

FileName: TOWMEUP-CONSOLE-SWIVEL.PBF
 Machine: MatrixT

WorkNumber: 1 TOWMEUP CONSOLE SWIVEL - EXTEND 5IN FROM HD1
 Size (number of blocks): 47
 Machine: MatrixT

| UNo. | MAT | OD-MAX | ID-MIN | LENGTH | WORK-FACE | ATC-MODE | RPM | LTUR-DIA |
|--|----------|--------|--------|--------|-----------|----------|------|--------------|
| 0 | ALUMINUM | 1.55 | 0. | 13.35 | 0.1 | 0 | 2750 | |
| TPC Clearance U3 U4 U5 U6 P95 Parameters | | | | | | | | |
| 0. | | 0. | 0. | 5.8393 | 0 | 0 | 25 | 0 0 0 plx |
| plz | | | | | | | | |
| p2x0. | p2z | p3x | p3z | | | | | |
| TPC Clearance U3 U4 U5 U6 P95 Parameters | | | | | | | | |
| 0. | | 0. | 0. | 0. | 0 | 0 | 1 | 25 0 0 0 plx |
| plz | | | | | | | | |
| p2x0. | p2z | p3x | p3z | | | | | |

| UNo. | UNIT | PART | POS-B | FIN-Z | SNo | TOOL | NOM. | No. | PAT. | DEP-1 | DEP-2/NUM | DEP-3 | FIN-X | FIN-Z | C-SP | FR | M | M | M | |
|------|--------|-------|-------|-------|-------|------|------|-----|------|-------|-----------|-------|-------|-------|------|-------|---|-----|---|--|
| 1 | FACING | FCE | 90. | 0.005 | | | | | | | | | | | | | | | | |
| R 1 | GNL | OUT | 36. | B | <> | 0.1 | <> | <> | <> | <> | <> | <> | <> | <> | 950 | 0.011 | 8 | 153 | | |
| F 2 | GNL | OUT | 36. | B | <> | <> | <> | <> | <> | <> | <> | <> | <> | 0. | 1500 | 0.005 | 8 | 153 | | |
| FIG | | SPT-X | SPT-Z | FPT-X | FPT-Z | | | | | | | | | | RGH | | | | | |
| 1 | | 1.55 | 0.1 | 0. | 0. | | | | | | | | | | 6 | | | | | |

| UNo. | UNIT | PART | POS-B | CPT-X | CPT-Z | FIN-X | FIN-Z | SNo | TOOL | NOM. | No. | PAT. | DEP-1 | DEP-2/NUM | DEP-3 | FIN-X | FIN-Z | C-SP | FR | M | M | M | |
|------|------|-------|-------|-------|-------|-------|----------|------|------|------|-----|------|-------|-----------|-------|-------|-------|------|-------|---|-----|---|--|
| 2 | BAR | OUT | 90. | 1.53 | 0. | 0.01 | 0.005 | | | | | | | | | | | | | | | | |
| R 1 | GNL | OUT | 36. | B | 3 | 0.1 | 0.1 | <> | <> | <> | <> | <> | <> | <> | <> | <> | <> | 950 | 0.011 | 8 | 153 | | |
| F 2 | GNL | OUT | 36. | B | <> | <> | <> | <> | <> | <> | <> | <> | <> | <> | <> | 0. | 0. | 1500 | 0.005 | 8 | 153 | | |
| FIG | PTN | S-CNR | SPT-X | SPT-Z | FPT-X | FPT-Z | F-CNR/\$ | R/th | | | | | | | | | | | RGH | | | | |
| 1 | /^ | | 0. | 0. | 1.52 | 0.76 | | 0.76 | | | | | | | | | | | 6 | | | | |
| 2 | TPR | | 1.52 | 0.76 | 1.53 | 0.85 | | | | | | | | | | | | | 6 | | | | |

| UNO | UNIT | MODE | POS-B | POS-C | DIA | DEPTH | CHMF | SNo | TOOL | NOM-D | No. | HOLE-D | HOLE-DEP | PRE-DIA | PRE-DEP | RGH | DEPTH | C-SP | FR | M | M | M | |
|-----|----------|---------|---------|-------|-------|-------|-------|-----|------|--------|-----|--------|----------|---------|---------|-----|-------|------|----|---|---|---|--|
| 3 | DRILLING | ZC | <> | <> | 0.75 | 1.75 | 0. | | | | | | | | | | | | | | | | |
| 1 | DRILL | | 0.75 | E | 0.75 | 1.75 | 0. | 100 | DRL | T0.225 | 232 | 0.012 | 153 | 8 | | | | | | | | | |
| FIG | SHP | SPT-R/x | SPT-C/y | SPT-Z | SPT-Y | NUM | ANGLE | Q | R | | | | | | | | | | | | | | |
| 1 | PT | R0.775 | A0. | 1. | 0. | <> | <> | <> | 0 | | | | | | | | | | | | | | |
| 2 | PT | R0.775 | A0. | 3.75 | 0. | <> | <> | <> | 0 | | | | | | | | | | | | | | |

| UNo. | UNIT | MODE | POS-B | POS-C | NOM-0 | MAJOR-0 | PITCH | TAP-DEP | CHMF | SNo | TOOL | NOM-D | No. | HOLE-D | HOLE-DEP | PRE-DIA | PRE-DEP | RGH | DEPTH | C-SP | FR | M | M | M |
|------|---------|---------|---------|-------|--------|---------|--------|---------|------|--------|------|--------|-----|--------|----------|---------|---------|-----|-------|------|----|---|---|---|
| 4 | TAPPING | ZC | <> | <> | 1/2-13 | 0.5 | 0.0769 | 0.8 | 0. | | | | | | | | | | | | | | | |
| 1 | DRILL | | 0.42 | E | 0.43 | 1. | 0. | 100 | DRL | T0.129 | 131 | 0.0092 | 8 | 153 | | | | | | | | | | |
| 2 | TAP-UN | | 1/2-13E | | 0.5 | 0.8 | TAP | <> | FIX | 0.077 | 127 | 0.0769 | 8 | 153 | | | | | | | | | | |
| FIG | SHP | SPT-R/x | SPT-C/y | SPT-Z | SPT-Y | NUM | ANGLE | Q | R | | | | | | | | | | | | | | | |
| 1 | PT | R0.775 | A90. | 1. | 0. | <> | <> | <> | 0 | | | | | | | | | | | | | | | |
| 2 | PT | R0.775 | A90. | 3.75 | 0. | <> | <> | <> | 0 | | | | | | | | | | | | | | | |

| UNO | UNIT | TOOL | NOM-DIA | No. | POS-B | CHANGE-PT |
|-----|----------|---------|---------|-----|-------|-----------|
| 5 | MANL-PRG | GNL OUT | 36. | E | 0. | RETURN |

| UNO. | MODE | No.# | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 | M11 | M12 |
|------|--------|------|----|-----|----|----|----|----|----|----|----|-----|-----|-----|
| 6 | M-CODE | | 9 | 154 | | | | | | | | | | |

THIS UNIT MOVES SUBSPINDLE UP OVER STOCK AND CLAMPS IT IN PLACE

| UNo. | UNIT | PAT | HEAD | SPDL | PUSH | CHUCK | W1 | W2 | Z-OFFSET | C1 | C2 | C-OFFSET | LTUR | ESC | TNo |
|------|----------|-----|------|------|------|-------|--------|----|----------|----|----|----------|------|-----|-----|
| 7 | TRANSFER | BAR | 2 | 4 | <> | 1 | -36.83 | <> | <> | 0. | 0. | 0. | | | |

THIS UNIT OPENS HEAD 1 AND PULLS STOCK OUT 6.3" AND CLAMPS BOTH HEADS

UNo. UNIT PAT HEAD SPDL PUSH CHUCK W1 W2 Z-OFFSET C1 C2 C-OFFSET LTUR ESC TNo
8 TRANSFER BAR 1 4 <> 1 <> -30.53 -2.4393 0. 0. 0.

THIS UNIT MOVES SUBSPINDLE FORWARD TO LEAVE APPROX 3" OF STOCK EXTENDING FROM HEAD 2

UNo. UNIT PAT HEAD SPDL PUSH CHUCK W1 W2 Z-OFFSET C1 C2 C-OFFSET LTUR ESC TNo
9 TRANSFER BAR 2 4 <> 1 -37.53 <> <> 0. 0. 0.

THIUS UNIT PULLS STOCK OUT OF HEAD 1 COMPLETELY AND FREES STOCK FROM HEAD 1

UNo. UNIT PAT HEAD SPDL PUSH CHUCK W1 W2 Z-OFFSET C1 C2 C-OFFSET LTUR ESC TNo
10 TRANSFER BAR 1 4 <> 1 <> -32.53 -7.4393 0. 0. 0.

UNo. UNIT PAT. HEAD SPDL
11 HEAD SINGLE 2 <>

THIS UNIT SENDS HEAD 2 BACK TO W HOME POSITION, AND RESETS THE OFFSET TO THE ORIGINAL FACE OF PART TO MACHINE SIDE 2

UNo. UNIT PAT HEAD SPDL PUSH CHUCK W1 W2 Z-OFFSET C1 C2 C-OFFSET LTUR ESC TNo
12 TRANSFER MOV <> <> <> <> <> 0. 47.7422

UNo. UNIT PART POS-B FIN-Z
13 FACING BAK 90. 0.005
SNo TOOL NOM. No. PAT. DEP-1 DEP-2/NUM DEP-3 FIN-X FIN-Z C-SP FR M M M
R 1 GNL OUT 36. E <> 0.1 <> <> <> <> 950 0.011 8 153
F 2 GNL OUT 36. E <> <> <> <> <> 0. 1500 0.005 8 153
FIG SPT-X SPT-Z FPT-X FPT-Z RGH
1 1.55 -13.4 0. -13.25 6

UNo. UNIT PART POS-B CPT-X CPT-Z FIN-X FIN-Z
14 BAR OUT 90. 1.55 13.25 0.01 0.005
SNo TOOL NOM. No. PAT. DEP-1 DEP-2/NUM DEP-3 FIN-X FIN-Z C-SP FR M M M
R 1 GNL OUT 36. E 3 0.1 0.1 <> <> <> 950 0.011 8 153
F 2 GNL OUT 36. E <> <> <> <> 0. 0. 1500 0.005 8 153
FIG PTN S-CNR SPT-X SPT-Z FPT-X FPT-Z F-CNR/\$ R/th RGH
1 /^\ 0. 13.25 1.52 12.49 0.76 6
2 TPR 1.52 12.49 1.53 12.465 6

UNO UNIT MODE POS-B POS-C DIA DEPTH CHMF
15 DRILLING ZC <> <> 0.75 1.75 0.
SNo TOOL NOM-D No. HOLE-D HOLE-DEP PRE-DIA PRE-DEP RGH DEPTH C-SP FR M M M
1 DRILL 0.75 E 0.75 1.75 0. 100 DRL T0.225 232 0.012 153 8
FIG SHP SPT-R/x SPT-C/y SPT-Z SPT-Y NUM ANGLE Q R
1 PT R0.775 A0. 12.25 0. <> <> <> 0

UNo. UNIT MODE POS-B POS-C NOM-0 MAJOR-0 PITCH TAP-DEP CHMF
16 TAPPING ZC <> <> 1/2-13 0.5 0.0769 0.8 0.
SNo TOOL NOM-D No. HOLE-D HOLE-DEP PRE-DIA PRE-DEP RGH DEPTH C-SP FR M M M
1 DRILL 0.42 E 0.43 1. 0. 100 DRL T0.129 131 0.0092 8 153
2 TAP-UN 1/2-13E 0.5 0.8 TAP <> FIX 0.077 127 0.0769 8 153
FIG SHP SPT-R/x SPT-C/y SPT-Z SPT-Y NUM ANGLE Q R
1 PT R0.775 A90. 12.25 0. <> <> <> 0

UNO UNIT TOOL NOM-DIA No. POS-B CHANGE-PT
17 MANL-PRG GNL OUT 36. B 0. RETURN

UNo. UNIT CONTI. REPEAT SHIFT NUMBER ATC RETURN LOW-RET. Work-No. EXECUTE
18 END 0 1 0 ToolChg YES

Program Layout

| Pri | SNo | Tool | | NOM-0 | | UNo | Unit | Angle |
|-----|-----|--------|-----|--------|---|-----|---------------|-------|
| R | 1 | GNL | OUT | 36. | B | 1 | FACING | FCE |
| F | 2 | GNL | OUT | 36. | B | 1 | FACING | FCE |
| R | 1 | GNL | OUT | 36. | B | 2 | BAR | OUT |
| F | 2 | GNL | OUT | 36. | B | 2 | BAR | OUT |
| | 1 | DRILL | | 0.75 | E | 3 | DRILLING | ZC |
| | 1 | DRILL | | 0.42 | E | 4 | TAPPING | ZC |
| | 2 | TAP-UN | | 1/2-13 | E | 4 | TAPPING | ZC |
| | | GNL | OUT | 36. | E | 5 | MANL-PRG | |
| | | | | | | 6 | M | |
| | | | | | | 7 | TRANSFER | BAR |
| | | | | | | 8 | TRANSFER | BAR |
| | | | | | | 9 | TRANSFER | BAR |
| | | | | | | 10 | TRANSFER | BAR |
| | | | | | | 11 | HEAD SINGLE 2 | |
| | | | | | | 12 | TRANSFER | MOV |
| R | 1 | GNL | OUT | 36. | E | 13 | FACING | BAK |
| F | 2 | GNL | OUT | 36. | E | 13 | FACING | BAK |
| R | 1 | GNL | OUT | 36. | E | 14 | BAR | OUT |
| F | 2 | GNL | OUT | 36. | E | 14 | BAR | OUT |
| | 1 | DRILL | | 0.75 | E | 15 | DRILLING | ZC |
| | 1 | DRILL | | 0.42 | E | 16 | TAPPING | ZC |
| | 2 | TAP-UN | | 1/2-13 | E | 16 | TAPPING | ZC |
| | | GNL | OUT | 36. | B | 17 | MANL-PRG | |