



# Casing

Means of Production

hot laminated

Tehnickal Condition

API 5CT

Resistance Class

H40, J55, K55, N80, L80  
C90. C95, T95, P110

| Exterior Diameter |       | Nominal Weight | Wall Thickness |       | Resistance class and smooth end |            |            |      |            |      |
|-------------------|-------|----------------|----------------|-------|---------------------------------|------------|------------|------|------------|------|
| inch              | mm    | Lb/ft          | inch           | mm    | H-40                            | J55<br>K55 | L80<br>C95 | N80  | C90<br>T95 | P110 |
| 4 1/2             | 114,3 | 9.50           | 0.205          | 5.21  | PS                              | PS         | 9.50       | -    | -          | -    |
|                   |       | 10.50          | 0.224          | 5.69  | -                               | PSB        |            | -    | -          | -    |
|                   |       | 11.60          | 0.250          | 6.35  | -                               | PSLB       |            | PBL  | PBL        | PBL  |
|                   |       | 13.50          | 0.290          | 7.37  | -                               | -          |            | PBL  | PBL        | PBL  |
|                   |       | 15.10          | 0.337          | 8.56  | -                               | -          |            | -    | -          | PBL  |
| 5                 | 127   | 11.50          | 0.220          | 5.59  | -                               | PS         |            | -    | -          | -    |
|                   |       | 13.00          | 0.253          | 6.43  | -                               | PSLB       |            | -    | -          | -    |
|                   |       | 15.00          | 0.296          | 7.52  | -                               | PSLBE      |            | PLBE | PLBE       | -    |
|                   |       | 18.00          | 0.362          | 9.19  | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 21.40          | 0.437          | 11.10 | -                               | -          |            | PLB  | PLB        | PLB  |
|                   |       | 23.20          | 0.478          | 12.14 | -                               | -          |            | PLB  | PLB        | PLB  |
|                   |       | 24.10          | 0.500          | 12.70 | -                               | -          |            | PLB  | PLB        | PLB  |
| 5 1/2             | 139.7 | 14.00          | 0.244          | 6.20  | PS                              | -          |            | -    | -          | -    |
|                   |       | 15.50          | 0.275          | 6.98  | -                               | PSLBE      |            | -    | -          | -    |
|                   |       | 17.00          | 0.304          | 7.72  | -                               | PSLBE      |            | PLBE | PLBE       | PLBE |
|                   |       | 20.00          | 0.361          | 9.17  | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 23.00          | 0.415          | 10.54 | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 26.80          | 0.500          | 12.70 | -                               | -          |            | -    | P          | -    |
| 6 5/8             | 168.3 | 20.00          | 0.288          | 7.72  | PS                              | PSLB       |            | -    | -          | -    |
|                   |       | 24.00          | 0.352          | 8.94  | -                               | PSLBE      |            | PLBE | PLBE       | PLBE |
|                   |       | 28.00          | 0.417          | 10.59 | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 32.00          | 0.475          | 12.06 | -                               | -          |            | PLBE | PLBE       | PLBE |
| 7                 | 177.8 | 23.00          | 0.317          | 8.05  | -                               | PSLBE      |            | PLBE | PLBE       | -    |
|                   |       | 26.00          | 0.362          | 9.19  | -                               | PSLBE      |            | PLBE | PLBE       | PLBE |
|                   |       | 29.00          | 0.408          | 10.36 | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 32.00          | 0.453          | 11.51 | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 35.00          | 0.498          | 12.65 | -                               | -          |            | PLBE | PLBE       | PLBE |
|                   |       | 38.00          | 0.540          | 13.72 | -                               | -          |            | PLBE | PLBE       | PLBE |

P-smooth end

S-round chine

L-round long chine

B-Buttress chine

E-extreme line



# Casing

| Exterior Diameter |       | Nominal Weight | Wall Thickness |       | Resistance class and smooth end |         |         |      |         |      |
|-------------------|-------|----------------|----------------|-------|---------------------------------|---------|---------|------|---------|------|
| inch              | mm    | Lb/ft          | inch           | mm    | H-40                            | J55 K55 | L80 C95 | N80  | C90 T95 | P110 |
| 7 5/8             | 193.7 | 24.00          | 0.300          | 7.62  | PS                              |         | -       | -    | -       | -    |
|                   |       | 26.40          | 0.328          | 8.33  | -                               | PSLBE   | PBLE    | PBLE | PBLE    | -    |
|                   |       | 29.70          | 0.375          | 9.52  | -                               | -       | PBLE    | PBLE | PBLE    | PBLE |
|                   |       | 33.70          | 0.430          | 10.92 | -                               | -       | PBLE    | PBLE | PBLE    | PBLE |
|                   |       | 39.00          | 0.500          | 12.70 | -                               | -       | PBLE    | PBLE | PBLE    | PBLE |
|                   |       | 42.80          | 0.562          | 14.27 | -                               | -       | PLB     | PLB  | PLB     | PLB  |
|                   |       | 45.30          | 0.595          | 15.11 | -                               | -       | PLB     | PLB  | PLB     | PLB  |
|                   |       | 47.10          | 0.625          | 15.86 | -                               | -       | PLB     | PLB  | PLB     | PLB  |
| 8 5/8             | 219.1 | 28.00          | 0.304          | 7.72  | PS                              | -       | -       | -    | -       | -    |
|                   |       | 32.00          | 0.352          | 8.94  | PS                              | PSLBE   | -       | -    | -       | -    |
|                   |       | 36.00          | 0.400          | 10.16 | -                               | -       | PLBE    | PLBE | PLBE    | -    |
|                   |       | 40.00          | 0.450          | 11.43 | -                               | -       | PLBE    | PLBE | PLBE    | PLBE |
|                   |       | 44.00          | 0.500          | 12.70 | -                               | -       | PLBE    | PLBE | PLBE    | PLBE |
| 9 5/8             | 244.5 | 32.30          | 0.312          | 7.92  | PS                              | -       | -       | -    | -       | -    |
|                   |       | 36.00          | 0.352          | 8.94  | PS                              | PSLB    | -       | -    | -       | -    |
|                   |       | 40.00          | 0.395          | 10.03 | -                               | PSLBE   | PLBE    | PLBE | PLBE    | -    |
|                   |       | 43.50          | 0.435          | 11.05 | -                               | -       | PLBE    | PLBE | PLBE    | PLBE |
|                   |       | 47.00          | 0.472          | 11.99 | -                               | -       | PLBE    | PLBE | PLBE    | PLBE |
|                   |       | 53.50          | 0.545          | 13.84 | -                               | -       | PLBE    | PLBE | PLBE    | PLBE |
| 10 3/4            | 273.1 | 40.50          | 0.350          | 8.89  | PS                              | PSB     | -       | -    | -       | -    |
|                   |       | 45.50          | 0.400          | 10.16 | -                               | PSBE    | -       | -    | -       | -    |
|                   |       | 51.00          | 0.450          | 11.43 | -                               | PSBE    | PSBE    | PSBE | PSBE    | PSBE |
|                   |       | 55.50          | 0.495          | 12.57 | -                               | -       | PSBE    | PSBE | PSBE    | PSBE |
|                   |       | 60.70          | 0.545          | 13.84 | -                               | -       | -       | -    | PSBE    | PSBE |
| 11 3/4            | 298.5 | 42.00          | 0.333          | 8.46  | PS                              | -       | -       | -    | -       | -    |
|                   |       | 47.00          | 0.375          | 9.53  | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 54.00          | 0.435          | 11.05 | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 60.00          | 0.498          | 12.42 | -                               | PSB     | PSB     | PSB  | PSB     | PSB  |
|                   |       | 65.00          | 0.534          | 13.56 | -                               | -       | P       | P    | P       | P    |
| 13 3/8            | 339.7 | 54.50          | 0.380          | 9.65  | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 61.00          | 0.430          | 10.92 | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 68.00          | 0.480          | 12.19 | -                               | PSB     | PSB     | PSB  | PSB     | PSB  |
|                   |       | 72.00          | 0.514          | 13.06 | -                               | -       | PSB     | PSB  | PSB     | PSB  |
| 16                | 406.4 | 75.00          | 0.438          | 11.13 | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 84.00          | 0.495          | 12.57 | -                               | PSB     | -       | -    | -       | -    |
|                   |       | 109.00         | 0.645          | 16.66 | -                               | P       | P       | P    | P       | P    |
| 20                | 508.0 | 133.00         | 0.635          | 16.13 | -                               | PSLB    | -       | -    | -       | -    |



# Tubing

| Means of Production |       | Tehnnical Condition        |                  | Resistance Class              |      |      |       |
|---------------------|-------|----------------------------|------------------|-------------------------------|------|------|-------|
| hot laminated       |       | SR EN ISO 11960<br>API 5CT |                  | J 55; L 80; N 80; C 90; P 110 |      |      |       |
| Exterior Diameter   |       | Wall Thickness             | Resistance class |                               |      |      |       |
| inch                | mm    | mm                         | J 55             | L 80                          | N 80 | C 90 | P 110 |
| 1.900               | 48.3  | 3.18                       | P                | -                             | -    | -    | -     |
|                     | 48.3  | 3.68                       | PNU              | -                             | PNU  | PNU  | -     |
|                     | 48.3  | 5.08                       | PU               | -                             | PU   | PU   | -     |
|                     | 48.3  | 6.35                       | -                | P                             | -    | P    | -     |
| 2 3/8               | 60.3  | 4.83                       | PNU              | PNU                           | PNU  | PNU  | PNU   |
|                     | 60.3  | 6.45                       | -                | PNU                           | PNU  | PNU  | PNU   |
| 2 7/8               | 73.3  | 5.51                       | PNU              | PNU                           | PNU  | PNU  | PNU   |
|                     | 73.3  | 7.01                       | -                | PNU                           | PNU  | PNU  | PNU   |
|                     | 73.3  | 7.82                       | -                | PNU                           | PNU  | PNU  | PNU   |
| 3 1/2               | 88.9  | 6.45                       | PNU              | PNU                           | PNU  | PNU  | PNU   |
| 4                   | 101.6 | 5.74                       | PN               | PN                            | PN   | PN   | PN    |
|                     | 101.6 | 6.65                       | PN               | PN                            | PN   | PN   | PN    |
| 4 1/2               | 114.3 | 6.88                       | PNU              | PNU                           | PNU  | PNU  | PNU   |

Romil International can provide various size, configuration and type of piping on request.

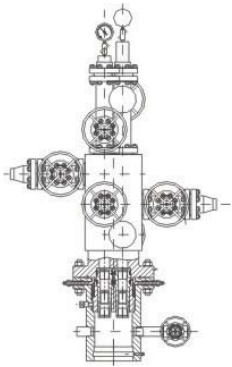


# Wellhead Equipment



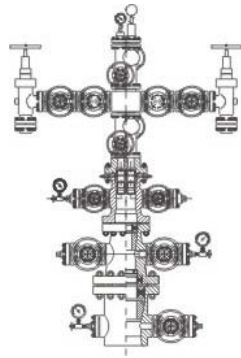
## Casing Heads

## Casing Spool



## Casing Hanger

weight energized seal  
 Slip-Type Casing Hanger  
 pressure energized seal  
 Slip-Type Casing Hanger



## Tubing Heads

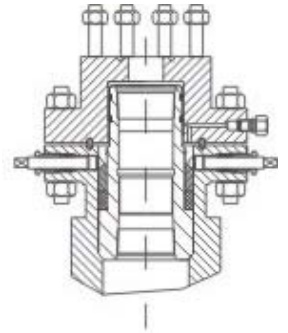
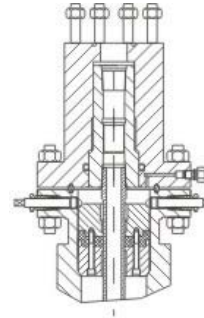
adapter flanges

## Secondary Seal



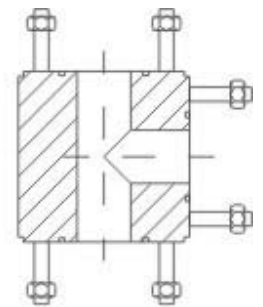
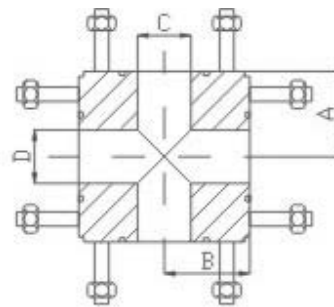
## Tubing Hanger

Type Th 1  
 Type Th-D  
 Type Th-DS  
 Type Th-W



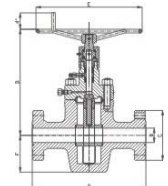
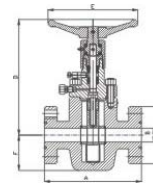
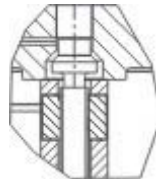
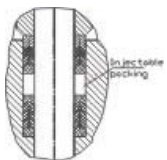
## Tees and Crosses

Single Completion  
 Dual Completion  
 Christmas Tree Caps



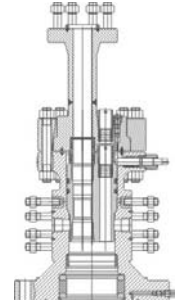
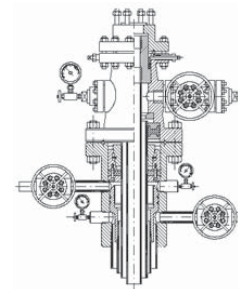
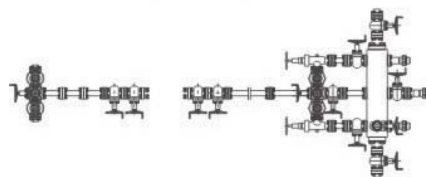
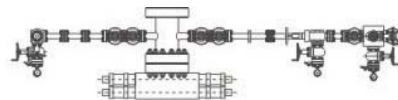
## Chokes

## Slab Gate Valves



## Expanding Gate Valves

## Dual gate Valves

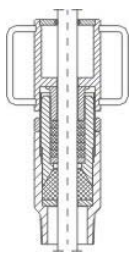
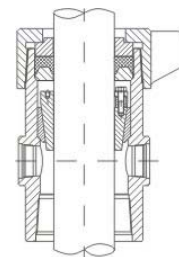
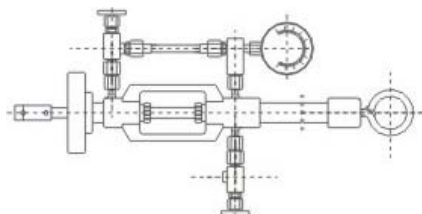
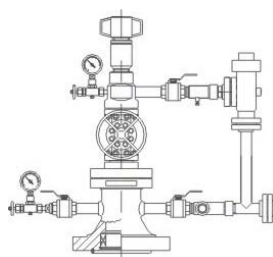


## Surface Safety Valves

## Christmas Tree

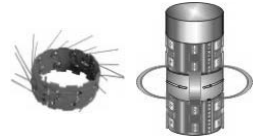
## Choke and Kill Manifolds

## Pumping Head Accessories





## Mechanical Cementing Products



Centralizers

Cementing  
Accessories

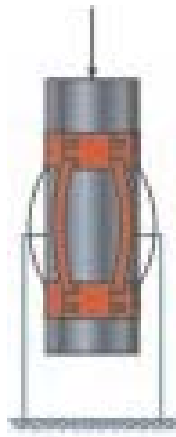
Circulation  
Heads

Float Guide

Shoes and  
collars

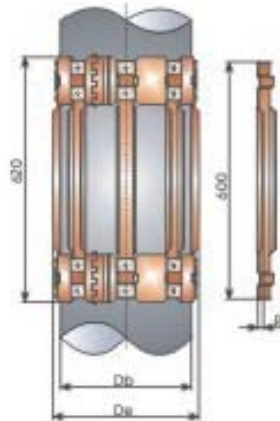
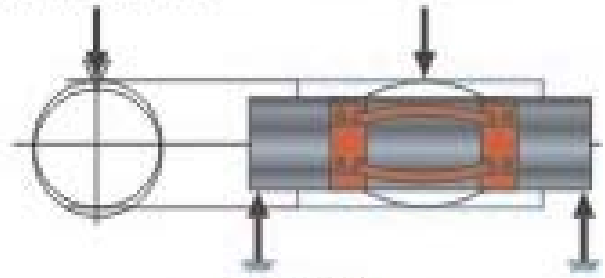
Cementing  
Heads

- The result of more than 30 years of field experience and laboratory testing, our newest design has features making them ideal for both tubing and casing applications.
- Compression testing of the centralized ensures that the centralizers can withstand important forces when running the casing.



Restoring Force Test  
acc. to API Spec. 10D

Restoring Force



## Industrial VALVES API 6A & API 6D

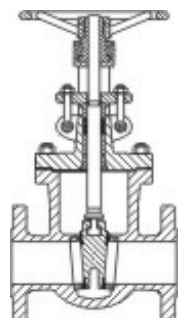
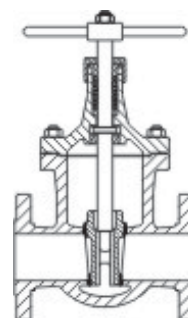
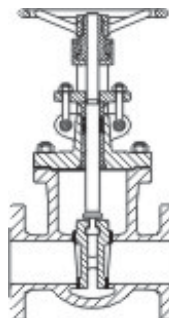
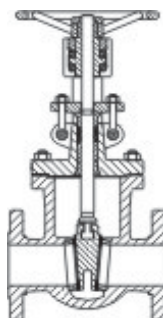
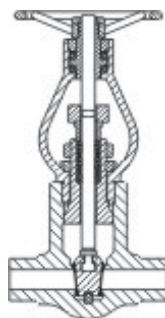
Ball Valves

Strainers

Globes Valves

Check Valves

Wedge Gate





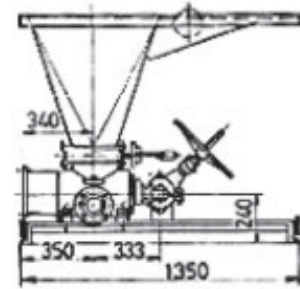
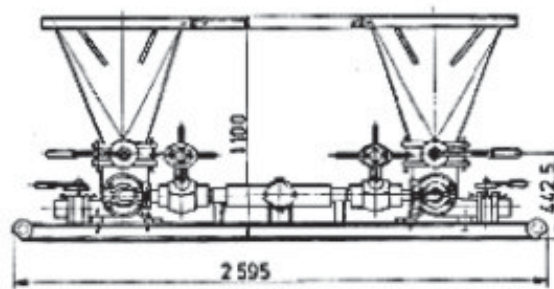
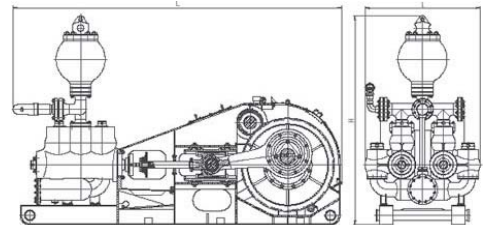
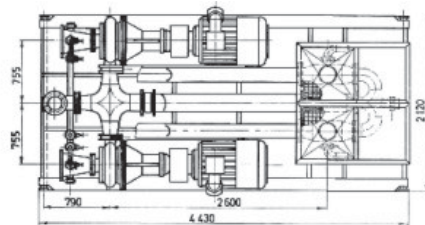


## Solid Control

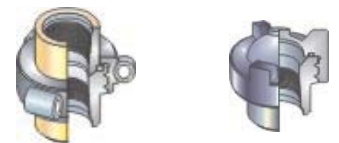
Shale Shaker  
 Desander and  
 Desilter  
 Degaser  
 Motor-driven  
 Propeller  
 Stirres  
 Bottom Gun  
 Top Type Mud  
 Gun



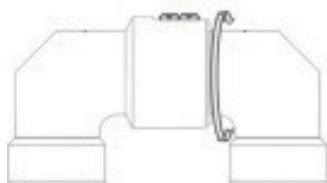
Mud Preparing  
 Unit  
 Mud Mixing  
 Unit  
 Duplex&Triplex  
 Mud Pumps  
 Elastic  
 Connections &  
 Joins  
 Adjustable  
 Connections  
 Rotary Hoses



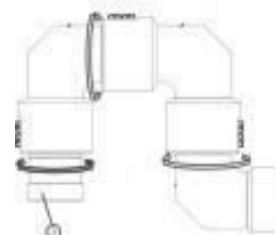
## High Pressure Products



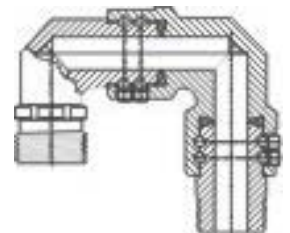
Mud  
 Valves Series  
 Plug Valves



Non aligned  
 Screwed Unions  
 Wing Unions



Swivel joints  
 Cementing and  
 Circulating Hoses



High Presure  
 Fittings



## Rigs

### TD 80 CA A4

|                 |        |
|-----------------|--------|
| Max Hook Load   | 80 tf  |
| Drilling Depth  | 1800 m |
| Operating Depth | 4700 m |

#### Purpose

To perform drilling, overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, four axle mounted
- from viewpoint of site location: standard version and block module version
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded motor pumping unit, mast legs, mud system.

Components, electric system, BOPs, tanks system and others are shipped on separate trailers, featuring sizes within the usual transport limits.

#### Technical specification

|  |        |
|--|--------|
| Hook static operating load (max)             | 100 tf |
| Hook max. operating load                     | 80 tf  |
| Drilling depth 4 1/2 (24,7 kg/m) drill pipes | 1800 m |
| Mast type                                    | MU-80  |
| Mast clearance (ground to crownblock)        | 32 m   |
| Max. length of stands                        | 18 m   |
| Engine max output                            | 365 HP |
| Drawworks drum no.                           | 1      |
| Main wire line OD                            | 25 mm  |
| Main drum speed no.                          | 5+1 R  |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 11.5 tf            |
| Traveller block sheave no.             | 4                  |
| Crown block sheave no.                 | 5                  |
| Swivel max. static load                | 80 tf              |
| Rotary table opening                   | 520.7 mm (20 1/2") |
| Rotary table max. static load          | 320 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 4.5 m              |
| Mud pump                               | 500 HP             |
| Drilling fluid mud volume (mud system) | 120 c.m.           |







# Rigs

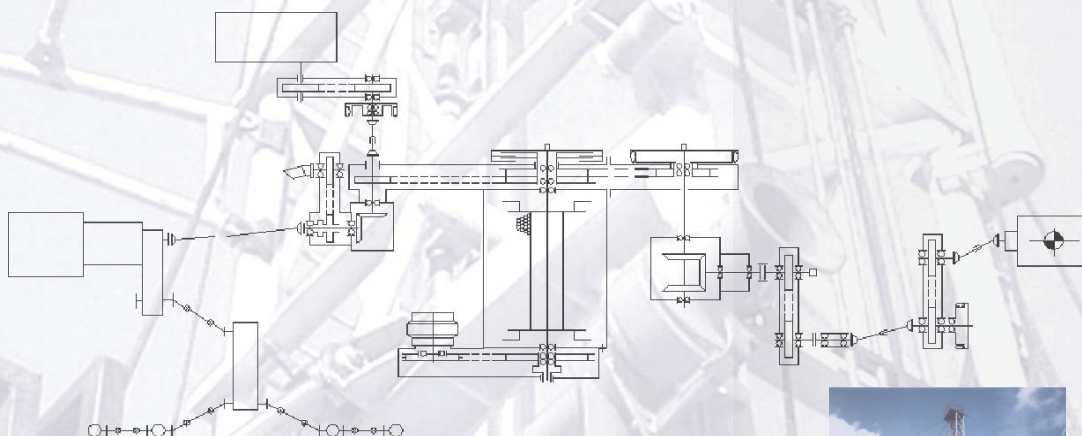
## Drilling and Workover Rig

### Components (main parts)

| Item | Denomination   | Quantity |
|------|--|----------|
| 1    | ROMAN 48 360 VFAE (8x8) truck with engine:<br>- CAT C10 (365 HP/2000 rpm) and CLBT 755 DB transmission or<br>- CAT 3406 C DITA (360 HP/2100 rpm) and ALLISON CLBT 754 DB | 1        |
| 2    | MU 80-32 Mast  | 1        |
| 3    | Monkey board   | 1        |
| 4    | One drum drawworks   | 1        |
| 5    | FH-560 Hydromatic brake  | 1        |
| 6    | Traveller block MC-80  | 1        |
| 7    | Hydraulic system   | 1        |
| 8    | Air system   | 1        |
| 9    | Electric system  | 1        |

### Optional

| Item | Denomination                                   | Quantity |
|------|--|----------|
| 1    | CH 80 Swivel                                   | 1        |
| 2    | MR 205 mechanic rotary table                   | 1        |
| 3    | DSD make up & break out device                 | 1        |
| 4    | TH 1.5 auxiliary hydraulic winch               | 1        |
| 5    | Substructure for MR 205                        | 1        |
| 6    | ASI 15 hook load indicator (optional MD TOTCO) | 1        |
| 7    | Pipe rack                                      | 1        |
| 8    | 3 PN 500 Mud pumping unit                      | 1        |
| 9    | 120 c.m. Mud system                            | 1        |



TD 80 CA A4





## Rigs

through **ROMOIL**

### TD 125 CA A6

|                 |        |
|-----------------|--------|
| Max Hook Load   | 125 tf |
| Drilling Depth  | 3000 m |
| Operating Depth | 7200 m |

#### Purpose

To perform drilling, overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, six axle mounted
- from viewpoint of site location: standard version and block module version
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded motor pumping unit, mast legs, mud system.

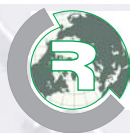
Components, electric system, BOPs, tanks system and others are shipped on separate trailers, featuring sizes within the usual transport limits.

#### Technical specification

|  |              |
|--|--------------|
| Hook static operating load (max)             | 135 tf       |
| Hook max. operating load                     | 125 tf       |
| Drilling depth 4 1/2 (24,7 kg/m) drill pipes | 3000 m       |
| Mast type                                    | MU-135       |
| Mast clearance (ground to crownblock)        | 33.4 or 36 m |
| Max. length of stands                        | 18 m         |
| Engine max output                            | 600 HP       |
| Drawworks drum no.                           | 1 or 2       |
| Main wire line OD                            | 28 mm        |
| Main drum speed no.                          | 5+1 R        |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 20 tf              |
| Traveller block sheave no.             | 4                  |
| Crown block sheave no.                 | 5                  |
| Swivel max. static load                | 150 tf             |
| Rotary table opening                   | 520.7 mm (20 1/2") |
| Rotary table max. static load          | 320 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 5.0 m              |
| Mud pump                               | 2x700 HP           |
| Drilling fluid mud volume (mud system) | 171 c.m.           |





# Rigs

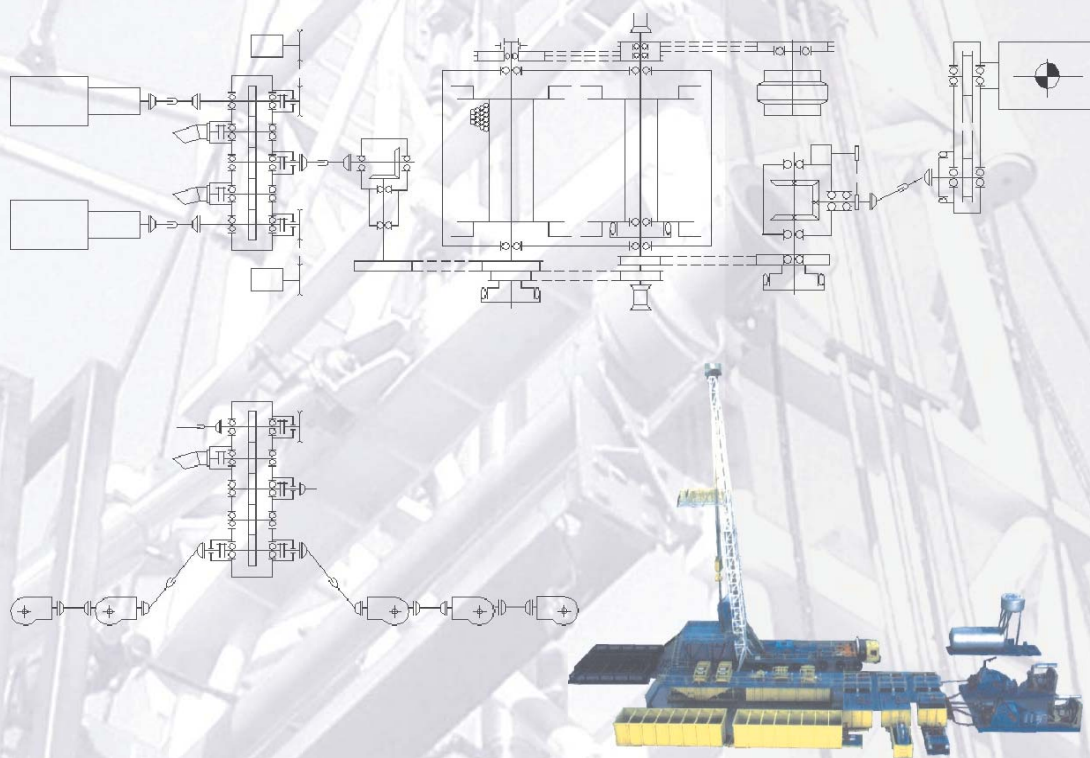
## Drilling and Workover Rig

### Components (main parts)

| Item | Denomination   | Quantity |
|------|--|----------|
| 1    | Truck ROMAN 72 525, 72 505 or 72940 (12x10) type with engine:<br>- C15 (525HP/2100 rpm) or CAT 3408C-DITA (505 HP/2100 rpm) and<br>ALLISON M 5610 ARDB transmission or<br>-2 x IAMZ 8424 (470 CP/2100 rpm) and ALLISON M 5610 transmission | 1        |
| 2    | MU 135-33 (36)   | 1        |
| 3    | Monkey board   | 1        |
| 4    | Drawworks TF 20-1 (one drum)   | 1        |
| 5    | FH-560 Hydromatic brake  | 1        |
| 6    | Traveller block MC-125-4x28  | 1        |
| 7    | Hydraulic system   | 1        |
| 8    | Air system   | 1        |
| 9    | Electric system  | 1        |

### Optional

| Item | Denomination                                   | Quantity |
|------|--|----------|
| 1    | CH 150 Swivel                                  | 1        |
| 2    | MR 205 mechanic rotary table                   | 1        |
| 3    | DSD make up & break out device                 | 1        |
| 4    | TH 4.5 auxiliary hydraulic winch               | 1        |
| 5    | Substructure for MR 205                        | 1        |
| 6    | ASI 27 hook load indicator (optional MD TOTCO) | 1        |
| 7    | Pipe rack                                      | 1        |
| 8    | 3 PN 700 Mud pumping unit                      | 2        |
| 9    | 171 c.m. Mud system                            | 1        |



TD 125 CA A6





## Rigs

through **ROMOIL**

### TD 160 CA A7

|                 |         |
|-----------------|---------|
| Max Hook Load   | 160 tf  |
| Drilling Depth  | 4000 m  |
| Operating Depth | 10500 m |

#### Purpose

To perform drilling, overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, seven axle mounted
- from viewpoint of site location: standard version and block module version
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded motor pumping unit, mast legs, mud system.

Components, electric system, BOPs, tanks system and others are shipped on separate trailers, featuring sizes within the usual transport limits.

#### Technical specification

|   |              |
|---|--------------|
| Hook static operating load (max)            | 192 tf       |
| Hook max. operating load                    | 160 tf       |
| Drilling depth 4 1/2(24,7 kg/m) drill pipes | 4000 m       |
| Mast type                                   | MU-160       |
| Mast clearance (ground to crownblock)       | 34.4 or 36 m |
| Max. length of stands                       | 18 m         |
| Engine max output                           | 920 HP       |
| Drawworks drum no.                          | 1 or 2       |
| Main wire line OD                           | 28 mm        |
| Main drum speed no.                         | 5+1 R        |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 25 tf              |
| Traveller block sheave no.             | 4                  |
| Crown block sheave no.                 | 5                  |
| Swivel max. static load                | 200 tf             |
| Rotary table opening                   | 698.5 mm (27 1/2") |
| Rotary table max. static load          | 500 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 5.5 m              |
| Mud pump                               | 2x700 HP           |
| Drilling fluid mud volume (mud system) | 171 c.m.           |





# Rigs

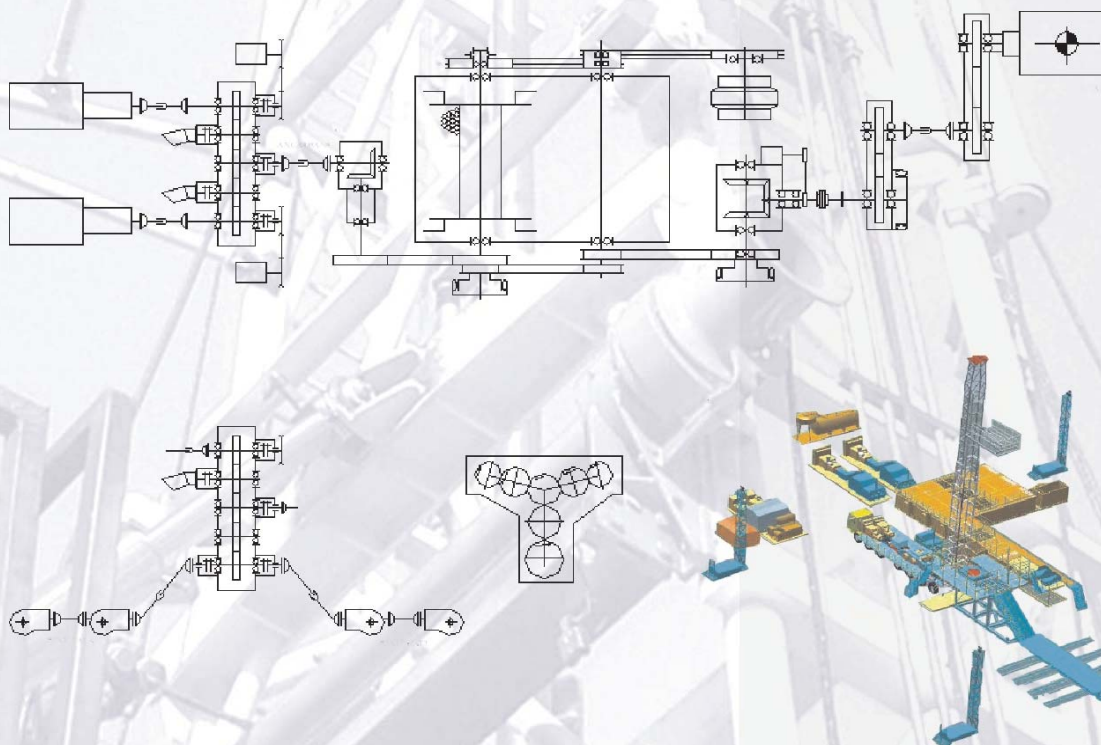
## Drilling and Workover Rig

### Components (main parts)

| Item | Denomination  | Quantity |
|------|---|----------|
| 1    | Truck DAC 841050 (14x10) with two engine C15 (525CP/2100 rpm) and two ALLISON M 5610 transmission with converter TC 682 | 1        |
| 2    | Mast MU 160   | 1        |
| 3    | Monkey board  | 1        |
| 4    | Drawworks TF 25   | 1        |
| 5    | FH-560Hydraulic brake   | 1        |
| 6    | Traveller block MC-160-4x28   | 1        |
| 7    | Hydraulic system  | 1        |
| 8    | Air system  | 1        |
| 9    | Electric system   | 1        |

### Optional

| Item | Denomination                                   | Quantity |
|------|--|----------|
| 1    | CH 200 Swivel                                  | 1        |
| 2    | MR 275 mechanic rotary table                   | 1        |
| 3    | DSD make up & break out device                 | 1        |
| 4    | TH 4.5 auxiliary hydraulic winch               | 1        |
| 5    | Substructure for MR 275                        | 1        |
| 6    | ASI 27 hook load indicator (optional MD TOTCO) | 1        |
| 7    | Pipe rack                                      | 1        |
| 8    | 3 PN 700 Mud pumping unit                      | 2        |
| 9    | 171 c.m. Mud system                            | 1        |



TW 160 CA A7





## Rigs

through **ROMOIL**

### TW 40 CA A4

|                 |        |
|-----------------|--------|
| Max Hook Load   | 40 tf  |
| Operating Depth | 2400 m |

#### Purpose

To perform overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, four axle mounted
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast, drawworks, block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded pumping unit, mast legs, mud system.

#### Technical specification

|   |        |
|---|--------|
| Hook static operating load (max)                              | 48 tf  |
| Hook max. operating load                                      | 40 tf  |
| Well repairing operations with 2 7/8 (12.19 kg/m) drill pipes | 2400 m |
| Mast type   | MU-40  |
| Mast clearance (ground to crownblock)                         | 27.2 m |
| Max. length of stands   | 18 m   |
| Engine max output   | 300 HP |
| Drawworks drum no.  | 1      |
| Main wire line OD   | 22 mm  |
| Main drum speed no.   | 4+1 R  |

|                               |              |
|-------------------------------|--------------|
| Main wire line pull           | 7.5 tf       |
| Traveller block sheave no.    | 3            |
| Crown block sheave no.        | 4            |
| Swivel max. static load       | 50 tf        |
| Rotary table opening          | 330 mm (13") |
| Rotary table max. static load | 125 tf       |
| Rotary table max speed        | 300 RPM      |
| Substructure height           | 2.2 m        |
| Mud pump                      | 160 HP       |
| Drilling fluid mud volume     | 14.5 c.m.    |





# Rigs

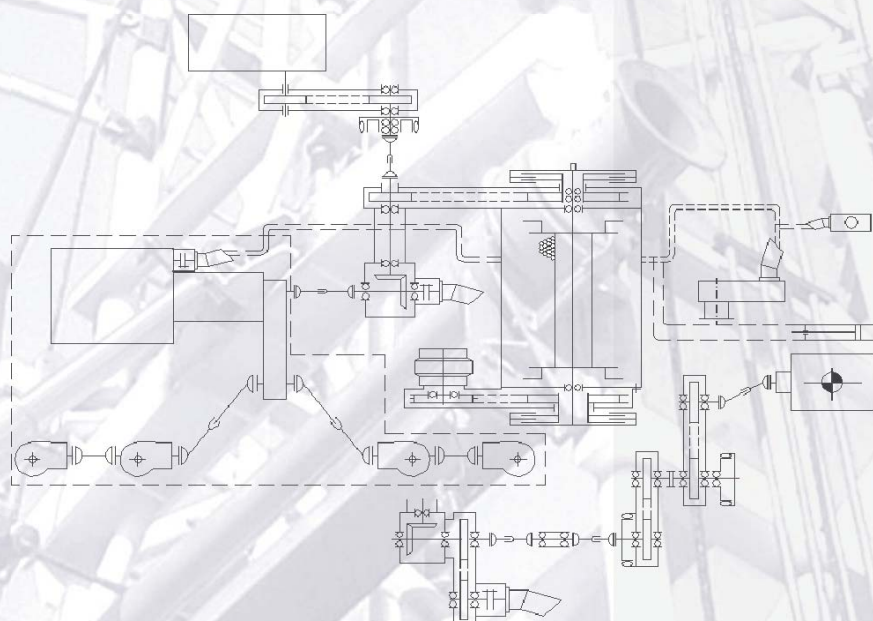
## Workover and service rigs

### Components (main parts)

| Item | Denomination   | Quantity |
|------|--|----------|
| 1    | DAC 40 360 VF (8x6/4) truck with CAT C DITA (360 HP/2100 rpm) engine and ALLISON 754 DB hydromechanical transmission | 1        |
| 2    | MU 40-27 Mast  | 1        |
| 3    | Monkey board   | 1        |
| 4    | Drum draw work   | 1        |
| 5    | Hydromatic brake   | 1        |
| 6    | MC 40 Traveller block  | 1        |
| 7    | Foldable driller cabin   | 1        |
| 8    | Hydraulic system   | 1        |
| 9    | Air system   | 1        |
| 10   | Electric system  | 1        |

### Optional

| Item | Denomination  | Quantity |
|------|---|----------|
| 1    | CH 50 Swivel  | 1        |
| 2    | MR 130 mechanical or rotary table with DFID hydraulic actuation | 1        |
| 3    | DSD make up & break out device                                  | 1        |
| 4    | PCM tubing handling device                                      | 1        |
| 5    | Kelly 3 1/2 x 10 m  | 1        |
| 6    | TH 1.5 auxiliary hydraulic winch                                | 1        |
| 7    | Substructure for MR 130 or foldable rear working platform       | 1        |
| 8    | ASD 10 hook load indicator                                      | 1        |
| 9    | Pipe rack   | 1        |
| 10   | Rods platform   | 1        |
| 11   | 2 PN 160 pump   | 1        |
| 12   | 14.5 m3 mud system  | 1        |



TW 40 CA A4





## Rigs

through **ROMOIL**

### TW 50 CA A4

Max Hook Load      50 tf  
Operating Depth      3000 m

#### Purpose

To perform overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, four axle mounted
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded pumping unit, mast legs, mud system.

#### Technical specification

|   |        |
|---|--------|
| Hook static operating load                                    | 65 tf  |
| Hook max. operating load                                      | 50 tf  |
| Well repairing operations with 2 7/8 (12.19 kg/m) drill pipes | 3000 m |
| Mast type   | MU-50  |
| Mast clearance (ground to crownblock)                         | 30.2 m |
| Max. length of stands   | 18 m   |
| Engine max output   | 365 HP |
| Drawworks drum no.  | 1      |
| Main wire line OD   | 26 mm  |
| Main drum speed no.   | 5+1 R  |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 11.5 tf            |
| Traveller block sheave no.             | 3                  |
| Crown block sheave no.                 | 4                  |
| Swivel max. static load                | 60 tf              |
| Rotary table opening                   | 444.5 mm (17 1/2") |
| Rotary table max. static load          | 250 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 4.8 m              |
| Mud pump                               | 300 HP             |
| Drilling fluid mud volume (mud system) | 88 c.m.            |





# Rigs

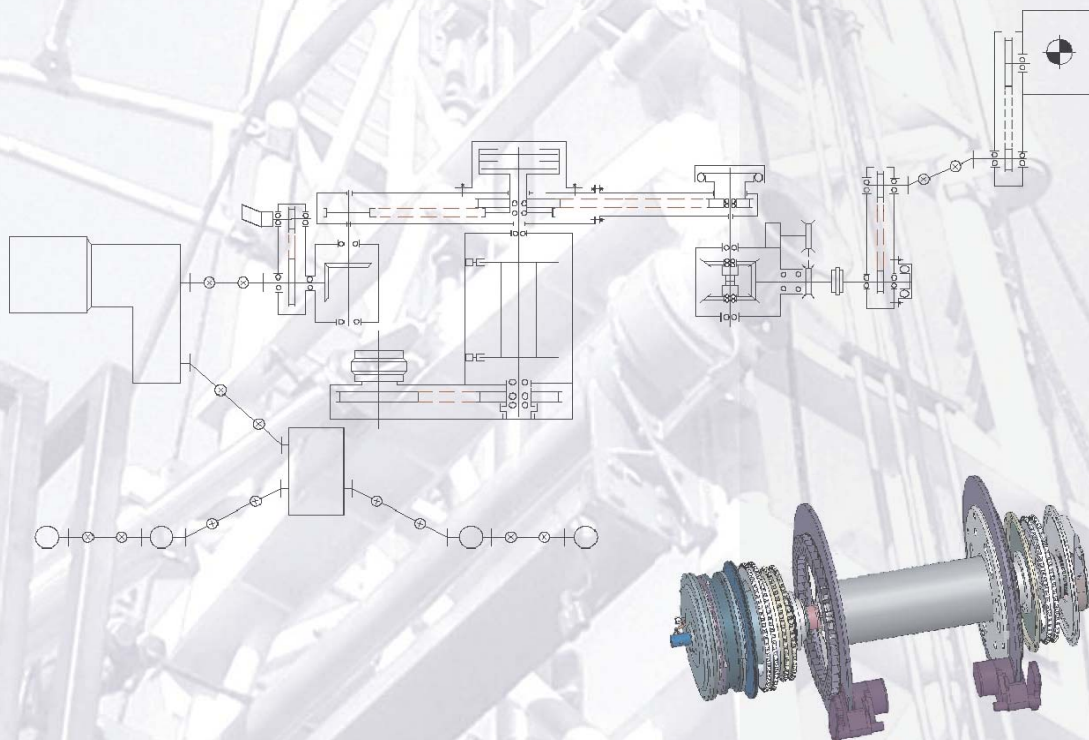
## Drilling and Workover Rig

### Components (main parts)

| Item | Denomination  | Quantity |
|------|---|----------|
| 1    | ROMAN 48365 VFAE (8X8) truck with CAT C 10 (365 HP/2100 rpm) engine and ALLISON 755 DB hydromechanical transmission | 1        |
| 2    | MU 50-30 Mast   | 1        |
| 3    | Monkey board  | 1        |
| 4    | Drum draw work (with disk brake and remote control)   | 1        |
| 5    | Hydromatic brake  | 1        |
| 6    | MC 60 Traveller block   | 1        |
| 7    | Hydraulic system  | 1        |
| 8    | Air system  | 1        |
| 9    | Electric system   | 1        |

### Optional

| Item | Denomination                       | Quantity |
|------|------------------------------------|----------|
| 1    | CH 60 Swivel                       | 1        |
| 2    | Rotary table MR 175                | 1        |
| 3    | DSD make up & break out device     | 1        |
| 4    | Kelly 3 1/2 x 10 m                 | 1        |
| 5    | TH 4.5 auxiliary hydraulic winch   | 1        |
| 6    | Substructure                       | 1        |
| 7    | Drilling parameters meter MD TOTCO | 1        |
| 8    | Pipe rack                          | 1        |
| 9    | 3 PN 300 mud pump                  | 1        |
| 10   | 88 m3 mud system                   | 1        |



TW 50 CA A4





## Rigs

through **ROMOIL**

### TW 70 CA A4

**Max Hook Load** 70 tf  
**Operating Depth** 4000 m

#### Purpose

To perform overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, four axle mounted
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

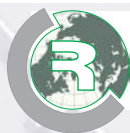
- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded pumping unit, mast legs, mud system.

#### Technical specification

|   |        |
|---|--------|
| Hook static operating load (max)                              | 70 tf  |
| Hook max. operating load                                      | 70 tf  |
| Well repairing operations with 2 7/8 (12.19 kg/m) drill pipes | 4000 m |
| Mast type   | MU-70  |
| Mast clearance (ground to crownblock)                         | 30 m   |
| Max. length of stands   | 18 m   |
| Engine max output   | 300 HP |
| Drawworks drum no.  | 1      |
| Main wire line OD   | 22 mm  |
| Main drum speed no.   | 5+1 R  |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 11.5 tf            |
| Traveller block sheave no.             | 3                  |
| Crown block sheave no.                 | 4                  |
| Swivel max. static load                | 50 tf              |
| Rotary table opening                   | 444,5 mm (17 1/2") |
| Rotary table max. static load          | 320 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 2.2 m              |
| Mud pump                               | 300 HP             |
| Drilling fluid mud volume (mud system) | 120 c.m.           |





# Rigs

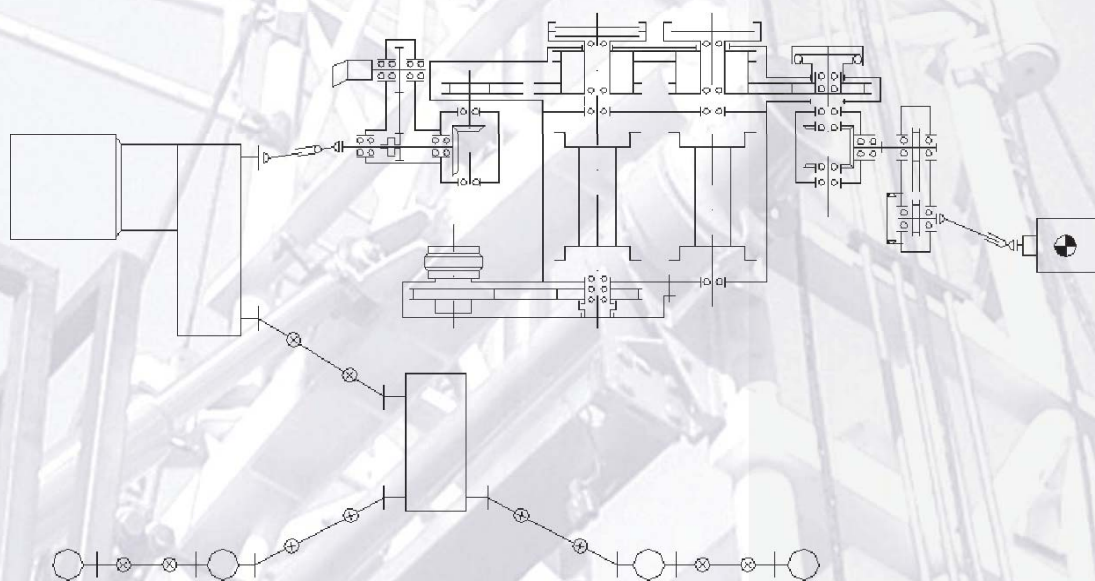
## Workover and service rigs

### Components (main parts)

| Item | Denomination  | Quantity |
|------|---|----------|
| 1    | ROMAN 48 360 VF (8x8) truck with CAT 3406 B DITA (360 HP/2100 rpm) engine and ALLISON 754 DB hydromechanical transmission | 1        |
| 2    | MU 70-30 Mast   | 1        |
| 3    | Monkey board  | 1        |
| 4    | Drum draw work  | 1        |
| 5    | Hydraulic brake   | 1        |
| 6    | MC 40 Traveller block   | 1        |
| 7    | Foldable driller cabin  | 1        |
| 8    | Hydraulic system  | 1        |
| 9    | Air system  | 1        |
| 10   | Electric system   | 1        |

### Optional

| Item | Denomination  | Quantity |
|------|---|----------|
| 1    | CH 80 Swivel  | 1        |
| 2    | MR 175 mechanical or rotary table with DFID hydraulic actuation | 1        |
| 3    | DSD make up & break out device                                  | 1        |
| 4    | PCM tubing handling device                                      | 1        |
| 5    | Kelly 3 1/2 x 10 m  | 1        |
| 6    | TH 1.5 auxiliary hydraulic winch                                | 1        |
| 7    | Substructure for MR 175 or foldable rear working platform       | 1        |
| 8    | ASD 15 hook load indicator                                      | 1        |
| 9    | Pipe rack   | 1        |
| 10   | Rods platform   | 1        |
| 11   | 3 PN 300 pump   | 1        |
| 12   | 120 m3 mud system   | 1        |



TW 70 CA A4





## Rigs

### TW 100 CA A5

through **ROMOIL**

**Max Hook Load** 100 tf  
**Operating Depth** 5800 m

#### Purpose

To perform overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of mobility: selfpropelled, five axle mounted
- from viewpoint of site location: standard version and block module version
- for various climate conditions: arctic, temperate and tropical.

Rig shall be supplied in huge bulk while shipment shall follow as below:

- mast drawworks block installed on selfpropelled truck
- mobile deck for drill pipes, separately shipped on trailer
- skidded motor pumping unit, mast legs, mud system.

Components, electric system, BOPs, tanks system and others are shipped on separate trailers, featuring sizes within the usual transport limits.

#### Technical specification

|   |        |
|---|--------|
| Hook static operating load                                    | 120 tf |
| Hook max. operating load                                      | 100 tf |
| Well repairing operations with 2 7/8 (12,19 kg/m) drill pipes | 5800 m |
| Mast type   | MU-100 |
| Mast clearance (ground to crownblock)                         | 33.4 m |
| Max. length of stands   | 18 m   |
| Engine max output   | 525 HP |
| Drawworks drum no.  | 1 or 2 |
| Main wire line OD   | 25 mm  |
| Main drum speed no.   | 5+1 R  |

|  |                    |
|--|--------------------|
| Main wire line pull                    | 15 tf              |
| Traveller block sheave no.             | 4                  |
| Crown block sheave no.                 | 5                  |
| Swivel max. static load                | 80 tf              |
| Rotary table opening                   | 520.7 mm (20 1/2") |
| Rotary table max. static load          | 320 tf             |
| Rotary table max speed                 | 300 RPM            |
| Substructure height                    | 4.5 m              |
| Mud pump                               | 700 HP             |
| Drilling fluid mud volume (mud system) | 160 c.m.           |





# Rigs

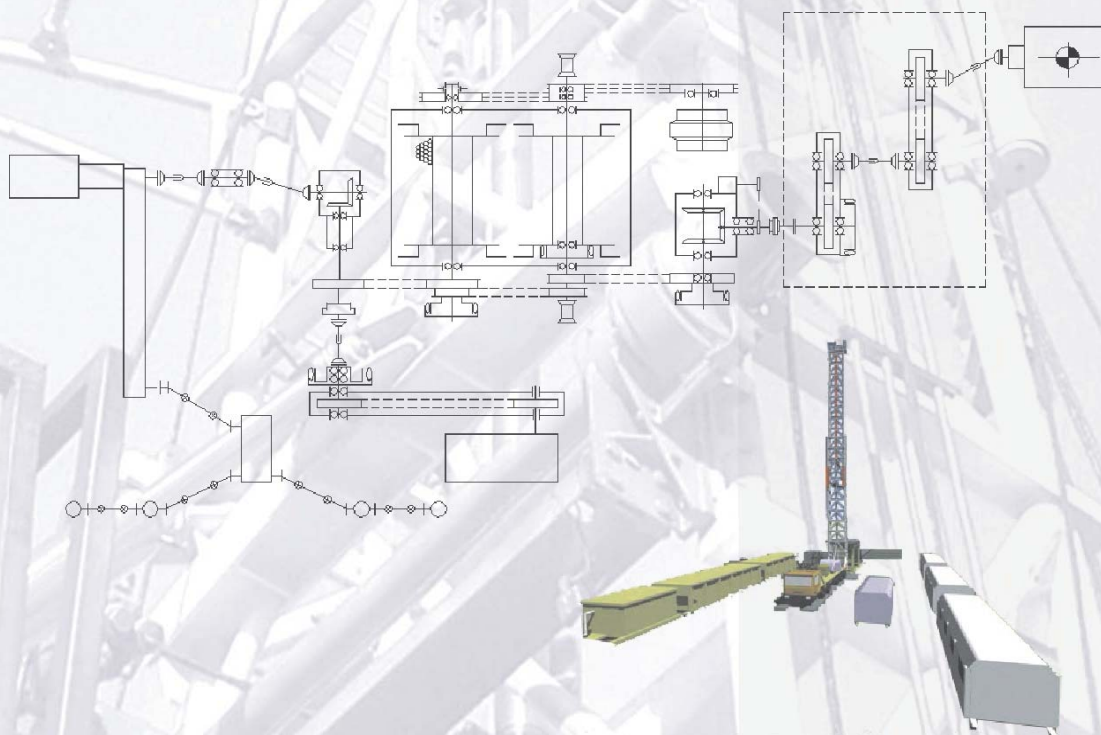
## Drilling and Workover Rig

### Components (main parts)

| Item | Denomination   | Quantity |
|------|--|----------|
| 1    | Truck DAC 60525 (10x8) type with engine:<br>- C15 (525 HP/2100 rpm) or CAT 3408C-DITA (505 HP/2100 rpm) and ALLISON M 5610 ARDB transmission or<br>- IAMZ 8424 (470 CP/2100 rpm) and ALLISON M 5610 transmission | 1        |
| 2    | MU 100-33,4 Mast incl. stable section and unwinder   | 1        |
| 3    | Monkey board   | 1        |
| 4    | Main drawworks TF 15 (one drum)  | 1        |
| 5    | FH-560 Hydromatic brake  | 1        |
| 6    | Traveller block MC 100x25  | 1        |
| 7    | Hydraulic system   | 1        |
| 8    | Air system   | 1        |
| 9    | Electric system  | 1        |

### Optional

| Item | Denomination                                   | Quantity |
|------|--|----------|
| 1    | CH 125 Swivel                                  | 1        |
| 2    | MR 205 mechanic rotary table                   | 1        |
| 3    | DSD make up & break out device                 | 1        |
| 4    | TH 4.5 auxiliary hydraulic winch               | 1        |
| 5    | Substructure for MR 205                        | 1        |
| 6    | ASI 15 hook load indicator (optional MD TOTCO) | 1        |
| 7    | Pipe rack                                      | 1        |
| 8    | 3 PN 700 Mud pumping unit                      | 1        |
| 9    | 160 c.m. Mud system                            | 1        |



TW 100 CA A5





## Rigs

through **ROMOIL**

### TW 227 DEC - T

Max Hook Load **227 tf**  
Operating Depth **12 000 m**

#### Purpose

To perform overhauling and workover operations for oil & gas wells.

Also specially designed to perform:

- pull in & out drill pipes, lifting pipes and pumping rods
- bailing
- milling of sand and cement plugs
- milling of side outlets in casing
- deepening of wells
- productions operations of wells.

Rig is produced:

- from viewpoint of site location: block module version trailer mounted
- for various climate conditions: arctic, temperate and tropical.

#### Technical specification

|   |          |  |                    |
|---|----------|--|--------------------|
| Hook static operating load (10 lines)                         | 227 tf   | Main wire line pull                    | 28 tf              |
| Hook max. Working load  | 200 tf   | Traveller block sheave no.             | 5                  |
| Well repairing operations with 2 7/8 (12.19 kg/m) drill pipes | 1200 m   | Crown block sheave no.                 | 6                  |
| Mast type   | MU-227-T | Swivel max. static load                | 250 tf             |
| Mast clearance (ground to crownblock)                         | 46 m     | Rotary table opening                   | 698.5 mm (27 1/2") |
| Max. length of stands   | 27 m     | Rotary table max. static load          | 500 tf             |
| Drawworks entry power   | 1000 HP  | Rotary table max speed                 | 300 RPM            |
| Drawworks drum no.  | 1        | Substructure height                    | 7.3 m              |
| Main wire line OD   | 32 mm    | Mud pump                               | 2 x 1000 HP        |
| Main drum speed no.   | 4+4 R    | Drilling fluid mud volume (mud system) | 256 c.m.           |



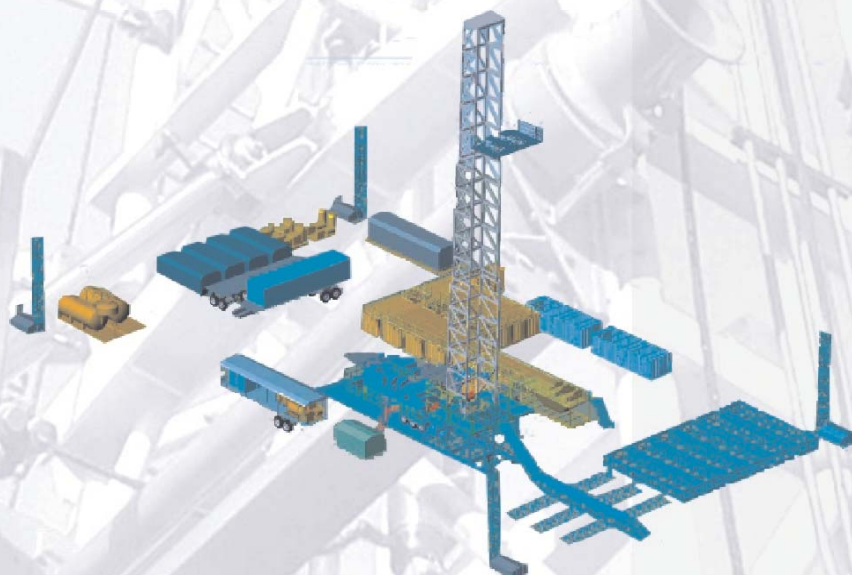


# Rigs

## Workover and service rig

### Components (main parts)

| Item | Denomination   | Quantity |
|------|--|----------|
| 1    | Drawworks TF 28  | 1        |
| 2    | Drive motor GE 752 ARB 3   | 1        |
| 3    | Electromagnetic brake ELMAGCO Type 6032  | 1        |
| 4    | Heavy duty automatic bit driller DAAS G  | 1        |
| 5    | Trailer for power unit drawworks   | 1        |
| 6    | Traveling block 5 x 32 MC 250  | 1        |
| 7    | Mast MU 227 T, trailer package   | 1        |
| 8    | Crown block 6 x 32 GF - 250  | 1        |
| 9    | Monkey board   | 1        |
| 10   | Substructure for MR 275, trailer mounted   | 1        |
| 11   | Rotary table MRL 275 with GE 752 ARB 3   | 1        |
| 12   | Swivel UV 250 MA   | 1        |
| 13   | Hydraulic winch 4.5 tf   | 1        |
| 14   | MD TOTCO instrumentation   | 1        |
| 15   | Pipe rack  | 1        |
| 16   | Hydrostatic station and air unit, trailer mounted                                  | 1        |
| 17   | Hydraulic system   | 1        |
| 18   | Air system   | 1        |
| 19   | Electric system  | 1        |
| 20   | Generator sets mobile, trailer mounted   | 4        |
| 21   | SCR Room, trailer mounted  | 1        |
| 22   | Motor pump unit Wirth TPK 7 1/4" x 8 1/2" - 1000 with GE 752 ARB 3 trailer mounted | 2        |
| 23   | Mud system 256 c.m.  | 1        |
| 24   | Truck  | 1        |



TW 227 DEC - T



## Filters

Natural gas filter type is used in all conditions where natural gas needs to be cleaned of solid and liquid impurities, coming with the gas flow. In the first step F.S. filter carries out a separation, succeeded by filtration, in the second step.

Filter is executed in a welded design made by steel, being composed of:

1. Separator body
2. Filter pad
3. Elliptic bottom supplied with drain and blow off connections
4. Blind flange having airing connection
5. Tube of the separator
6. Filter unit
7. Flanged inlet
8. Flanged outlet
9. Deflector

The F.G.N. natural gas filter is used in all conditions where natural gas needs to be filtered with the function to restrain solid particles and partial liquid particles as well, coming with the gas flow.



## Regulating and Metering Stations

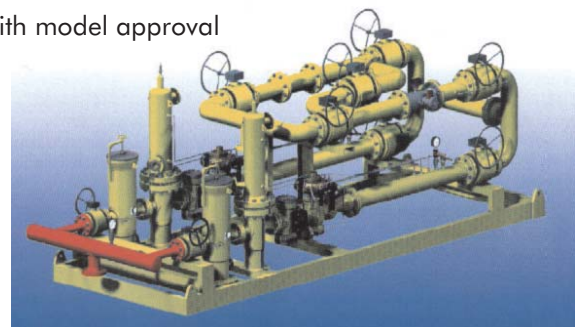
REGULATING AND METERING STATION – 1T PN 25 (40) (64)  
 DN/DN 50/50; 50/80; 80/100; 100/150

Basic configuration:

- filtering installation ( filter with 160 or 10 $\mu$  filter fineness)
- regulating installation ( direct or indirect pilot regulators, depends on pressure stages and flow)
- safety (under-and overpressure blocking devices and pressure valve)
- metering line ( turbine or rotary meter and imported PTZ – corrector – with model approval from de Romanian Legal Bureau of Metrology)
- odorizer
- indicating gauges ( manometers and thermometers)
- metallic cabinet for the mechanic part

Optional :

- separating installation
- heating installation
- metallic cabinet to protect heating part







## Typifield Distribution Regulating and Metering Station R.M.S. - DN/DN PN 16

Fundamental configuration:

- filtering installation ( 160 or 10  $\mu$  fineness filters)
- regulating equipment (direct or indirect steered regulators, depending on pressure stages and on flow).
- safety (under or overpressure blocking devices and pressure valve)
- metering outfit (turbine and rotary pistons gasmeters and imported PTZ corrector – a R.L.M.O. approved model)( Romanian Legal Metrology Office).
- indicating devices (manometers and thermometers)
- metallic case

Optional !

- differential pressure manometers
- metering with other certified devices

