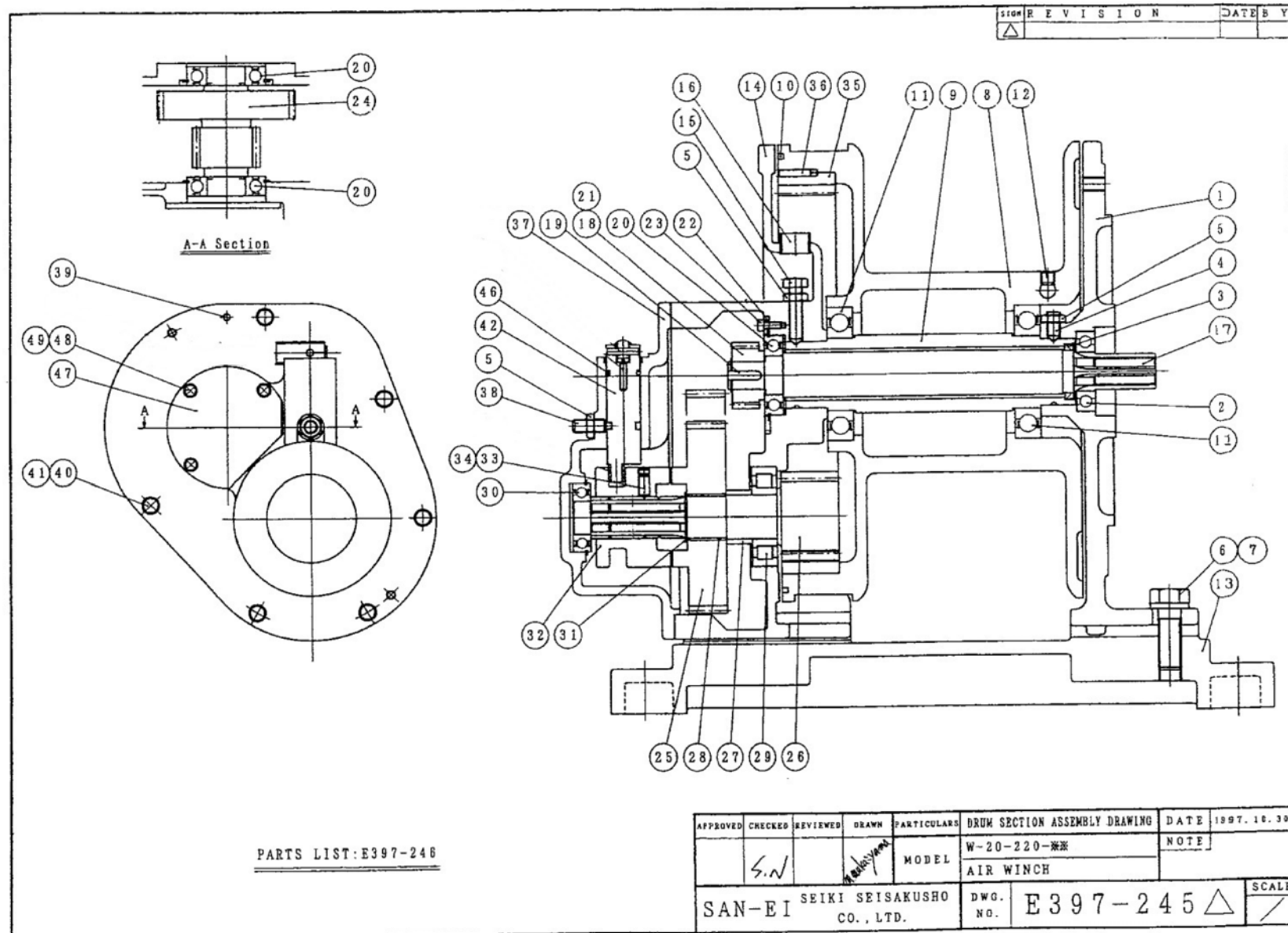
|                                   |         |          |       |             |             |              |       |
|-----------------------------------|---------|----------|-------|-------------|-------------|--------------|-------|
| APPROVED                          | CHECKED | REVIEWED | DRAWN | PARTICULARS | PARTS LIST  | DATE         | NOTE  |
|                                   | M. M    |          | M. S  | MODEL       | DM220B-HFSS | 1997. 11. 07 |       |
|                                   |         |          |       |             | AIR MOTOR   |              |       |
| SAN-EI SEIKI SEISAKUSHO CO., LTD. |         |          |       |             | DWG. NO.    | E397-277     | SCALE |



**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**





**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**

| SIGNATURE |             |                      |      |          | REVISION   |               |                      |     |           | DATE |  |
|-----------|-------------|----------------------|------|----------|------------|---------------|----------------------|-----|-----------|------|--|
|           |             |                      |      |          | Correction |               |                      |     |           | Y    |  |
|           |             |                      |      |          |            |               |                      |     |           | M.M. |  |
| No.       | PART NO.    | PARTS NAME           | QTY  | REMARKS  | No.        | PART NO.      | PARTS NAME           | QTY | REMARKS   |      |  |
| 1         | E397-2451   | Crank Case Cover     | 1    |          | 31         | E397-24531    | Retaining Ring       | 1   | S35       |      |  |
| 2         | E397-2452   | Ball Bearing         | 1    | 6207     | 32         | E397-24532    | Clutch               | 1   |           |      |  |
| 3         | E397-2453   | Oil Seal             | 1    | SC38508  | 33         | E397-24533    | Plunger              | 1   | PBF-10-KS |      |  |
| 4         | E397-2454   | Hex.Socket Set Screw | 1    | M12x30   | 34         | E397-24534    | Hex.Socket Set Screw | 1   | M10x10    |      |  |
| 5         | E397-27442  | Hex.Nut              | 3    | M12-3    | 35         | E397-24535    | Internal Gear        | 1   |           |      |  |
| 6         | E397-2456   | Hex.Bolt             | 8(6) | M20x60   | 36         | NP-630        | Parallel Pin         | 2   | ø6x30     |      |  |
| 7         | E397-2457   | Spring Washer        | 8(6) | 20       | 37         | E397-24537    | Gear Case Cover      | 1   |           |      |  |
| 8         | E397-2458L  | Drum (Long)          | 1    |          | 38         | E397-24538    | Plunger              | 1   | SP12-1    |      |  |
| 9         | E397-2459L  | Drum Shaft(Long)     | 1    |          | 39         | SNP-628       | Spring Pin           | 2   | ø6x28     |      |  |
| 10        | E397-24510  | Packing              | 1    |          | 40         | E302-11135    | Hex. Bolt            | 7   | M8x25     |      |  |
| 11        | E397-24511  | Ball Bearing         | 2    | 6213Z2   | 41         | SW2-8         | Spring Washer        | 7   | 8         |      |  |
| 12        | E397-24512  | Hex.Socket Set Screw | 1    | M12x12   | 42         | E397-24542CEP | Clutch Plug          | 1   |           |      |  |
| 13        | E397-24513L | Bed (Long)           | 1    |          | 43         |               |                      | 1   |           |      |  |
| 14        | E397-24514  | Gear Case            | 1    |          | 44         |               |                      | 1   |           |      |  |
| 15        | E397-24515  | Drum Shaft Set Bolt  | 1    |          | 45         |               |                      | 1   |           |      |  |
| 16        | PHP-T50     | Hex.Socket Plug      | 1    | 3/4B     | 46         | OR-P24        | O Ring               | 1   | P24       |      |  |
| 17        | E397-24517L | Motor Shaft(Long)    | 1    |          | 47         | E397-24547    | Cover                | 1   |           |      |  |
| 18        | E397-24518  | First Pinion         | 1    |          | 48         | E397-27049    | Hex. Bolt            | 3   | M6x20     |      |  |
| 19        | E397-24519  | Key                  | 1    | 8x7x27   | 49         | E397-27050    | Spring Washer        | 3   | 6         |      |  |
| 20        | E397-24520  | Ball Bearing         | 3    | 6207ZZNR |            |               |                      |     |           |      |  |
| 21        | E302-10512  | Retaining Ring       | 1    | S25      |            |               |                      |     |           |      |  |
| 22        | E397-24522  | Bearing Support      | 1    |          |            |               |                      |     |           |      |  |
| 23        | CS-616      | Hex.Socket Cap Screw | 3    | M6x16    |            |               |                      |     |           |      |  |
| 24        | E397-24524  | Second Pinion        | 1    |          |            |               |                      |     |           |      |  |
| 25        | E397-24525  | Second Gear          | 1    |          |            |               |                      |     |           |      |  |
| 26        | E397-24526  | Third Pinion         | 1    |          |            |               |                      |     |           |      |  |
| 27        | E397-24527  | Collar               | 1    |          |            |               |                      |     |           |      |  |
| 28        | E397-24528  | Gear Bushing         | 1    | R-ML4030 |            |               |                      |     |           |      |  |
| 29        | E397-24529  | Roller Bearing       | 1    | NJ308E   |            |               |                      |     |           |      |  |
| 30        | E397-24530  | Ball Bearing         | 1    | 6206ZZNR |            |               |                      |     |           |      |  |

NOTE: Bracket ( ) are Model; W-20-220-※C-AB

ASSEMBLY DRAWING: E397-245

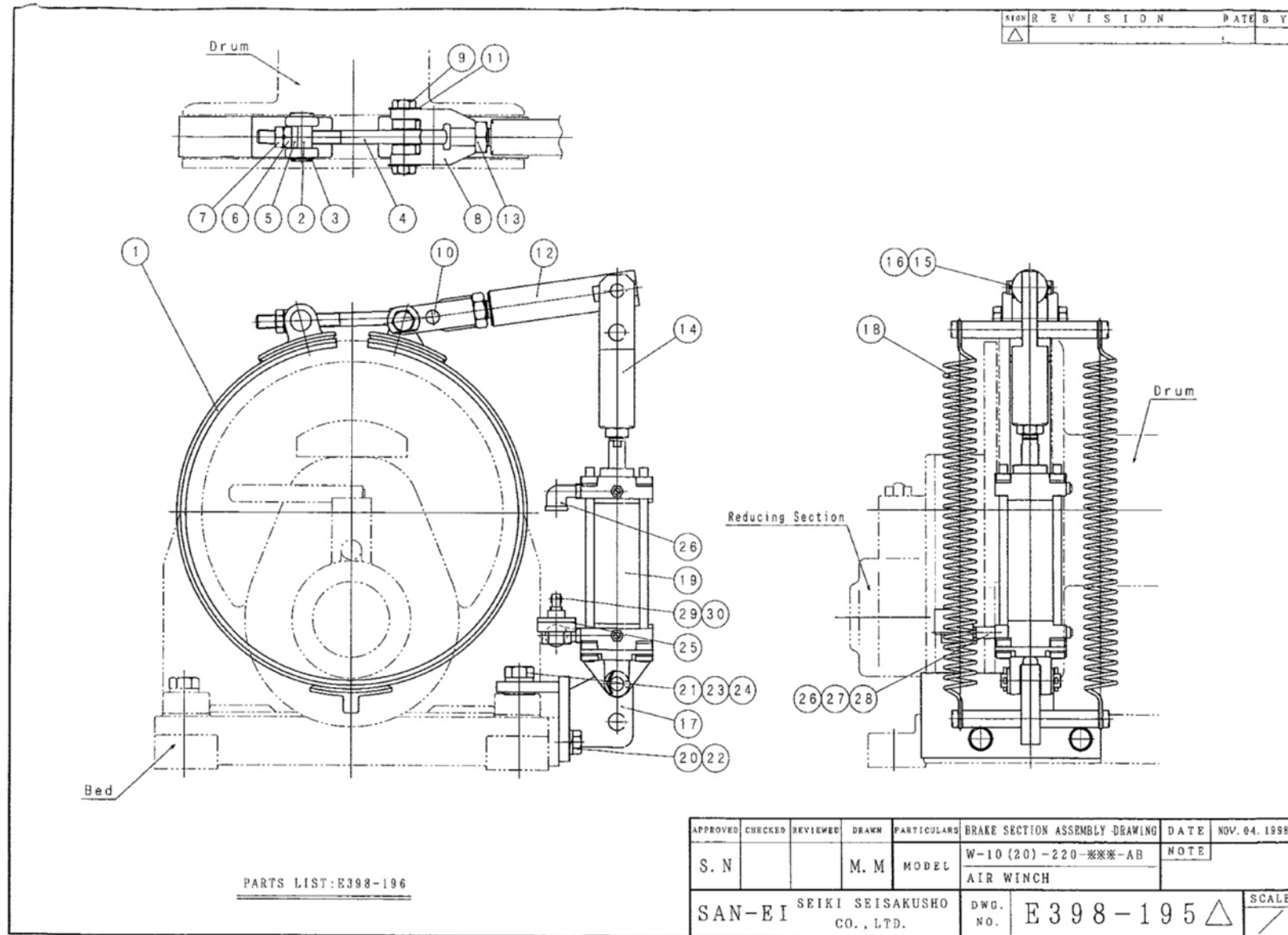
| APPROVED                          | CHECKED | REVIEWED | DRAWN | PARTICULARS | DRUM SECTION PARTS LIST | DATE     | 1997. 12. 28 |
|-----------------------------------|---------|----------|-------|-------------|-------------------------|----------|--------------|
|                                   | S.W.    |          |       | MODEL       | W-20-220-※C-AB          | NOTE     |              |
|                                   |         |          |       |             | AIR WINCH               |          |              |
| SAN-EI SEIKI SEISAKUSHO CO., LTD. |         |          |       |             | DWG. NO.                | E397-246 | SCALE        |



**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**





**MICHIGAN PNEUMATIC TOOL, INC.**

**MP-W20220LAAB**

**4400 lb. Long Drum Winch w/ Auto Brake**

| SHOW | REVISION          | DATE     | BY   |
|------|-------------------|----------|------|
| △    | Correction, Q-395 | 01/12/98 | M. H |

| No. | PART NO.   | PARTS NAME          | QTY | REMARKS | No. | PART NO.   | PARTS NAME          | QTY | REMARKS         |
|-----|------------|---------------------|-----|---------|-----|------------|---------------------|-----|-----------------|
| 1   | E397-2571  | Brake Assembly      | 1   | Set     | 19  | E398-19519 | Air Cylinder        | 1   | CA1DPN63-150N △ |
| 2   | E397-2572  | Brake Pin           | 1   |         | 20  | E302-1116  | Hex. Bolt           | 2   | M16x40          |
| 3   | E397-25712 | Retaining Ring      | 1   | S25     | 21  | E398-19521 | Hex. Bolt           | 2   | M20x75          |
| 4   | E397-2574  | Adjuster Bolt       | 1   |         | 22  | E302-1117  | Spring Washer       | 2   | i6              |
| 5   | E397-2573  | Distance Piece      | 1   |         | 23  | E397-2457  | Spring Washer       | 2   | 20              |
| 6   | E397-2575  | Hex. Nut            | 1   | M16     | 24  | E398-19524 | Plain Washer        | 2   | 20              |
| 7   | E397-2576  | Hex. Nut            | 1   | M16-3   | 25  | E397-25522 | Quick Exhaust Valve | 1   | AQ2000-02       |
| 8   | E397-2577  | Brake Lever Block   | 1   |         | 26  | 5502-6     | Street Elbow        | 2   | 3/8B            |
| 9   | E397-2579  | Lever Pin           | 2   |         | 27  | PF20964    | Bushing             | 1   | 1/4x3/8B        |
| 10  | E397-2578  | Parallel Pin        | 1   | φ16x85  | 28  | H0404      | Pipe                | 1   | 3Ax50mm         |
| 11  | E397-25710 | Lock Washer         | 2   | 16      | 29  | E397-28059 | Copper Tube Joint   | 1   | B-8-PT1/4       |
| 12  | E398-19512 | Brake Lever         | 1   |         | 30  | E398-19530 | Copper Tube         | 1   | m φ8            |
| 13  | E397-25510 | Hex. Nut            | 1   | M24-3   |     |            |                     |     |                 |
| 14  | E398-19514 | Cylinder Connection | 1   |         |     |            |                     |     |                 |
| 15  | E398-19515 | Cylinder Pin        | 1   |         |     |            |                     |     |                 |
| 16  | E398-19516 | Split Pin           | 2   | φ4x32   |     |            |                     |     |                 |
| 17  | E398-19517 | Cylinder Bracket    | 1   |         |     |            |                     |     |                 |
| 18  | E398-19518 | Brake Spring        | 2   |         |     |            |                     |     |                 |

\*Not pictured

Model number with guard: **MP-W20220LAABG**

Guard Part Number: **E398-003G**

Model number with pendant: **MP-W20220LPAB**

Pendant Part Number: **E302-138PC**

Model number with guard & pendant: **MP-W20220LPABG**

Guard Part Number: **E398-003G**

Pendant Part Number: **E302-138PC**

ASSEMBLY DRAWING: E398-195

| APPROVED | CHECKED          | REVIEWED | DRAWN | PARTICULARS | BRAKE SECTION PARTS LIST | DATE  | NOV. 04. 1998 |
|----------|------------------|----------|-------|-------------|--------------------------|-------|---------------|
| S. N     |                  |          | M. M  | MODEL       | W-10 (20) - 220-***-AB   | NOTE  |               |
|          |                  |          |       |             | AIR WINCH                |       |               |
| SAN-EI   | SEIKI SEISAKUSHO |          |       |             | DWG. NO. E398-196 △      | SCALE | /             |
|          | CO., LTD.        |          |       |             |                          |       |               |